Usenet Newsgroup Archive: rec.radio.amateur.homebrew

2004-01 - 2004-05

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Date span: 2004-01-01 through 2004-05-31

Source text: rec.radio.amateur.homebrew.txt

Source item: https://archive.org/details/usenet-rec

Messages included in this PDF: 4,095

Message records with no readable body available in the source text: 4

Messages are presented chronologically by archived date.

Binary or encoded payloads are not printed as blocks of encoded text; a placeholder appears where such material was detected. The original source text is unchanged.

1. Re: CW software decoder algorithm?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 00:34:31 UTC
From: Richard Hosking <richardh@iinet.net.au>
Message-ID: <3ff36bbe$0$1756$5a62ac22@freenews.iinet.net.au>
Source record: 29888

Thanks to all for your replies
With regard to Tim's idea of the dual comparators, I presume these would in "series". For the integration idea to work, the comparators would obviously have to have their gain set carefully, otherwise random noise would integrate to 1/2 time and be interpreted as signal. The circuit I was thinking of would set the DC comparison point at halfway (say 2.5V for a 5V logic level) with the DC level of the signal also at 2.5V. I presume in your system the uP controls the comparison voltage and sets it with a DAC and the signal DC level is 0V. Is this correct?
In my idea I was going to use the timing of signal transitions in a hard limited signal. If there were several transitions with the same timing, I would presume a "tone" was present and signal was being received. Randomly timed transitions would indicate noise.The uP could follow the tone as an adaptive filter to track carrier freq. Once carrier is received the uP then captures dot, dash and space timing with the histogram as you describe. If a moving average filter of these is kept, then the uP could track sender speed variations.
Anyone have ideas as to the theoretical performance of such an idea or any potential problems?

Thanks again
Richard
Tim Wescott <tim@wescottnospamdesign.com> wrote in message news:vv4vhbpgqbpke1@corp.supernews.com...
> Disclaimer: I've never decoded morse in my life, so most of what I write is
> educated guessing.
>
> For my master's thesis I built a receiver that demodulated 400 baud MSK.
> The RF chain delivered a signal centered around 2kHz to a 68HC11 which
> sampled at 6400Hz and demodulated the data entirely in software -- and it
> only had 2k bytes of code space. Granted, it was all in assembly, and it
> used 94% of the available processor time to do it, but it did work. In
> spite of having some really ugly compromises in the signal processing (the
> sampling rate was really too low, and the only "multiply" was to add, not
> add, or subtract from an accumulator) the receiver had performance within a
> dB of the theoretical optimum. I think with something modern like an AVR or
> a PIC a 16-baud OOK signal should be possible (fun, too).
>
> OK, so you still have the problem with the math.
>
> Consider using not one, but two comparators to square up your signal, so a

> "non-signal" rarely gets above the threshold. You're back to needing AGC
> (at least to set the comparator), but you can close the loop in your
> software by looking at the comparator outputs for the right signatures
(too
> much output = too low threshold, too little output = too high threshold),
> and set the threshold from the uP. With a good signal to noise ratio this
> should have a nice broad center to it that'll be easy to find. With a
good
> narrow CW filter your signal to noise ratio will get better...
>
> Once your threshold is set you can integrate the "buzz" from the
comparators
> to see if you're receiving a carrier. You should probably integrate for
> some period of time (the length of the fastest code you want to receive
> would be good, it'd give you a sorta-kinda-matched filter) and take the
> presense of signal 1/2 of the time to indicate the transmitter is "on".
>
> I like the idea of using the dibits to form a PLL, but for receiving bad
> code at an unknown rate you'd probably be better off making a little
> histogram of the on and off times of the code. You should be able to see
> two peaks in the histogram for "on" corresponding to dot and dash, and
three
> for "off" corresponding to intra-letter, inter-letter and inter-word
> spacing. At this point you can start looking for dashes, dots, and spaces
> (maybe going back over your data to catch the beginning of the message, if
> you have enough RAM) and decoding words. You could also estimate the
speed
> of the code that you're receiving and feed it back to your KSMF (that's
> kinda-sorta-matched filter, of course) for better noise figure.
>
> Once you have your stream of dashes, dots, inter-charater and inter-word
> spaces you can separate the charaters, look them up in a table and just
> reject anything that doesn't seem to fit. I suspect that your performance
> would be pretty good at this point, and if not the theoretical
ne-plus-ultra
> of decoders it would be better at receiving the lousy senders than
> Wofgang's.
>
> "Richard Hosking" <richardh@iinet.net.au> wrote in message
> news:3ff16bfb$0$1741$5a62ac22@freenews.iinet.net.au...
> > Wolfgang
> > Thanks for your reply
> > I am not very sophisticated mathematically and I have not studied
> > communication theory. Your article is most helpful. However it looks as
> >
>
>

2. Re: Lots of 500: 50V 22uF Electrolytic Capacitors :: $ 27 SHIPPED

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 00:46:53 UTC
From: Freddie <brianNOSPAM86@iquest.net>
Message-ID: <16KIb.17503$IM3.12893@newsread3.news.atl.earthlink.net>
Source record: 29889

What is the date code on these?

"Jerry Rakar" <jrakar@en.com> wrote in message
news:10f72e79.0312311442.6f95d3d9@posting.google.com...
> ==
>
> Lots of 500: 50V 22uF Electrolytic Capacitors
>
> The price is: $ 27.00 per factory sealed bag of 500
>
> which INCLUDES the UPS shipping cost
>
> Check out more info and pics at:
>
> http://www.jrakar.com/glw/electronics/capacitors/50velect.htm
>
>
>
>
==
=
>
> Also, please check out our other lists of Capacitors for Sale at:
>
> http://www.jrakar.com/glw/electronics/caps.htm
>
>
> Thanks,
>
> Jerry
>
>
>
==
==========
>
> Please also check out our other pages:
>
> Main Electronic Components page at:
> http://www.jrakar.com/glw/electronics/ec.htm
>
> Capacitors for Sale page at:
> http://www.jrakar.com/glw/electronics/caps.htm
>

> Crystals for Sale page at:
> http://www.jrakar.com/glw/electronics/crystals.htm
>
> DIP Switches for Sale page at:
> http://www.jrakar.com/glw/electronics/dipswitches.htm
>
> ICs for Sale page at:
> http://www.jrakar.com/glw/electronics/ics.htm
>
> Relays for Sale page at:
> http://www.jrakar.com/glw/electronics/relays.htm
>
> Sockets for Sale page at:
> http://www.jrakar.com/glw/electronics/sockets.htm
>
> Main Web Page at: www.jrakar.com
>
> :: Thank You ::
>
>
>
==========

3. Re: WTD Leader LAG-26 manual/ Lodestar AG-2601A AG-2601A manua

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 03:06:10 UTC
From: Buck Frobisher <farside114@hotmail.com>
Message-ID: <t8MIb.10936$Vl6.2217722@news20.bellglobal.com>
Source record: 29891
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

Leader is still active in supplying them. I'm assuming you need the service manual. I called them and spoke to a lady in their parts department who emailed me the owners' manual for free and quoted me US$80 for a printed copy of the service manual. I couldn't find a freebee service manual for my 8100 'scope though. If you find a source, thanks for letting me know.

see Leader at http://www.leaderusa.com/

--
"Stay calm. Be brave. Wait for the signs."

regards,

Frank Johansen
Aurora, Ontario

"Carl WA1KPD" <nantucketbound@yahoo.com> wrote in message
news:NsadnTXJspkHr26iRVn-vA@comcast.com...
> Help!
> I need a manual for a Leader LAG-26 audio generator. the Lodestar AG2601a
> may be the same unit
>
> AAAAAAAAAARRRRRRRRRRGHHHHHHHHHH
>
> Trying to get the homebrew 6L6 modulator working I accidentally toasted
the
> input to my leader LAG-26 audio generator with 500VDC into the audio out.
> Several resistors, possibly some transistors went south. Anyone have a
> source for the manual? I have not been able to locate one on the web.....
>
> Thanks and 73
> --
> Carl
> WA1KPD
> Visit My Boatanchor Collection at
> http://home.comcast.net/~chnord/wa1kpd.html
> --
--
> ------------------
> Disclaimer: Any resemblance to the views of anybody living or dead is
> coincidental.
> No animals were hurt in the writing of this
> response -- unless you count my dog who desperately wants to go outside
now.
> --

--
> ----------------------
>
>

4. Re: 12 v timer project ... need ideas!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 03:15:51 UTC
From: **THE-RFI-EMI-GUY** <NoSpamBogus@NoSpamBogus.com>
Message-ID: <3FF390E7.90308@NoSpamBogus.com>
Source record: 29890

Check the hardware store for electronic watering timers. There are some
that work from AA batteries. Hack it open, replace the motor with a
relay. You will probably need a latching relay arrangement or be
otherwise creative as the timer runs the motor for a few seconds open
and closed.

J999w wrote:

>I'm looking for ideas for a stand alone timer to turn on and off a remote
>shortwave or BCB receiver and tape recorder. No AC mains available. Switching
>requirements no more than about 5 amps.
>
>Haven't had much luck scouring the web.
>
>Ideas?
>
>John WB9UAI
>
>
>
>

--
Joe Leikhim K4SAT

"Jazz is not dead. It just smells funny." -F.Z.

5. Re: CW Sounder 1000 ohm coil voltage?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 04:54:48 UTC
From: gtidler@netusa1.net
Message-ID: <9c0823eb.0312312054.574a136c@posting.google.com>
Source record: 29892
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

You might check out this url for some information.

http://members.tripod.com/morse_telegraph_club/images/especs.gif

Garry WW9GT

Good luck and have fun

> I've got a 1000 ohm sounder here that I'd like to operate. Is/was there as
> standard/defined voltage or current used by telegraph services for the
> various mechanical telegraph sounders, based on their coil resistance?
>
> Thanks for your reply answers.
>
> skipp025 at yahoo.com

6. Re: Source for Microwave Diodes?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 10:18:38 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <2uSIb.574604$0v4.23028876@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29893

http://www.usbid.com/search/results1.cfm
I assume you are looking for Zero Bias Schottky diodes. These are similar to the diodes that are used in the Boonton RF Probes. Turn-on level is around -54dBm. If you don't need the Zero Bias types, I've got a reel of SOT-23 types that are good toe 10GHz. I would be willing to sell a few of these.

Pete

Ken Gunton <deadletterbox@techlock.com> wrote in message news:dcc6vvcul3joideqk1497qbig8pvccnfu9@4ax.com...
> We have 1N23Gs in stock.
>
> www.ohiomicrowave.com
>
> Regards,
> Ken Gunton
> WB6QWF
>
>
> On 30 Dec 2003 19:47:01 -0800, tayl0rr@yahoo.com (Robert) wrote:
>
> Does anyone know of a source for Microwave Diodes in quantities less
> than 100 pieces? I'm specifically looking for HSMS 2850 but any site
> that carries microwave diodes would be helpfull.
>
> I tried Microwave Components but their number has been disconnected.
>
> Thanks
> Rob
> AG4WR
>
> Ken Gunton WB6QWF ken att ohiomicrowave dottt commm
> Ohio Microwave
> Microwave and RF Components to 110 GHz
> http://www.ohiomicrowave.com

7. Re: CW Sounder 1000 ohm coil voltage?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 12:52:03 UTC
From: gtidler@netusa1.net
Message-ID: <9c0823eb.0401010452.48a71671@posting.google.com>
Source record: 29894
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

Well , that didn't work , try

http://members.tripod.com/morse_telegraph_club/

Garry WW9GT

gtidler@netusa1.net (Garry W Tidler WW9GT) wrote in message
news:<9c0823eb.0312312054.574a136c@posting.google.com>...
> You might check out this url for some information.
>
> http://members.tripod.com/morse_telegraph_club/images/especs.gif
>
> Garry WW9GT
>
> Good luck and have fun
>
> >
> > I've got a 1000 ohm sounder here that I'd like to operate. Is/was there as
> > standard/defined voltage or current used by telegraph services for the
> > various mechanical telegraph sounders, based on their coil resistance?
> >
> > Thanks for your reply answers.
> >
> > skipp025 at yahoo.com

8. Re: CW software decoder algorithm?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 13:34:25 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <vv88f6fp40v6bf@corp.supernews.com>
Source record: 29895

"Richard Hosking" <richardh@iinet.net.au> wrote in message
news:3ff36bbe$0$1756$5a62ac22@freenews.iinet.net.au...

> In my idea I was going to use the timing of signal transitions in a hard
> limited signal.

You really don't want to muck with limiting. Probably the biggest challenge is differentiating the signal from the noise. If you limit the signal, what you have done is brought the signal level closer to the noise level, making your detection problem more difficult. Typically, the signal is higher than the noise almost all the time, so what you want to do is have some sort of threshold below which you will assume is noise. You are still going to have to deal with the occasional pop.

> If there were several transitions with the same timing, I
> would presume a "tone" was present and signal was being received. Randomly
> timed transitions would indicate noise.

This approach makes some sense, although I'm not so sure that a simple approach like a 567 or 2211 wouldn't accomplish the same thing with less effort. Keep in mind that the frequency of those transitions is also going to be limited to a fairly narrow range if you are receiving CW. But separating the CW from the noise isn't as simple as it sounds.

> moving average filter of these is kept, then the uP could track sender
speed
> variations.
> Anyone have ideas as to the theoretical performance of such an idea or any
> potential problems?

Again, you have the same challenge OK3OIL's code has. You need to be fairly responsive to speed changes or it can take a long time to lock on to another station. But, you don't want to allow strings of the same element to confuse you. Strings of a dozen or more dits are fairly common, both as an error indication and in words like less. On the other hand, numbers like the year 2000 can result in a long string of dahs. The big challenge is keeping the response to changes while not being mislead.

..

9. W: FTS-12 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 15:11:43 UTC
From: DL7JSK <truckdrivingman@hotmail.com>
Message-ID: <bt1dc7lps04$1@news.t-online.com>
Source record: 29896
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Hello NG
Since the Yaesu FTS-12 ctcss unit is no longer available,I'd need the schematic.Can someone mail it to me ?

73
Tom

10. 25R semi rigid??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 15:19:12 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1072970352.11780@smtp-1.griffin.com>
Source record: 29797

hi happy new years to you all....

looking to buy some 25R semirigid..anyone know of a UK sourse..only looking
for small quanity..ie 2-3 m
(for input/output transformers)

simon g0zen..

11. Jacks for voltage adaptersreceptacles?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 16:15:08 UTC
From: fazamy@aol.com
Message-ID: <20040101111508.12155.00002075@mb-m05.aol.com>
Source record: 29798

I got a bunch of ac to dc voltage transformers that I saved over the years after the appliances that used them got replaced, e.g., toys, wireless phones etc. Is there a source of purchasable jacks that accept these things since the jacks are different sizes?

Thanks,
KB2AMY

12. Building Recommentations... Lots of em ;-)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 16:44:04 UTC
From: Vaughn Combs <n2bha@arrl.net>
Message-ID: <o7YIb.99971$JW3.87288@twister.nyroc.rr.com>
Source record: 29799

Greetings,

I figures that this would be the BEST group to ask these questions. I am getting back into building after quite a while. I am putting in a section in the attic shack for testing and fabrication and have am starting to equip things. I already have some relatively good test gear, Tektronics 475A, DM44, sig generator, etc. but want to set up for fabrication. I have been wondering what most of you find as indispensible on your benches. I really want a PCB vise/holder that would aid in the fabrication process.

If any of you do your own design/fab of PCBs I would also be very interested in what you find are the best tools/techniques. If you are using software to go from circuits to black PCB mask I am VERY interested in this (freeware/shareware is best). I have been reading some of the sites but I am most interested in what you as experienced homebrewers like the MOST.

I have done some kit building and fab long ago but I have been out of it for quite some time. I have ordered an elecraft K1 to get my soldering back into shape ;-)

Many Thanks and 73,
Vaughn

13. Homebrew questions...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 17:03:31 UTC
From: Vaughn Combs <n2bha@arrl.net>
Message-ID: <DpYIb.100095$JW3.94148@twister.nyroc.rr.com>
Source record: 29800
Cross-posted to: alt.radio.amateur,rec.radio.amateur.homebrew,rec.radio.amateur.misc

Greetings,

I figured that this would be one of the BEST groups to ask these questions. I am
getting back into building after quite a while. I am putting in a section in the attic shack for testing and fabrication and I have started to equip things. I already have some relatively good test gear, Tektronics 475A, DM44, sig generator, etc. but want to set up for fabrication. I have been wondering what most of you find as indispensible on your benches. I really want a PCB vise/holder that would aid in the fabrication process.

If any of you do your own design/fab of PCBs I would also be very interested in what you find are the best tools/techniques. If you are using software to go from circuits to black PCB mask I am VERY interested in this (freeware/shareware is best). I have been reading some of the sites but I am most interested in what you as experienced homebrewers like the MOST.

I have done some kit building and fab long ago but I have been out of it for quite some time. I have ordered an elecraft K1 to get my soldering back into shape ;-)

Many Thanks and 73,
Vaughn

14. Re: Minicircuits Labs products

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 17:44:44 UTC
From: Gian Luca Cazzola <glcazzola@tin.it>
Message-ID: <g0ZIb.28412$VW.1322606@news3.tin.it>
Source record: 29801

Two years ago I bought directly from their factory address two splitters for me and a friend of mine.
So apart that they are very good products I can say also that I received a good price and a fast delivery to Italy.
Gian IK4EWX

"jorge Castano" <jorge.castano@wanadooadsl.net> ha scritto nel messaggio news:842008970.1071940175781.JavaMail.usenet@eresmas.com...
> Hi!
>
> Anybody knows if Minicircuits Labs sell overseas? I am in Spain, and the local representative only
> sell to companies (or ask for a large number of minimum items to process the order) I know that
> MiniCircuits has a 1-800 number in US, but i do not know if they will send me the order.
>
> Any help will be welcome.
>
>

15. great way to learn microcontrollers!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 18:12:23 UTC
From: Larry Gagnon <lagagnon@fakeuniserve.com>
Message-ID: <vv8onra4lk19b3@corp.supernews.com>
Source record: 29802

Just thought I would mention to all newsgroup readers the incredible deal available from Zilog. They have their Zilog Encore Z8 development kit, which includes a development board, eZ8 processor, C compiler, assembler, simulator, IDE, cabling, documentation and more for a mere $40 US (available from Mouser and others).

I have been using this development kit for a few months. It is a fantastic way to learn about microprocessors, microcontrollers, C and assembler programming, for a great price. A C compiler alone will cost you more than $40 for most controllers. I have no beneficial interest in Zilog, but their product is terrific.

See:

http://www.zilog.com/products/partdetails.asp?id=Z8ENCORE000ZCO

Larry Gagnon VE7EA
****
to send direct email remove "fake"

16. Re: Jacks for voltage adaptersreceptacles?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 18:44:15 UTC
From: Bumper <bumper@nospam.com>
Message-ID: <3FF46A7E.D8AA7AD3@nospam.com>
Source record: 29803

Hi,

http://www.mouser.com is one source, online pdf catalog, fast ship and no minimum orders

bumper

FAZAMY wrote:

> I got a bunch of ac to dc voltage transformers that I saved over the years
> after the appliances that used them got replaced, e.g., toys, wireless phones
> etc. Is there a source of purchasable jacks that accept these things since the
> jacks are different sizes?
>
> Thanks,
> KB2AMY

17. seek contact-cleaner saturated swabs/wipes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 19:02:46 UTC
From: alanh_27@yahoo.com
Message-ID: <1e3670a7.0401011102.12de8e19@posting.google.com>
Source record: 29804
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

contact cleaner is usually sold as a can of aerosol-spray.

I seek it in swab/wipe form, preferably in unit-pack. Lots of alcohol-water pads out there, I don't want to put water on my equipment. Anyway, it takes the real solvents (eg, hexane) to get the bad crap off. I'd settle for acetone swabs, I suppose.

Who sells the stuff? URLs, snail-mail contact info?

18. Re: great way to learn microcontrollers!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 19:48:01 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <RP_Ib.9310$qS3.3133@nwrdny03.gnilink.net>
Source record: 29805

MicroChip has a similar package for their processor called a "PICkit":
http://www.microchip.com/1010/pline/tools/picmicro/demo/pickit/index.htm

It's $36.

This is what I used as the control platform for my HF Lab system:
http://mysite.verizon.net/jdrocci/

Joe
W3JDR

"Larry Gagnon" <lagagnon@fakeuniserve.com> wrote in message
news:vv8onra4lk19b3@corp.supernews.com...
> Just thought I would mention to all newsgroup readers the incredible deal
> available from Zilog. They have their Zilog Encore Z8 development kit,
> which includes a development board, eZ8 processor, C compiler, assembler,
> simulator, IDE, cabling, documentation and more for a mere $40 US
> (available from Mouser and others).
>
> I have been using this development kit for a few months. It is a fantastic
> way to learn about microprocessors, microcontrollers, C and assembler
> programming, for a great price. A C compiler alone will cost you more than
> $40 for most controllers. I have no beneficial interest in Zilog, but
their
> product is terrific.
>
> See:
>
> http://www.zilog.com/products/partdetails.asp?id=Z8ENCORE000ZCO
>
>
> Larry Gagnon VE7EA
> ******************
> to send direct email remove "fake"

19. Re: Homebrew questions...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 19:55:10 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <vv8uoqjlf9ti70@corp.supernews.com>
Source record: 29806
Cross-posted to: alt.radio.amateur,rec.radio.amateur.homebrew,rec.radio.amateur.misc

The piece of test equipment that I've found most critical is my brain. Whenever I forget to use it bad things happen. If you're doing radio buy or build a good dip meter. They're hard to find new, but you can find them at hamfests and there's still nothing better for checking out resonant circuits.

When I'm building circuits for through-hole components I just use dead-bug construction. There are numerous articles in QST on the technique, and the newer ARRL handbooks detail some of the methods. I prefer the ground-plane style where you never cut up your circuit board at all.

If I did need a circuit board these days I would be _very_ tempted to use one of the gazillion quick-turn PCB houses out there. There are a number of them that are oriented toward the hobbyist, and they do surface-mount quality boards (at least one, ExpressPCB, offers a kit for doing reflow in a toaster oven as well). Most have an "economy" rate where they charge around $80 to do a pair of 3"x5" boards, and their "regular" service isn't all that bad either. Unless you are very desperately poor I'd recommend that you check them out.

"Vaughn Combs" <n2bha@arrl.net> wrote in message
news:DpYIb.100095$JW3.94148@twister.nyroc.rr.com...
> Greetings,
>
> I figured that this would be one of the BEST groups to ask these
questions.
> I am
> getting back into building after quite a while. I am putting in a section
in
> the attic shack for testing and fabrication and I have started to equip
> things. I already have some relatively good test gear, Tektronics 475A,
> DM44, sig generator, etc. but want to set up for fabrication. I have been
> wondering what most of you find as indispensible on your benches. I really
> want a PCB vise/holder that would aid in the fabrication process.
>
> If any of you do your own design/fab of PCBs I would also be very
interested
> in what you find are the best tools/techniques. If you are using software
to
> go from circuits to black PCB mask I am VERY interested in this
> (freeware/shareware is best). I have been reading some of the sites but I
am
> most interested in what you as experienced homebrewers like the MOST.
>

> I have done some kit building and fab long ago but I have been out of it
for
> quite some time. I have ordered an elecraft K1 to get my soldering back
into
> shape ;-)
>
> Many Thanks and 73,
> Vaughn
>
>

20. Re: Jacks for voltage adaptersreceptacles?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 20:12:22 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <vv8vqa2vgej22e@corp.supernews.com>
Source record: 29807

Radio Shack has some kits...
"FAZAMY" <fazamy@aol.com> wrote in message
news:20040101111508.12155.00002075@mb-m05.aol.com...
> I got a bunch of ac to dc voltage transformers that I saved over the years
> after the appliances that used them got replaced, e.g., toys, wireless
phones
> etc. Is there a source of purchasable jacks that accept these things since
the
> jacks are different sizes?
>
> Thanks,
> KB2AMY

21. Test, don't read

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 20:34:17 UTC
From: jg <jgxyz@fuse.net>
Message-ID: <3ff48449$0$79390$a04e5680@nnrp.fuse.net>
Source record: 29808

Test

22. Re: great way to learn microcontrollers!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 22:23:26 UTC
From: WB8RCR <removethis_wb8rcr@arrl.net>
Message-ID: <vv97e95ab1mg46@corp.supernews.com>
Source record: 29810

<SHAMELESS_PLUG>
Check out http://www.amqrp.org/elmer160/ if you are interested in learning
PICs.
</SHAMELESS_PLUG>

72 de WB8RCR

"W3JDR" <joe@roccis.com> wrote in message
news:RP_Ib.9310$qS3.3133@nwrdny03.gnilink.net...
> MicroChip has a similar package for their processor called a "PICkit":
> http://www.microchip.com/1010/pline/tools/picmicro/demo/pickit/index.htm
>
> It's $36.
>
> This is what I used as the control platform for my HF Lab system:
> http://mysite.verizon.net/jdrocci/
>
> Joe
> W3JDR
>
>
> "Larry Gagnon" <lagagnon@fakeuniserve.com> wrote in message
> news:vv8onra4lk19b3@corp.supernews.com...
> > Just thought I would mention to all newsgroup readers the incredible
deal
> > available from Zilog. They have their Zilog Encore Z8 development kit,
> > which includes a development board, eZ8 processor, C compiler,
assembler,
> > simulator, IDE, cabling, documentation and more for a mere $40 US
> > (available from Mouser and others).
> >
> > I have been using this development kit for a few months. It is a
fantastic
> > way to learn about microprocessors, microcontrollers, C and assembler
> > programming, for a great price. A C compiler alone will cost you more
than
> > $40 for most controllers. I have no beneficial interest in Zilog, but
> their
> > product is terrific.
> >
> > See:
> >
> > http://www.zilog.com/products/partdetails.asp?id=Z8ENCORE000ZCO
> >
> >

> > Larry Gagnon VE7EA
> > ******************
> > to send direct email remove "fake"
>
>

23. Kenwood TM-231A help needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-01 22:48:05 UTC
From: Don Smith <desmith@innercite.com>
Message-ID: <vv95cpgrf1cid5@corp.supernews.com>
Source record: 29809
Cross-posted to: rec.radio.swap,rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

I have a Kenwood TM-231A that I am trying to modify the frequency range. When I got it the radio was able to receive from low 2-meter frequencies to 160mhz plus but the transmit was only to about 148mhz. When I tried the installation of the D209 diode per the modifications instructions and service manual I lost the upper receive frequencies and only had the 2 meter frequencies. Is there something I am missing? Is there some other component that needs to be added or removed? Does the CPU have to be reset in any way.

Also I do not have the TSU-6 tone board installed. Will the radio still produce encode tones and if so, how do I change tones? Please respond by email. Thanks, 73's and Happy New Year to all. Don smith KB6GQA

--
"Firearms stand next in importance to the Constitution itself. They are the people's liberty teeth keystone... the rifle and the pistol are equally indispensable... more than 99% of them by their silence indicate that they are in safe and sane hands. The very atmosphere of firearms everywhere restrains evil interference. When firearms go, all goes, we need them every hour." George Washington (Address to 1st session of Congress)

24. BLX15CF

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 00:30:15 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1073003415.45948@smtp-1.griffin.com>
Source record: 29811

does anyone know the spec of the philips rf transistor BLF15CF..i know the spec on the BLX15..but the CF??
(date coded 1978) i am wondering if they will be good on 70mhz??i know the blx15 is but blx15cf..??

thanks simon g0zen

25. Re: seek contact-cleaner saturated swabs/wipes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 00:40:49 UTC
From: Bumper <bumper@nospam.com>
Message-ID: <3FF4BE0F.409A0E79@nospam.com>
Source record: 29812
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

Hi Alan,

http://www.caig.com

Caig labs makes Deoxit brand contact cleaner in spray, wipe and swabs.
Little expensive but you use microscopic drops at a time,
also works great on those scratchy pots !

bumper

Alan Horowitz wrote:

> contact cleaner is usually sold as a can of aerosol-spray.
>
> I seek it in swab/wipe form, preferably in unit-pack. Lots of
> alcohol-water pads out there, I don't want to put water on my
> equipment. Anyway, it takes the real solvents (eg, hexane) to get
> the bad crap off. I'd settle for acetone swabs, I suppose.
>
> Who sells the stuff? URLs, snail-mail contact info?

26. Re: Test, don't read

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 00:42:18 UTC
From: Bumper <bumper@nospam.com>
Message-ID: <3FF4BE69.94E965FD@nospam.com>
Source record: 29813

Hi

There are test groups for usenet so you can test all you like
without filling up the regular groups !

http://livinginternet.com/u/uu_test.htm

jg wrote:

> Test

27. Re: Test, don't read

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 02:53:06 UTC
From: Eamon Skelton <Xnospam@oceanfree.net>
Message-ID: <pan.2004.01.02.02.53.06.857375@oceanfree.net>
Source record: 29814

On Thu, 01 Jan 2004 20:34:17 +0000, jg wrote:

> Test
Fail.

--
Remove 'X' to reply by E-mail.
Linux 2.4.23

28. Re: Building Recommentations... Lots of em ;-)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 03:06:00 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <se5Jb.254718$_M.1167895@attbi_s54>
Source record: 29815

"Vaughn Combs" <n2bha@arrl.net> wrote in message
news:o7YIb.99971$JW3.87288@twister.nyroc.rr.com...
> Greetings,
>
> I figures that this would be the BEST group to ask these questions. I am
> getting back into building after quite a while. I am putting in a section
in
> the attic shack for testing and fabrication and have am starting to equip
> things. I already have some relatively good test gear, Tektronics 475A,
> DM44, sig generator, etc. but want to set up for fabrication. I have been
> wondering what most of you find as indispensible on your benches. I really
> want a PCB vise/holder that would aid in the fabrication process.
>
> If any of you do your own design/fab of PCBs I would also be very
interested
> in what you find are the best tools/techniques. If you are using software
to
> go from circuits to black PCB mask I am VERY interested in this
> (freeware/shareware is best). I have been reading some of the sites but I
am
> most interested in what you as experienced homebrewers like the MOST.
>
> I have done some kit building and fab long ago but I have been out of it
for
> quite some time. I have ordered an elecraft K1 to get my soldering back
into
> shape ;-)
>
> Many Thanks and 73,
> Vaughn

Vaughn -

I have been very happy with the PanaVise products for vises and PC board
holders.

I have use the Weller "TCP" series and "EC" series soldering stations for
almost all of my kits since 1975.

Starting places:
http://www.amasci.com/amateur/elehob.html

http://www.rac.ca/opsinfo/infobuild.htm

http://www.mtechnologies.com/building/atoz.htm

http://ww2.netnitco.net/users/wt9w/kit%20building.html

Greg
w9gb

29. Re: 12 v timer project ... need ideas!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 06:14:32 UTC
From: Doug Smith W9WI <w9wi@invalid.invalid>
Message-ID: <3FF50C48.3090403@invalid.invalid>
Source record: 29816

J999w wrote:
> I'm looking for ideas for a stand alone timer to turn on and off a remote
> shortwave or BCB receiver and tape recorder. No AC mains available. Switching
> requirements no more than about 5 amps.

Some Radio Shack digital AC timers actually run from batteries - run
even without AC present. (hit the "manual ON" switch & listen for the
relay to click with the unit not plugged in to AC)
--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com

30. AF

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 06:26:14 UTC
From: bhockenberry@verizon.net
Message-ID: <3da8ee77.46626090@news.verizon.net>
Source record: 29817

Looking for cheap but good sounding AF stage parts, kits, suggestions.
All my books are twenty years old.

31. Re: 3.894.5

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 07:20:09 UTC
From: Sarge <sarge43@ev1.net>
Message-ID: <vva6tfhjeti792@corp.supernews.com>
Source record: 29818
Cross-posted to: alt.ham-radio.dxing,alt.ham-radio.hf,alt.ham-radio.ssb,alt.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

"BIG AL" <imafuckingwindbag@bigalk4oka.net> wrote in message
news:vmpl8a7gu2319d@corp.supernews.com...
> ALL OF YOU PEOPLE NEED TO STAY OFF OF MY FREQUENCY. 3.894.5 IS BIG AL'S
> FREQUENCY. UNLESS YOU ARE INVITED DO NOT COME TO MY FREQUENCY. ESPECIALLY
> W8RBK ELVIE WITH HIS GIRLY VOICE. HO HO
>
>

Hahahahahaha! PLONK!

32. Re: Kenwood TM-231A help needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 08:09:55 UTC
From: Radioman <radio@ptt.edu>
Message-ID: <3FF52753.9366F317@ptt.edu>
Source record: 29819
Cross-posted to: rec.radio.swap,rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

> I have a Kenwood TM-231A that I am trying to modify the frequency range. When I got it the radio was able to receive from low
> 2-meter frequencies to 160mhz plus but the transmit was only to about 148mhz. When I tried the installation of the D209 diode per
> the modifications instructions and service manual I lost the upper receive frequencies and only had the 2 meter frequencies. Is
> there something I am missing? Is there some other component that needs to be added or removed? Does the CPU have to be reset in
> any way.
>
> Also I do not have the TSU-6 tone board installed. Will the radio still produce encode tones and if so, how do I change tones?
> Please respond by email. Thanks, 73's and Happy New Year to all. Don smith KB6GQA

Turn off your HTML and then try this link:
http://www.mods.dk/mods.php3?model=tm-231&radio=kenwood

33. Re: Yahoo Group for Radio Shack DX-394 Users

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 09:56:37 UTC
From: fiona <helimed@ntlworld.com>
Message-ID: <wfbJb.5014$Qr5.1655140@newsfep2-win.server.ntli.net>
Source record: 29820
Cross-posted to:
rec.radio.shortwave,alt.radio.scanner,alt.radio.scanner.uk,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

So despite all of the dross below and being the "co-ListOwner/co-Moderator
of the RADIOSHACKDX394 and DX-394C Yahoo groups" you still counldn't help
with a manual.

I wonder why?

"Tom Holden" <holden_family@sympatico.ca> wrote in message
news:lv1Ib.3572$Vl6.931110@news20.bellglobal.com...
> As co-ListOwner/co-Moderator of the RADIOSHACKDX394 and DX-394C Yahoo
> groups, I think I have a small obligation and privilege as 2003 draws to a
> close to look back over the past year in the life of our subject, the
> remarkable Radio Shack/Realistic DX-394 communications receiver plus the
> activity in our groups and share some observations with you. This has
indeed
> been a remarkable year for both - the number of messages and growth in
> membership perhaps being the easiest indicators.
>
> Over the nearly three years since jimtown54 founded RADIOSHACKDX394 it has
> grown to some 550 members, one of the largest product-specific
> communications receiver groups in Yahoo, second perhaps only to the DX398
> group. The message archive has mushroomed from a mere 88 messages added in
> 2001, an explosion of 546 more in 2002, to an amazing 1450 new messages in
> 2003. This signifies a growing knowledge of our DX-394 community and keen
> interest in the possibilities for improving this economical, feature-rich
> radio. Most members are from the US and Canada, there's a significant
number
> from the UK and small numbers from almost every continent.
>
> Early this year, I was prompted to consolidate all the known modifications
> into a master list or index so that people would not have to search in the
> thousands of messages and scattered pages on the Internet to discover the
> proverbial needle. Through the year, this index has grown to include 62
> mods - by far, more than for any other radio. For those willing to
> experiment with and learn a little radio-electronics, there can be few
more
> intriguing and rewarding platforms than the DX-394 as it combines both
> digital control and conventional analog RF electronics in a box that is
> larger and more spacious than most radios in its price range. It is
> relatively easy to work on, if you have good eyes and a steady hand!
>
> Interest in the digital control possibilities led to the formation of the
> DX-394C group last winter - now numbering 91 members and 89 messages. Few
> have undertaken the challenge of converting the DX-394 to computer control

> but the Files section is a rich trove of information to help the daring
ones
> embark. The group has been quiet since April - I hope to see more activity
> through the long winter nights and to resume my own PIC-based project (or
> re-launch it on another platform).
>
> Later in the year, John (KB9KQN) launched the DX394L group for those
> disinterested in modifications and wanting a community of fellow DX-394
> users with whom they could exchange general listening tips and interesting
> frequencies.
>
> John and Howard (derny_99) agreed to take on co-Moderator responsibilities
> for RADIOSHACKDX394 - new membership requests are now processed by one of
us
> within hours of the application. Spam and off-topic postings have been
> pretty well controlled. Recently, we escalated the security and now
require
> Moderator approval for initial postings from new members.
>
> Trade in the DX-394 on eBay continues at a steady pace since I started
> tracking sales from Oct 24. Fifty DX-394's have been sold since then, an
> average of over 5 per week. Average selling price was US$159 out of a
range
> from $105.50 to $265. The higher prices being commanded for well-modified
> radios.
>
> So 2003 has been a banner year for the DX-394. Let's hope it continues in
> 2004. I wish you good health and prosperity in the coming year along with
> great listening and learning with your DX-394(s).
>
> 73, Tom VE3MEO
>
>

34. Re: great way to learn microcontrollers!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 11:55:27 UTC
From: gwatts <gwatts@frontiernet.net>
Message-ID: <3FF55C2F.BCB2D6DD@frontiernet.net>
Source record: 29821

W3JDR wrote:
>
> MicroChip has a similar package for their processor called a "PICkit":
> http://www.microchip.com/1010/pline/tools/picmicro/demo/pickit/index.htm
>
> It's $36.

From the above page:
> Important Note:
> The PICkit(tm) 1 FLASH Starter Kit software will not run on Windows 98
> 1st edition. DO NOT INSTALL THIS SOFTWARE ON WINDOWS 98 1ST EDITION

The Zilog documentation says pretty much the same thing.

W8LNA

35. Re: great way to learn microcontrollers!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 12:30:30 UTC
From: wot.email.addr@which.email.addr.com
Message-ID: <2toavv49ssc09vlkiotoaan8rfr3d3hhe2@4ax.com>
Source record: 29822

> Just thought I would mention to all newsgroup readers the incredible deal
> available from Zilog. They have their Zilog Encore Z8 development kit,
> which includes a development board, eZ8 processor, C compiler, assembler,
> simulator, IDE, cabling, documentation and more for a mere $40 US
> (available from Mouser and others).
>
> I have been using this development kit for a few months. It is a fantastic
> way to learn about microprocessors, microcontrollers, C and assembler
> programming, for a great price. A C compiler alone will cost you more than
> $40 for most controllers. I have no beneficial interest in Zilog, but
> their product is terrific.
>
> See:
>
> http://www.zilog.com/products/partdetails.asp?id=Z8ENCORE000ZCO

Yeah, I have the z8!Encore dev kit (ï¿½23), not bad at all.

Complete dev kit, including in-circuit debugger, can't complain at that,
although their compiler has a few bugs (especially when code optimization is
enabled).

Clive

36. Re: great way to learn microcontrollers!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 12:43:58 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <ildJb.16649$x34.15106@nwrdny02.gnilink.net>
Source record: 29823

I'm running it on Windows 98SE and it's fine. I think the warning is due to the need for a USB port on the PC and only Win98SE and above officially support USB????

Joe
W3JDR

"gwatts" <gwatts@frontiernet.net> wrote in message news:3FF55C2F.BCB2D6DD@frontiernet.net...
>
>
> W3JDR wrote:
> >
> > MicroChip has a similar package for their processor called a "PICkit":
> > http://www.microchip.com/1010/pline/tools/picmicro/demo/pickit/index.htm
> >
> > It's $36.
>
> From the above page:
> > Important Note:
> > The PICkit(tm) 1 FLASH Starter Kit software will not run on Windows 98
> > 1st edition. DO NOT INSTALL THIS SOFTWARE ON WINDOWS 98 1ST EDITION
>
> The Zilog documentation says pretty much the same thing.
>
> W8LNA

37. Re: 12 v timer project ... need ideas!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 13:25:31 UTC
From: j999w@aol.com
Message-ID: <20040102082531.19854.00001454@mb-m01.aol.com>
Source record: 29824

>Some Radio Shack digital AC timers actually run from batteries - run
>even without AC present. (hit the "manual ON" switch & listen for the
>relay to click with the unit not plugged in to AC)
>--
>Doug Smith W9WI

I wonder if the sales clerk would know this? (doubtful).

Will check it out, thanks!

jw
wb9uai

38. Re: great way to learn microcontrollers!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 13:57:38 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <vvaugcc1nktk34@corp.supernews.com>
Source record: 29825

The 6.30 IDE (and I assume the 6.40, didn't check) requires that Internet Exploder be installed, I don't recall if it's 5 or 5.5, but a fairly recent version. As best I can tell, all it does with IE is splash up some readme's about a bunch of USB drivers, but the install checks for IE and won't install without it. Wouldn't surprise me if it also checked for SE or later, but that I didn't verify.

..

"W3JDR" <joe@roccis.com> wrote in message
news:iIdJb.16649$x34.15106@nwrdny02.gnilink.net...
> I'm running it on Windows 98SE and it's fine. I think the warning is due
to
> the need for a USB port on the PC and only Win98SE and above officially
> support USB????
>
> Joe
> W3JDR
>
>
> "gwatts" <gwatts@frontiernet.net> wrote in message
> news:3FF55C2F.BCB2D6DD@frontiernet.net...
> >
> >
> > W3JDR wrote:
> > >
> > > MicroChip has a similar package for their processor called a "PICkit":
> > >
http://www.microchip.com/1010/pline/tools/picmicro/demo/pickit/index.htm
> > >
> > > It's $36.
> >
> > From the above page:
> > > Important Note:
> > > The PICkit(tm) 1 FLASH Starter Kit software will not run on Windows 98
> > > 1st edition. DO NOT INSTALL THIS SOFTWARE ON WINDOWS 98 1ST EDITION
> >
> > The Zilog documentation says pretty much the same thing.
> >
> > W8LNA
>
>

39. Re: CW software decoder algorithm?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 14:44:02 UTC
From: "Wolfgang K. Meister" <no.mail@please.com>
Message-ID: <1n0bvv8alu4hf9okocf7a0anbb1sl6kc03@4ax.com>
Source record: 29826

Remark: The interface via a LPT port is possible by PortIO or other
free add ons to access direct the LPT port in Windows. Visual Basic or
Powerbasic could be used. The PEEK statement has to be replaced by the
equivalent access methode from the language to the port.

Please double check, could be there are some errors due to OCR
conversion.

73s
Wolfgang

World of the Brass Pounders:
Receive the Morse Code the easy way

by
ROBERT L KURTZ
4 SANTA BELLA RD
ROLLING HILLS CA 90274

scanned from an very old paper copy by
OE1MWW
WOLFGANG MEISTER
WENHARTGASSE 27/5
WIEN A-1210
AUSTRIA
email: oe1mww(at)qsl.net (replace the (at) with an @)

Original article starts here:

A great feature of a personal-computing hobby is that it can be used
to work with other hobbies. A case In point is

this little program to decode and print out Morse code. I original-ly
wrote this in machine lan-guage for my KIM

system, where it took up less than one page, and finally decided to
try it in BASIC.
Even though the program looks simple, it has some unusual surprises,
such as self-adaptive adjustment for changes

in code speed. In addi-tion, the influence of changes in dash or dot
length is weighted so that they must occur

five or six times in succession be-fore the computer decides that
there has been a bona fide speed change. As a

result, an occasional "bad" character will not mess up your copy; the
printout is extremely stable and the copy is

relatively foolproof.

The program also detects the end of the word and prints out a space, if required.
The program's memory needs are minorï¿½just a little over 1K of RAM is required. The program is written in Microsoft

BASIC on the KIM computer, but should operate with any relatively fast BASIC. From a hardware standpoint, if your

CRT or printer will go to 300 baud, this program will provide excellent copy of Morse code, up to 15 or 20 words

per minute. If your terminal operates up to 1200 baud, it will follow the Morse transmissions to well over 30 words

per minute.

Loading the Program

Input the program exactly as written, even though some of the instructions may seem re-dundant. It is written this

way to save operating timeï¿½a very important consideration when you are dealing with fast-acting dots and dashes.
Lines 10,20, 60, 110 and 150 instruct a PEEK to location 5888 (decimal). In the KIM com-puter, this is a peripheral

input address at 1700 (hex). This loca-tion reads a total of eight input ports as an eight-bit word.
The AND 1 on lines 10,20,60, 110 and 150 assures that the computer is only reading the port to which the incoming

Morse is connected obviously, this must be changed to fit your particular system.
In addition, the program assumes that when a dot or a dash occurs, a logic 0 appears on the input port. This is in

agreement with a "key down" shorting the input port to ground, and also in agreement with the hardware interface

cir-cuit described later. If your hookup provides a logic 1 during a dot and a dash, then lines 11, 30, 70,120 and

160 must be changed so that all IF A = 1 statements should read IF A = 0, and vice versa.

Program Description

Fig. 1 is a simplified flow diagram of the program. The initialization routine (lines 1 through 6) sets the lookup

table that will permit the printout of the proper character. The pro-gram then waits for a key down to occur (lines

10 and 11). The first part of the operating pro-gram (lines 20 through 80) mea-sures the length of time that the

key is down and compares this with the stored value for the length of a dash.
If the key is raised in less than one-half of the stored dash time, the computer writes a dot into the dot register

(line 30) and goes to the second part of the operating program.
If the key remains down longer than one-half of the dash time, a dash is stored in the dash register (line 50), and

the value of the dash time is up-dated with a one-to-four weight-ing (line 80). This is accom-plished by

multiplying the old value of the dash time by four, adding the new value, and then dividing by five. As a result,

the stored value of the dash time cannot change drastically from character to character, and the copy is not

susceptible to er-rors from erratic sending habits. The second part of the pro-gram (lines 100 through 190)

measures the length of time the key is up. if it's up less than one-half of the dash length, the program assumes

that the character is not complete and no printout is provided (see lines 100 through 130). If the key is up

longer, the program jumps to line 300, the print-character subroutine. If the key is up longer than twice the dash

length, the program assumes that a word is complete and a "space" is printed (lines 170 and 180).
Lookup Table
The heart of the program is the algorithm that counts the dots and dashes and develops a number used to look up the

ac-tual character to be printed, in other words, each combination of dots and dashes in Morse code has a discrete

number that commands a given character to be printed. This algorithm has three conditions as listed in Table 1.
Steps 1 and 2 keep repeating until the character is complete. When the program detects a key-up period longer than

one-half of a dash length, it is assumed that the character is complete and step 3 is accomplished (lines 300 to

430). The manner in which the lookup number for the letter D is formed is shown in Example 1. Interlace Hardware
Fig. 2 shows a typical circuit for connecting your radio re-ceiver to the computer. The NPN transistor is an R/C

coupled audio amplifier con-nected to a type 567 phase-lock loop circuit. The free-running frequency of the

phase-lock loop is set by the values of the capacitor and resistor con-nected to pins 5 and 6 of the 567, and is

approximately 2000 Hz. The capacitors on pins 1 and 2 of the PLL adjust the bandwidth to about 100 Hz, and the LED

serves as a tuning in-dicatorï¿½that is, It will start blinking when the signal Is in the center of this narrow

band-pass. This circuit is compatible with the program, as written, In that the output signal goes to a logic 0

when a dot or a dash occurs. The circuit shown is not my original idea, but has appeared in numerous publications;

you may have your own favorite circuit that you would like to use. As long as you maintain the same output logic (a

0 for a dot or dash), there will be no problem.

Incidentally, the circuit has another unique application. Since it is only activated by audio signals over a fairly

nar-row band, it can also be used to key an audio oscillator set to any frequency desired. When Morse CW comes in

amidst a jumble of other signals, the phase-lock loop picks out the signal you want and keys the audio

oscillator... and that is all you hear. A full-scale outline of the circuit board is shown in Fig. 3.
Adjusting the Program One of the advantages of writing this program in BASIC is the ease with which the com

putatlon constants can be changed. For Instance, you may wish to experiment with different algorithms to detect

whether a key-down signal is a a dot or a dash... to take care of "swlng-fisters." This can be accomplished easily

by chang-ing the factor in line 40 from (.5*0) to (.2S*C or <.75*C). By the same token, the constants In lines 111

and 151 can be changed to provide more lee-way for the formation of char-acters and spaces.

1. If the input signal is a dash:
A. Double the values in the dot and dash registers.
B. Add 1 to the dash register (see line 50).
2. If the input signal is a dot:
A. Double the values in the dot and dash registers.
B. Add 1 to the dot register (see line 30).
3. if the character is complete:
A. Double the value in the dash register.
B. Add the dash and dot registers to obtain the lookup number.
C. Clear the dot and dash registers.

Table 1.

EXAMPLE: D = -..

initial conditions: Dot register = 0, Dash register = 0.

First period: Input a dash.
2 times dash register =2x0 = 0.
2 times dot register =2x0 = 0.
Add 1 to dash register =1+0 = 1.
Summary: dash register = 1, dot register = 0.

Second period: Input a dot.
2 times dash register =2x1 = 2.
2 times dot register =2x0 = 0.
Add 1 to dot register =1+0 = 1.
Summary: dash register = 2, dot register = 1.

Third period: Input a dot.
2 times dash register =2x2 = 4.
2 times dot register =2x1 = 2.
Add 1 to dot register =1+2 = 3.
Summary: dash register = 4, dot register = 3.

End of Characterï¿½-determine lookup number for D.
2 times dash register =2x4 = 8.
Add dot register and dash register =8 + 3 = 11.
Answer: D = 11.

Example 1.

BASIC Code:

```
1 REM MORSE CODE READER - WRITTEN BY R. KURTZ - W6PR0
2 RESTORE
3 PRINT CHR$(26) : REM CAN DELETE - PUTS CURSOR AT TOP OF PAGE
5 DIM A$(100)
6 FOR N=l TO 100 : READ A$(N) : NEXT N
10 A=PEEK(5888) AND 1
11 IF A=l THEN 10
15 B=0
20 A=PEEK(5888) AND 1:B=B+10
30 IF A=l THEN C*((5*C)+(2*B))/6:DO=2*DO:DA-2*DA:DO=DO+l:GOTO 100
40 IF B<(.5*C) THEN 20
50 DO=2*DO:DA=2*DA:DA=DA+1
60 A=PEEK(5888) AND 1:B=B+10
70 IF A=0 THEN GOTO 60
80 C=((4*C)+B)/5
100 B=0
110 A-PEEK(5888) AND 1
111 B=B+10
120 IF A=0 THEN GOTO 15
130 IF B<(.5*C) THEN GOTO 110
140 GOSUB 300
```

```
150 A=PEEK(5888) AND 1
151 B=B+10
160 IF A=0 THEN GOTO 15
170 IF B<(2*C) THEN GOTO 150
180 PRINT " ";
190 GOTO 10
300 DA=DA*2
310 D=DA+DO
330 IF D>100 THEN D=100
340 PRINT A$(D);
350 DA=0:DO-0
360 RETURN
400 DATA E,T,I,A,N,M,S,U,R,W,D,K,G,O,H,V,F,-,L,-,P,J,B,X,C
410 DATA Y,Z,Q,-,-,5,4,-,3,-,-,-,2,-,-,-,-,-,-,-,1,6,-,/,-
420 DATA -,-,-,-,7,-,-,-,8,-,9,0,-,-,-,-,-,-,-,-,-,-,-,-,?
430 DATA -,-,-,-,-,-,-,-,.,-,-,-,-,-,-,-,-,-,-,-,-,-,-,-,-
```

The circuit for the interface is scanned and can be requested via email from oe1mww(at)qsl.net

40. Re: CW software decoder algorithm?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 14:51:21 UTC
From: "Wolfgang K. Meister" <no.mail@please.com>
Message-ID: <4a1bvvobn0ph8qgm7r5oegeegj87cemcd9@4ax.com>
Source record: 29827

On Fri, 02 Jan 2004 14:44:02 GMT, Wolfgang K. Meister
<no.mail@please.com> wrote:

line 350 should be 350 DA=0:DO=0

41. test

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 16:50:57 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <RjhJb.32740$tY5.709@nwrdny01.gnilink.net>
Source record: 29828

[No readable article body recovered]

42. Re: 3.894.5

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 18:30:48 UTC
From: Mike <mlawson1@twcny.rr.com>
Message-ID: <sNiJb.40441$q55.25728@twister.nyroc.rr.com>
Source record: 29829
Cross-posted to: alt.ham-radio.dxing,alt.ham-radio.hf,alt.ham-radio.ssb,alt.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

Idiot

"Sarge" <sarge43@ev1.net> wrote in message
news:vva6tfhjeti792@corp.supernews.com...
>
> "BIG AL" <imafuckingwindbag@bigalk4oka.net> wrote in message
> news:vmpl8a7gu2319d@corp.supernews.com...
> > ALL OF YOU PEOPLE NEED TO STAY OFF OF MY FREQUENCY. 3.894.5 IS BIG AL'S
> > FREQUENCY. UNLESS YOU ARE INVITED DO NOT COME TO MY FREQUENCY.
ESPECIALLY
> > W8RBK ELVIE WITH HIS GIRLY VOICE. HO HO
> >
> >
>
> Hahahahahaha! PLONK!
>
>

43. Re: AF

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 20:16:44 UTC
From: k7itm@aol.com
Message-ID: <3200347.0401021216.5570657@posting.google.com>
Source record: 29830

Um, what sort? Are you looking for low-level input with low noise and low distortion? Or are you looking for power output stages? How much power? Are you looking for something that will run efficiently from a battery supply, or will it be line powered? Do you have power supply voltage preferences? Please tell us a bit more about what you want to accomplish.

A visit to web sites like http://www.analog.com/index_noflash.html, http://www.national.com/, and http://www.ti.com/ will get you to selection trees and data sheets for audio (and other) ICs. All three of those have interesting ap notes and articles about various aspects of audio design, too. You can also make very high quality audio stages with discrete parts, but if your time is worth much, those might not be so cheap as the modern IC solutions.

Cheers,
Tom

bhockenberry@verizon.net (Ross Hockenberry) wrote in message news:<3da8ee77.46626090@news.verizon.net>...
> Looking for cheap but good sounding AF stage parts, kits, suggestions.
> All my books are twenty years old.

44. Re: Yahoo Group for Radio Shack DX-394 Users

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 20:32:10 UTC
From: mikemaghakian@yahoo.com
Message-ID: <7f80c3b4.0401021232.26676530@posting.google.com>
Source record: 29831
Cross-posted to:
rec.radio.shortwave,alt.radio.scanner,alt.radio.scanner.uk,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

the user manual is on the radio shack web site in PDF format and the
service manual is always for sale on ebay.

why are you attacking Tom ?

"fiona" <helimed@ntlworld.com> wrote in message
news:<wfbJb.5014$Qr5.1655140@newsfep2-win.server.ntli.net>...
> So despite all of the dross below and being the "co-ListOwner/co-Moderator
> of the RADIOSHACKDX394 and DX-394C Yahoo groups" you still counldn't help
> with a manual.
>
> I wonder why?
>
> "Tom Holden" <holden_family@sympatico.ca> wrote in message
> news:lv1Ib.3572$Vl6.931110@news20.bellglobal.com...
> > As co-ListOwner/co-Moderator of the RADIOSHACKDX394 and DX-394C Yahoo
> > groups, I think I have a small obligation and privilege as 2003 draws to a
> > close to look back over the past year in the life of our subject, the
> > remarkable Radio Shack/Realistic DX-394 communications receiver plus the
> > activity in our groups and share some observations with you. This has
> indeed
> > been a remarkable year for both - the number of messages and growth in
> > membership perhaps being the easiest indicators.
> >
> > Over the nearly three years since jimtown54 founded RADIOSHACKDX394 it has
> > grown to some 550 members, one of the largest product-specific
> > communications receiver groups in Yahoo, second perhaps only to the DX398
> > group. The message archive has mushroomed from a mere 88 messages added in
> > 2001, an explosion of 546 more in 2002, to an amazing 1450 new messages in
> > 2003. This signifies a growing knowledge of our DX-394 community and keen
> > interest in the possibilities for improving this economical, feature-rich
> > radio. Most members are from the US and Canada, there's a significant
> number
> > from the UK and small numbers from almost every continent.
> >
> > Early this year, I was prompted to consolidate all the known modifications
> > into a master list or index so that people would not have to search in the
> > thousands of messages and scattered pages on the Internet to discover the
> > proverbial needle. Through the year, this index has grown to include 62
> > mods - by far, more than for any other radio. For those willing to
> > experiment with and learn a little radio-electronics, there can be few
> more
> > intriguing and rewarding platforms than the DX-394 as it combines both

> > digital control and conventional analog RF electronics in a box that is
> > larger and more spacious than most radios in its price range. It is
> > relatively easy to work on, if you have good eyes and a steady hand!
> >
> > Interest in the digital control possibilities led to the formation of the
> > DX-394C group last winter - now numbering 91 members and 89 messages. Few
> > have undertaken the challenge of converting the DX-394 to computer control
> > but the Files section is a rich trove of information to help the daring
> ones
> > embark. The group has been quiet since April - I hope to see more activity
> > through the long winter nights and to resume my own PIC-based project (or
> > re-launch it on another platform).
> >
> > Later in the year, John (KB9KQN) launched the DX394L group for those
> > disinterested in modifications and wanting a community of fellow DX-394
> > users with whom they could exchange general listening tips and interesting
> > frequencies.
> >
> > John and Howard (derny_99) agreed to take on co-Moderator responsibilities
> > for RADIOSHACKDX394 - new membership requests are now processed by one of
> us
> > within hours of the application. Spam and off-topic postings have been
> > pretty well controlled. Recently, we escalated the security and now
> require
> > Moderator approval for initial postings from new members.
> >
> > Trade in the DX-394 on eBay continues at a steady pace since I started
> > tracking sales from Oct 24. Fifty DX-394's have been sold since then, an
> > average of over 5 per week. Average selling price was US$159 out of a
> range
> > from $105.50 to $265. The higher prices being commanded for well-modified
> > radios.
> >
> > So 2003 has been a banner year for the DX-394. Let's hope it continues in
> > 2004. I wish you good health and prosperity in the coming year along with
> > great listening and learning with your DX-394(s).
> >
> > 73, Tom VE3MEO
> >
> >

45. Re: AM Detector Info

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 22:00:32 UTC
From: LA8AK@online.no
Message-ID: <3ff5e837.18817308@news.online.no>
Source record: 29832

On Thu, 18 Jan 2001 13:04:25 -0500, Jake Brodsky <frussle@erols.com>
wrote:

>That doesn't look like a synchronous detector to me. It's not a bad
>circuit, but it has no synchronous oscillator to replace a selectively
>faded carrier.
>
>Instead it limits the carrier to recover it cleanly. This will work
>only as long as the sidebands never approach the magnitude of the full
>carrier. If they do (as they would in a deep fade) you'll get total
>garbage coming out of the detector.
>
>73,
>
Since it was some interest for it, I've put some different approaches
on my page http://home.online.no/~la8ak/c11.htm
Also came across a similar detector used for SSB/AM in Drake R4245
receiver (for 50kHz IF)
Have tested MC1351P, MC1496CP, S042P, TBA120 for similar applications
and reference is shown on the page.

It is somewhat frustrating to see new AM receivers presented - even
using ring mixers and smd components - but they forget about the
detector, at least they could have used a simple quadrature detector

73
Jan-Martin
LA8AK
--
Amount of SPAM is so large that MailWasher must delete 99% of the incoming mails
Cannot check every email manually. Please use intelligent title for email.
Mails without titles or using just "hi" is deleted

46. Re: Crystal Q measurement

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 22:08:34 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vvbqv928okst98@corp.supernews.com>
Source record: 29833

The W7ZOI crystal filter design and crystal measurement methods are described in detail in _Experimental Methods in RF Design_, published by the ARRL and available from numerous sources. It should be every serious experimenter's library.

Roy Lewallen, W7EL

Tom Bruhns wrote:
> If you have access to old QSTs, you should be able to find articles
> about measuring crystal parameters. Look especially for things by Wes
> Hayward, W7ZOI. There's a fairly simple crystal-tester you can build
> to measure enough parameters to extract equivalent L, Cs, Cp and R, I
> believe. I 'spose someone will pop in with a more specific reference
> for you.
>
> Cheers,
> Tom
>
> "Virgil Smith" <vsmith26@comcast.net> wrote in message
news:<3iNHb.504277$275.1417484@attbi_s53>...
>
>>I have a bunch of oddball crystals that I want to test. I know I can just
>>build up a generic oscillator to find the
>>resonant frequency, but out of curiousity I would like to
>>know the quality of the things, too.
>>
>>Anyone know of any neat ideas for measuring the Q of a
>>crystal?
>>
>>I would welcome any and all suggestions,
>>
>>-vs-

47. Re: what lead-free solder do you use, and where can I buy it?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 22:19:13 UTC
From: see_signature@airmail.net
Message-ID: <3ff5e6f7.19188215@library.airnews.net>
Source record: 29834

In my production engineering job I would routinely hold
my breath and stick my head in over the solder wave in the
wave solder machine. Large amounts of soldering fumes would
come up from that molten commercial-grade organic solder.
After pulling my head out, I'd exhale. One time I did this
maybe 20 times a day for a week in the pursuit of soldering
refinements.
Aggravated by poor sleep from a change in the work
routine, my health went down hill quickly. My ankles were
puffing up, possibly indicating the onset of liver disease.

I got the message. I stopped exposing myself to the
airborne lead and flux particles. It took several months
for the swelling of the ankles to go away.
Workers at the factory would set up muffin fans to suck
the hand-soldering fumes away from them. This is a good
idea. Otherwise, the fumes seek out the rising column of
air around one's body and are thus breathed in directly.
Also, most people lean over the work while soldering.
Doing soldering next to muffin fan and a cracked
down-wind window should readily resolve the problem for the
most cautious hobbyist solderer and family members.
Regarding someone's comment about putting solder in his
mouth: Remember the historians' speculations about the
contribution of lead wine vessels toward the fall of the
Roman empire. Also, I can taste regular spool solder. That
means I'm dissolving something from it.

Henry

>Hello everyone,
>
>My wife and I had been 'discussing' some of the effects of my hobby, such as
>the possible exposure of my 2-month old baby girl to lead vapor from
>soldering.
>I typically have been using coventional 2% silver electronics solder wire
>with
>my 12 watt pencil. I do a few connections every day, but my wife wants to
>take absolutely no chances, and on reflection, I don't really want to
>either.
>
>I'd like to know if here is anyone in the homebrew community who uses
>lead-free solder for fine electronics work, what brands or compositions they
>recommend, and where such can be obtained retail for a reasonable cost.
>

>Oh, yes, and can someone lend me a yard of it until I can afford my own
>large spool?
>
>Thanks in advance,
>
>The Eternal Squire
>
>
>
>
>---
>Outgoing mail is certified Virus Free.
>Checked by AVG anti-virus system (http://www.grisoft.com).
>Version: 6.0.551 / Virus Database: 343 - Release Date: 12/11/03
>

Email address: "see_signature" -> "a0015717"
Newsgroup replies may serve better the public interest.

48. Re: great way to learn microcontrollers!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-02 22:43:27 UTC
From: dplatt@radagast.org
Message-ID: <vvbt0f99vgkv4e@corp.supernews.com>
Source record: 29835

In article <3FF55C2F.BCB2D6DD@frontiernet.net>,
gwatts <gwatts@frontiernet.net> wrote:

>> Important Note:
>> The PICkit(tm) 1 FLASH Starter Kit software will not run on Windows 98
>> 1st edition. DO NOT INSTALL THIS SOFTWARE ON WINDOWS 98 1ST EDITION
>
>The Zilog documentation says pretty much the same thing.

I'd guess the Zilog kit, like the PICkit, uses a USB interface. No
support in Win98 1st edition as released (although I believe that one
can install an aftermarket USB support package).

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

49. Re: what lead-free solder do you use, and where can I buy it?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 00:10:11 UTC
From: jgboyles@aol.com
Message-ID: <20040102191011.09599.00001940@mb-m17.aol.com>
Source record: 29836

Henry wrote:
> In my production engineering job I would routinely hold
>my breath and stick my head in over the solder wave in the
>wave solder machine.

Hi Henry, that was not the best idea in the world, but I have been soldering for over 40 years, and have never experienced any health symptoms like you describe. I solder a lot, both at work and at home as a ham. I'm 57 and never had health problems. I think you should look for other sources for your apparent health problems.
As has been stated, the fumes are from the flux, and I have inhaled a bunch of it:-). The lead portion can only hurt you if it is ingested, not sniffed. I am sorry you had health problems, but it may not be for the reason you think.
73 Gary N4AST

50. Re: transmitter question - its a dousy

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 00:11:52 UTC
From: Dan Andersson <dan@hecate.andersson.co.uk>
Message-ID: <pan.2004.01.03.00.11.50.578512@hecate.andersson.co.uk>
Source record: 29837

On Tue, 09 Dec 2003 10:51:45 +1100, duckman wrote:

> Had a question for open discussion
>
> Is there available, can it be done to have an AM and/ and or FM transmitter
> that will broadcast over the entire AM and FM broadcast band at the same
> time. Or at least multiple stations. E.G.
>
> From 88 - 108 at once or 88-98, then 98-108
> Same on AM band.
>
> It would have to be a low power to be able to be used on private property
> and limiy range to 300 mtrs
>
> Can this be done, where can l buy it, or how do l make it
>
> Told you it was a dousy of a question, whats your thoughts.

Yes there are such animals out on the commercial market. It's often used
for emergency radio systems in tunnels (like the Alp tunnels!) Where you
have the need to send on all frequencies if something goes awry!

Mostly on the AM band but I think the same method is used for the FM band
as well. Ans yes, they use only one transmitter!

The basic principle is to take all available channels, 25 or 50 kc
separation. take the output
from all those channels and superimpose them on one signal carrier. The
resulting 'waveform' will then contain al channels and you just modulate
it and feed it to a broadband amplifier. For the AM broadband transmitter,
this is done by sampling the resulting signal and store it on an eprom
and use that as the input to generate a multifrequency signal.

Remember the old G3RUH modulation for 9600 baud, where its many
frequencies put together to generate the composite signal, which can be
taken apart by a receiver again.

Cheers

Sorry if this sounds weird, but if you wanna listen to the real case, just
drive down in the europe alp tunnels!

51. Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 00:38:57 UTC
From: Gary Morton <gary@alma.demon.co.uk>
Message-ID: <BaoJb.5320$qA5.52892911@news-text.cableinet.net>
Source record: 29838

Over the Xmas break I constructed a simple 2 transistor QRP transmitter using the Tuna Tin II design.

Using a power meter and a 50 ohm dummy load it appears to show around 200mW, a little less than the article suggested. Then again I had substituted the final stage 2N2222 transistor for a beefier (size wise) BFY51. I'm not too sure what exact difference this will make.

In the article it says that the 200 ohm output impedance of the final stage is transformed down to around 50 ohm (using a 2:1 turns ratio untuned transformer wound on a toroid).

I have added a 7th order low pass filter to reduce the harmonics.

I am interested in verifying the output impedance.

If I understand the theory, when the output is terminated with a resistor which matches the output impedance then the power transferred to the load will be maximised.

I set about loading the output will a series of resistors and measuring the peak to peak voltage across them in order to calculate the r.m.s. voltage and hence the power dissapation.

Resistors of value less than 10 ohm gave strange results.

load r.m.s. power (V*V/R)
voltage

10 1.272 0.162
15 1.767 0.208
27 3.005 0.334
33 3.253 0.321
39 3.676 0.346
47 4.066 0.352
56 4.384 0.343
68 4.666 0.320
100 5.303 0.281

The numbers work reasonably well and point towards 50 ohms-ish.

The power value looks too high - so I might have made a mis-calculation somewhere!

Can anyone pass comments on the above?

I'm interested in where the 200 ohm figure comes from.

Any suggestions as to other methods of measuring the output impedance?

regards...

--Gary (M1GRY)

52. Drake R-4C and SB-620 scanalyzer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 01:15:18 UTC
From: LA8AK@online.no
Message-ID: <3ff61721.30828788@news.online.no>
Source record: 29839

curious to know if anybody had success with scanalyzer on R-4C, I
never succeeded and eventually measured the VFO signals into the IF, a
rather high level explained why the demand for mixer in the scanalyzer
was much more than an SBL-1 could do,
see the measurements on http://home.online.no/~la8ak/b33.htm

73
Jan-Martin
LA8AK
--
Amount of SPAM is so large that MailWasher must delete 99% of the incoming mails
Cannot check every email manually. Please use intelligent title for email.
Mails without titles or using just "hi" is deleted

53. P-Touch Labeler?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 01:48:05 UTC
From: Rob Mills <robmills@cox.net>
Message-ID: <rapJb.48663$PK3.33541@okepread01>
Source record: 29840

Has anyone used a Brother P-Touch labeler with the 1/4 in clear tape with the black lettering to letter home brew projects? Seems to me that it would be easier than press on lettering. RM~

54. Re: Who makes the best solder braid?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 02:15:04 UTC
From: Mike Burch <mburch46@mchsi.com>
Message-ID: <IApJb.719674$HS4.5238998@attbi_s01>
Source record: 29841

My suggestion... Keep an eye on ebay for a resonably priced
desoldering station. They come up all the time.

55. Re: what lead-free solder do you use, and where can I buy it?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 02:16:35 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <3FF625F7.4EFE84EA@earthlink.net>
Source record: 29842

Henry Gardiner wrote:
>
> In my production engineering job I would routinely hold
> my breath and stick my head in over the solder wave in the
> wave solder machine. Large amounts of soldering fumes would
> come up from that molten commercial-grade organic solder.
> After pulling my head out, I'd exhale. One time I did this
> maybe 20 times a day for a week in the pursuit of soldering
> refinements.
> Aggravated by poor sleep from a change in the work
> routine, my health went down hill quickly. My ankles were
> puffing up, possibly indicating the onset of liver disease.
>
> I got the message. I stopped exposing myself to the
> airborne lead and flux particles. It took several months
> for the swelling of the ankles to go away.
> Workers at the factory would set up muffin fans to suck
> the hand-soldering fumes away from them. This is a good
> idea. Otherwise, the fumes seek out the rising column of
> air around one's body and are thus breathed in directly.
> Also, most people lean over the work while soldering.
> Doing soldering next to muffin fan and a cracked
> down-wind window should readily resolve the problem for the
> most cautious hobbyist solderer and family members.
> Regarding someone's comment about putting solder in his
> mouth: Remember the historians' speculations about the
> contribution of lead wine vessels toward the fall of the
> Roman empire. Also, I can taste regular spool solder. That
> means I'm dissolving something from it.
>
> Henry

Did you have high levels of lead in your blood? The place I worked
sent the assemblers for routine blood tests, and never found anything.
We didn't have a wave solder machine, but we did have three reflow ovens
that were vented through the roof.

--
We now return you to our normally scheduled programming.

Michael A. Terrell
Central Florida

56. Re: P-Touch Labeler?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 02:26:35 UTC
From: "Gary S." <Idontwantspam@net>
Message-ID: <50acvv44f4mjeftea8v1mdhua81t8ae4oh@4ax.com>
Source record: 29843

On Fri, 2 Jan 2004 19:48:05 -0600, "Rob Mills" <robmills@cox.net>
wrote:

>Has anyone used a Brother P-Touch labeler with the 1/4 in clear tape with
>the black lettering to letter home brew projects? Seems to me that it would
>be easier than press on lettering. RM~
>
We had one where I used to work. Looks much neater, and is much
faster.

The one that hooks up to a PC is really nice.

Happy trails,
Gary (net.yogi.bear)
---
at the 51st percentile of ursine intelligence

Gary D. Schwartz, Needham, MA, USA
Please reply to: garyDOTschwartzATpoboxDOTcom

57. Re: P-Touch Labeler?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 02:43:41 UTC
From: Rob Mills <robmills@cox.net>
Message-ID: <A_pJb.48674$PK3.39143@okepread01>
Source record: 29844

"Gary S." <Idontwantspam@net> wrote in message
news:50acvv44f4mjeftea8v1mdhua81t8ae4oh@4ax.com...

>> The one that hooks up to a PC is really nice.<<

That's the one (2300) I just bought from Office Max (on sale /$79) but
haven't done anything with it yet. I wish they had the 1/4 in clear tape
with white letters, seems like it would be great for panels but guess black
will have to do. RM~

58. FA: Neat Items For Sale

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 03:04:05 UTC
From: Norm VE3CZI <ve3czi@arrl.net>
Message-ID: <QpqJb.30013$mH2.22939@read1.cgocable.net>
Source record: 29845
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.swap

MOTOROLA TRANSMITTER RF ATTENUATOR
http://cgi.ebay.ca/ws/eBayISAPI.dll?ViewItem&item=3068798154&category=4671&rd=1

MOTOROLA TEST SET METER SWITCH & PLUG
http://cgi.ebay.ca/ws/eBayISAPI.dll?ViewItem&item=3068803216&category=4671&rd=1

ANDREW 1/2" HELIAX GROUNDING KIT #241088-1
http://cgi.ebay.ca/ws/eBayISAPI.dll?ViewItem&item=3068809990&category=4671&rd=1

TELEWAVE TWL-50-N Load Termination
http://cgi.ebay.ca/ws/eBayISAPI.dll?ViewItem&item=3068843673&category=4671&rd=1

Ferritronics FT-128 Tunable CTCSS Unit
http://cgi.ebay.ca/ws/eBayISAPI.dll?ViewItem&item=2584910524&category=43010&rd=1

16 Button Touch Tone Style Keypad
http://cgi.ebay.ca/ws/eBayISAPI.dll?ViewItem&item=3068792561&category=4671&rd=1

Thanks for Looking....Norm VE3CZI

59. Re: Were IC's ever etensively employed in AM/FM RX homebrew projects?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 03:31:48 UTC
From: mcalhoun@ksu.edu
Message-ID: <bt5d34$qeq@unix2.cc.ksu.edu>
Source record: 29846

>The "Guru of Advanced Thinking About Advanced Radios" of Rockwell-Collins
>gave an interesting talk .... One point he made was that (even) Collins
>had to buy enough chips for their complete expected production run, and
>eventual spare parts, right at the design-in stage. Otherwise either -
>1) The part would be unavailable before the production run was completed, or
>2) A part with the same number would be available, but it would be enough
> different that it would either not work or would degrade performance.

How true, how true!

I worked at Fairchild Semiconductor's Research and Development Lab from
1967-71, where we designed and built SYMBOL, a computer with a radically-
different architecture (OS, compiler, editor, etc., were all in HARDware
[and I do NOT mean ROM'd firmware; just lots and lots of gates and flip-
flops]). When we began actual construction, we tried to stockpile --
from Fairchild Semi's production line -- enough of every IC type we
thought we'd need, but we ran short by about 100 flipflops, so we got
three more "tubes" from Production.

It is safe to say that those hundred FF's caused us MORE TROUBLE than
the other 4,000 FF's: after two years of production, those later FF's
had so much FASTER "setup" time that our design rules failed when we
put those FF's and earlier ones on the same printed circuit board!

--Myron.
--
Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge
PhD EE (retired). "Barbershop" tenor. CDL(PTXS). W0PBV. (785) 539-4448
NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle, Pistol)

60. Re: how to sharpen mini dike cutters, nipper cutters?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 03:40:14 UTC
From: mcalhoun@ksu.edu
Message-ID: <bt5diu$qgu@unix2.cc.ksu.edu>
Source record: 29747
Cross-posted to: rec.crafts.metalworking,rec.radio.amateur.homebrew,sci.electronics.repair,sci.physics,sci.engr.manufacturing

>>how to sharpen mini dike cutters and nipper cutters ....

>.... Biggest problem is with people that try to cut hard stuff (nick
>the blades) or ....

Reminds me of a "Scratchi" article in an early ham magazine: a true
"HAM" (Hardly Any Money?), he made solder by melting lead and pouring
it into spaghetti and then tried to cut it with a pair of "dikes". I
still remember the final line of the story:

"Anybody want to buy a pair of badly-nicked sidecutters?"

--Myron.

P.S.: Please, no flames about Scratchi. Even though such stories aren't
"politically correct" these days, the anecdote in the above story
was timeless!
--
Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge
PhD EE (retired). "Barbershop" tenor. CDL(PTXS). W0PBV. (785) 539-4448
NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle, Pistol)

61. Re: Transmitter tuning, antenna, etc

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 06:16:14 UTC
From: Circuit Breaker </dev/null@127.0.0.1>
Message-ID: <pan.2004.01.03.06.16.12.932397@bellsouth.net>
Source record: 29748

Circuit Breaker wrote:

> Thanks for the help, Joe - I'll let you know how it goes when I get the
> chance. Right now my father's needing my help loading a trailer with

Well, I got the chance.

Worked marvellously. I now have that same 1300 foot range I had before.

Yeah, big deal, I know, but this is big for me - first "properly working", tunable, hard-soldered FM transmitter for me that can go farther than my bathroom.

Only problem now is getting rid of the 60-cycle hum from my homebrew power supply. Should be simple enough, and today I added the missing .1 uF electrolytic capacitor to the power terminals (was missing, don't know why I never put it in before). Still have the hum though. That's okay, this problem should be very well documented in the ARRL handbook. I'll go consult it.

I plan to revamp my cheesy little freewebs website - I'll be posting the schematics of things I built and found to be useful. This transmitter will definitely be among them.

73, de KE4EDD
--

```
__ ____
/ _| | _ \ Unregistered Linux User #18,000,002
| |__ | _ \
\__/ |___/ Learning is the ONLY substitution for EDUCATION!
```

62. VOX on TS-140

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 12:13:33 UTC
From: fazamy@aol.com
Message-ID: <20040103071333.16065.00001339@mb-m22.aol.com>
Source record: 29749

There's a vox jack on the back of the TS-140.
Is there a vox circuit in that tcvr? If so, what do I have to do to get it working?
If not so, what can I do to get one rigged up?
I want to do hands free ssb.
Thanks
KB2AMY
Evan

63. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 13:18:33 UTC
From: Richard Hosking <richardh@iinet.net.au>
Message-ID: <3ff6c1d7$0$1721$5a62ac22@freenews.iinet.net.au>
Source record: 29750

As I understand it the output impedance approximates to Vcc*Vcc/Po, where Po is output power and Vcc is the supply voltage
It looks like your measurements point to 50 ohms as about right. How were you measuring the voltage? - this might affect the measurement

Richard

Gary Morton <gary@alma.demon.co.uk> wrote in message news:BaoJb.5320$qA5.52892911@news-text.cableinet.net...
> Over the Xmas break I constructed a simple 2 transistor QRP transmitter using
> the Tuna Tin II design.
>
> Using a power meter and a 50 ohm dummy load it appears to show around 200mW, a
> little less than the article suggested. Then again I had substituted the final
> stage 2N2222 transistor for a beefier (size wise) BFY51. I'm not too sure
> what exact difference this will make.
>
> In the article it says that the 200 ohm output impedance of the final stage is
> transformed down to around 50 ohm (using a 2:1 turns ratio untuned
> transformer wound on a toroid).
>
> I have added a 7th order low pass filter to reduce the harmonics.
>
> I am interested in verifying the output impedance.
>
> If I understand the theory, when the output is terminated with a resistor
> which matches the output impedance then the power transferred to the load will
> be maximised.
>
> I set about loading the output will a series of resistors and measuring the
> peak to peak voltage across them in order to calculate the r.m.s. voltage and
> hence the power dissapation.
>
> Resistors of value less than 10 ohm gave strange results.
>
> load r.m.s. power (V*V/R)
> voltage

>
> 10 1.272 0.162
> 15 1.767 0.208
> 27 3.005 0.334
> 33 3.253 0.321
> 39 3.676 0.346
> 47 4.066 0.352
> 56 4.384 0.343
> 68 4.666 0.320
> 100 5.303 0.281
>
> The numbers work reasonably well and point towards 50 ohms-ish.
>
> The power value looks too high - so I might have made a mis-calculation
somewhere!
>
> Can anyone pass comments on the above?
>
> I'm interested in where the 200 ohm figure comes from.
>
> Any suggestions as to other methods of measuring the output impedance?
>
> regards...
>
> --Gary (M1GRY)
>

64. Re: Transmitter tuning, antenna, etc

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 13:41:11 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <oigdvv8lmn3i66gg1tkfjiv10u19l8f407@4ax.com>
Source record: 29751

On Sat, 03 Jan 2004 01:16:14 -0500, Circuit Breaker
</dev/null@127.0.0.1> wrote:

>Circuit Breaker wrote:
>
>> Thanks for the help, Joe - I'll let you know how it goes when I get the
>> chance. Right now my father's needing my help loading a trailer with
>
>Well, I got the chance.
>
>Worked marvellously. I now have that same 1300 foot range I had before.
>
>Yeah, big deal, I know, but this is big for me - first "properly working",
>tunable, hard-soldered FM transmitter for me that can go farther than my
>bathroom.
>
>Only problem now is getting rid of the 60-cycle hum from my homebrew power
>supply. Should be simple enough, and today I added the missing .1 uF
>electrolytic capacitor to the power terminals (was missing, don't know why
>I never put it in before). Still have the hum though.

Not surprising. You want something *much* higher in value (a couple of
thousand uF).
--

"I expect history will be kind to me, since I intend to write it."
- Winston Churchill

65. Re: VOX on TS-140

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 13:49:25 UTC
From: "Dee D. Flint" <deehays@qix.net>
Message-ID: <FLzJb.20344$P%1.19373873@newssvr28.news.prodigy.com>
Source record: 29752

"FAZAMY" <fazamy@aol.com> wrote in message
news:20040103071333.16065.00001339@mb-m22.aol.com...
> There's a vox jack on the back of the TS-140.
> Is there a vox circuit in that tcvr? If so, what do I have to do to get
it
> working?
> If not so, what can I do to get one rigged up?
> I want to do hands free ssb.
> Thanks
> KB2AMY
> Evan
>

Track down a manual as this will tell you what you need to know to hook it up, adjust it, and use it. For manuals, try Manualman or W7FG. They make good quality reproductions of vintage manuals.

Dee D. Flint, N8UZE

66. Re: Building Recommentations... Lots of em ;-)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 13:54:14 UTC
From: Vaughn Combs <n2bha@arrl.net>
Message-ID: <aQzJb.1981$Dq1.1792@twister.nyroc.rr.com>
Source record: 29753

Thanks so much for your kind response Greg! I have read the links that you provided and the "some" of the links that they contained. All of the information that you provided will be of great help.

Many Thanks and 73,
Vaughn

"G.Beat" <now9spamgb@spam.comcast.net> wrote in message news:se5Jb.254718$_M.1167895@attbi_s54...
> "Vaughn Combs" <n2bha@arrl.net> wrote in message
> news:o7YIb.99971$JW3.87288@twister.nyroc.rr.com...
> > Greetings,
> >
> > I figures that this would be the BEST group to ask these questions. I
am
> > getting back into building after quite a while. I am putting in a
section
> in
> > the attic shack for testing and fabrication and have am starting to
equip
> > things. I already have some relatively good test gear, Tektronics 475A,
> > DM44, sig generator, etc. but want to set up for fabrication. I have
been
> > wondering what most of you find as indispensible on your benches. I
really
> > want a PCB vise/holder that would aid in the fabrication process.
> >
> > If any of you do your own design/fab of PCBs I would also be very
> interested
> > in what you find are the best tools/techniques. If you are using
software
> to
> > go from circuits to black PCB mask I am VERY interested in this
> > (freeware/shareware is best). I have been reading some of the sites but
I
> am
> > most interested in what you as experienced homebrewers like the MOST.
> >
> > I have done some kit building and fab long ago but I have been out of it
> for
> > quite some time. I have ordered an elecraft K1 to get my soldering back
> into
> > shape ;-)
> >
> > Many Thanks and 73,

> > Vaughn
>
> Vaughn -
>
> I have been very happy with the PanaVise products for vises and PC board
> holders.
>
> I have use the Weller "TCP" series and "EC" series soldering stations for
> almost all of my kits since 1975.
>
> Starting places:
> http://www.amasci.com/amateur/elehob.html
>
> http://www.rac.ca/opsinfo/infobuild.htm
>
> http://www.mtechnologies.com/building/atoz.htm
>
> http://ww2.netnitco.net/users/wt9w/kit%20building.html
>
> Greg
> w9gb
>
>

67. Re: VOX on TS-140

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 14:41:38 UTC
From: Doug Smith W9WI <w9wi@invalid.invalid>
Message-ID: <3FF6D4A1.9050206@invalid.invalid>
Source record: 29754

FAZAMY wrote:
> There's a vox jack on the back of the TS-140.
> Is there a vox circuit in that tcvr? If so, what do I have to do to get it
> working?
> If not so, what can I do to get one rigged up?
> I want to do hands free ssb.

IMHO... a footswitch is a much better way to do hands-free SSB.
--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com

68. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 15:12:25 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <06mdvv0fuctvs5r0rm1str36pb2ef5r5eh@4ax.com>
Source record: 29755

On Sat, 3 Jan 2004 21:18:33 +0800, "Richard Hosking"
<richardh@iinet.net.au> wrote:

>As I understand it the output impedance approximates to Vcc*Vcc/Po, where Po
>is output power and Vcc is the supply voltage

I'd be interested to see the derivation of this.

>It looks like your measurements point to 50 ohms as about right. How were
>you measuring the voltage? - this might affect the measurement

I did the same thing (using different resistor values and then
calculating by V^2/R like the OP has done. It worked for me. The Zout
of my particular design was 140 ohms, though - just right for a folded
dipole. I used 2n3904 transistors; they appear to give a better gain
than 2n2222s.
--

"I expect history will be kind to me, since I intend to write it."
- Winston Churchill

69. Re: VOX on TS-140

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 17:34:19 UTC
From: John Siegel <JohnASiegel@worldnet.att.net>
Message-ID: <3FF6FD19.7020508@worldnet.att.net>
Source record: 29756

As I recall, based on owning the TS680S some years back, the 140 does indeed have VOX. The 680 did not since it replaced the switch to use VOX mode with the preamp switch.
I think that the VOX mode switch is one of the small controls at the lower left of the front panel. The standard VOX controls (not jack) for gain, anti-VOX and delay should be on the back panel.
73, John

FAZAMY wrote:
> There's a vox jack on the back of the TS-140.
> Is there a vox circuit in that tcvr? If so, what do I have to do to get it
> working?
> If not so, what can I do to get one rigged up?
> I want to do hands free ssb.
> Thanks
> KB2AMY
> Evan
>

70. MIXW SOFTWARE

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 18:17:41 UTC
From: Dave <g3vfp@blueyonder.co.uk>
Message-ID: <9HDJb.5280$Od5.5185@news-binary.blueyonder.co.uk>
Source record: 29757

Hi guys,

If you are interested in a software which has more modes than you know what to do with, including Packet by the way, try out MixW by UT2UZ is really is excellent, and most modes are great for QRP.

The latest version 2.10 is on my web download page, and the help group is at Yahoo.

www.g3vfp.org/download.html

http://groups.yahoo.com/mixw

Lots of other softwares for radio use on my download page too.

Cheers,

Dave G3VFP.

71. Best antenna (preferrably wire)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 18:38:59 UTC
From: Vaughn Combs <n2bha@arrl.net>
Message-ID: <7%DJb.45623$q55.17003@twister.nyroc.rr.com>
Source record: 29758
Cross-posted to: rec.radio.amateur.antenna,alt.radio.amateur,rec.radio.amateur.homebrew,rec.radio.amateur.misc

I have a few questions and I thought that this may be the group that could help. I have a nice sized backyard and would like to construct an antenna that would give me good performance on 80-10m bands.

The convenient dimensions would put a support (far end) at either 92 feet from the back of the house (support exists that is about 15-20 feet up) or 120 feet from the back of the house (mast anchored to the other side of a shed could easily be installed. Or a more inconvenient support could be erected up to 300 feet out (no support buildings) at the absolute far end of the property. The width of the property as seen looking out the back window is about 65 feet (no supports existing on either side).

Special circumstances and constraints:

-- No tall trees on the property.

-- Attic shack (attic window is probably about 25 feet up). Need to keep to the attic.

-- Cable run from back of house to operating position within the attic would be approximately 25 feet

-- MUST eliminate RFI in the shack and house.

My current setup is an end-fed longwire that works well on all bands except 40m (rig shuts down as I am dipping the SWR to almost 1:1 ;-). I threw up the wire as winter was upon me. I have been off the air for almost 10 years and REALLY wanted to get on the air again.

While the longwire is performing quite well with the exception of 40m I am getting a ton of RF in the shack and it is blanking out TVs and creating loud humming in speakers with 100W from the XMTR. I realize that this is most likely due to the fact that I have inefficient RF ground and I have cut and run radial at 1/4 wave for each band and ran them under the eaves up here in the attic. This has not solved the problem. I am friendly with all of my neighbors and have visited them and did testing on the bands with them on the phone. They are not experiencing any problems. My wife, while understanding, would REALLY like the problem to go away ;-)

My main goal is to build an antenna that will solve the aforementioned RFI problem and that will provide good performance given my constraints.

Any ideas would be GREATLY appreciated.

Many Thanks and 73,
Vaughn
N2BHA

72. Vintage pc/radio bits FS

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 19:08:22 UTC
From: G4BXD@qsl.net
Message-ID: <3ff6b79a.677484@news.compuserve.com>
Source record: 29759

Vintage pc/radio bits FS

Airlite 62 headphones with standard 1/4 inch jack. £5.

Nascom 3 vintage pc includes upc board, mem board, psu unit. £15

Car Stereo.. Peugeot VAR9318.. very nice condx.. £10

Vintage Radiomobile model 1170 car radio, LW/MW, £15

Transmitter SR, 5 channel VHF set, in very good condx, rare
item..... £30

Panel meters, Air Ministry, NOS, 5 mA, 2 and a quater square
fronts with 2 inch body. Very nice condx,.... 1.50 each or 10 for 10
Pound, plus pp

contact me direct on: G4BXD@compuserve.com
no discussion entered into via this site

73. Re: Best antenna (preferrably wire)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 19:30:13 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <n95evvsf1lv8ogao5rrcnrq2fn7t1gb7ce@4ax.com>
Source record: 29760
Cross-posted to: rec.radio.amateur.antenna,alt.radio.amateur,rec.radio.amateur.homebrew,rec.radio.amateur.misc

On Sat, 03 Jan 2004 18:38:59 GMT, "Vaughn Combs" <n2bha@arrl.net>
wrote:

>I have a few questions and I thought that this may be the group that could
>help. I have a nice sized backyard and would like to construct an antenna
>that would give me good performance on 80-10m bands.
>
>The convenient dimensions would put a support (far end) at either 92 feet
>from the back of the house (support exists that is about 15-20 feet up) or
>120 feet from the back of the house (mast anchored to the other side of a
>shed could easily be installed. Or a more inconvenient support could be
>erected up to 300 feet out (no support buildings) at the absolute far end of
>the property. The width of the property as seen looking out the back window
>is about 65 feet (no supports existing on either side).
>
>Special circumstances and constraints:
>
>-- No tall trees on the property.
>
>-- Attic shack (attic window is probably about 25 feet up). Need to keep to
>the attic.
>
>-- Cable run from back of house to operating position within the attic would
>be approximately 25 feet
>
>-- MUST eliminate RFI in the shack and house.
>
>My current setup is an end-fed longwire that works well on all bands except
>40m (rig shuts down as I am dipping the SWR to almost 1:1 ;-). I threw up
>the wire as winter was upon me. I have been off the air for almost 10 years
>and REALLY wanted to get on the air again.
>
>While the longwire is performing quite well with the exception of 40m I am
>getting a ton of RF in the shack and it is blanking out TVs and creating
>loud humming in speakers with 100W from the XMTR. I realize that this is
>most likely due to the fact that I have inefficient RF ground and I have cut
>and run radial at 1/4 wave for each band and ran them under the eaves up
>here in the attic. This has not solved the problem. I am friendly with all
>of my neighbors and have visited them and did testing on the bands with them
>on the phone. They are not experiencing any problems. My wife, while
>understanding, would REALLY like the problem to go away ;-)
>
>My main goal is to build an antenna that will solve the aforementioned RFI

>problem and that will provide good performance given my constraints.
>
>Any ideas would be GREATLY appreciated.
>
>Many Thanks and 73,
>Vaughn
>N2BHA
>

Hi Vaughn,

Your first shot is probably your best shot. You should drop a line from the near end antenna anchor point directly down to a ground and rely on a tuner to make up the differences. From the anchor point (where both wires are broke out) install a 1:1 Current Balun (Choke) between these points and the transmission line back to your rig to eliminate some of your noise into the house, and to get rid of the 40M instability (a classic symptom of Common Mode whose cure is in the Choke). The "ground" lead will radiate, but that is inconsequential. You may also experience a ground loop with it in parallel to your rig's source of ground.

This is the blind-side of many hams who forget that long ground wires have impedance and thus become miserable grounds for RF. Unless you work battery operation without a floating charger, you WILL have this second path to ground (the 'trons will find their own way, even if it isn't obvious to you). I always run battery with a float charger through an 1:1 isolation transformer to kill Mains borne noise; and whenever I experience ground loops, I simply disconnect the charger.

73's
Richard Clark, KB7QHC

74. Re: Best antenna (preferrably wire)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 19:41:31 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.ONEDOT.org>
Message-ID: <3ff71b75_6@corp.newsgroups.com>
Source record: 29761
Cross-posted to: rec.radio.amateur.antenna,alt.radio.amateur,rec.radio.amateur.homebrew,rec.radio.amateur.misc

Vaughn Combs wrote:
> Any ideas would be GREATLY appreciated.

To effectively avoid RF in the shack, the differential currents need
to be balanced (equal in magnitude and 180 degrees out of phase). It
is extremely difficult to do that with an inv-L. I had good luck with
a dipole even though the shack was under one end of the dipole. I
brought the ladder-line off at right angles for about 50 ft then
routed ladder-line back to the shack from there so ladder-line
parallel to the antenna was always about 50 ft away from the antenna.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

75. Re: Best antenna (preferrably wire)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 22:11:39 UTC
From: Vaughn Combs <n2bha@arrl.net>
Message-ID: <v6HJb.2096$Dq1.1671@twister.nyroc.rr.com>
Source record: 29762
Cross-posted to: rec.radio.amateur.antenna,alt.radio.amateur,rec.radio.amateur.homebrew,rec.radio.amateur.misc

Hi Richard,

If this helps both my XYL and I will be in your debt ;-)

So I should solder a shielded copper wire to the near end (aka the feed point but on the other side of the insulator --- near the house), let it run down the side of the house (about 22 to 25 feet down) and then to a ground rod? Then connect both the wire from the point where the new ground wire attaches and the wire (formerly the feedline) that connects to the "long" wire to the balun. Then its on into the house and the tuner via RG-8. Correct?

What do I connect to the ground lugs on the tuner and rig? The inefficient RF ground wire that I have now? That wire currently goes to a ground strip that has 1/4 wave length radials that were cut for each band running through the attic and an additional wire that is attached to a pipe that I found in the attic that is a plumbing drain pipe vent.

BTW, would there be any advantage to using other than 1:1 for the current balun? Any recommendations for the balun? I have seen some that can be made simply from coax.

I hope that I am not being a pain but this RFI prob is a bugger and it would be REALLY nice to squash this one. It is bugging the XYL quite a bit and it limits my operating time ;-)

Also, the ground loop that you are referring to would be current in the shield (or in my case the outer skin of the copper wire ;-) coming through the feed line and into the equipment. From there it is possibly getting into electrical ground through the power supply?

Again, Many thanks for your help and 73,

Vaughn, N2BHA

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:n95evvsf1lv8ogao5rrcnrq2fn7t1gb7ce@4ax.com...
> On Sat, 03 Jan 2004 18:38:59 GMT, "Vaughn Combs" <n2bha@arrl.net>
> wrote:
>
> >I have a few questions and I thought that this may be the group that
could
> >help. I have a nice sized backyard and would like to construct an antenna
> >that would give me good performance on 80-10m bands.
> >
> >The convenient dimensions would put a support (far end) at either 92 feet

> >from the back of the house (support exists that is about 15-20 feet up)
or
> >120 feet from the back of the house (mast anchored to the other side of a
> >shed could easily be installed. Or a more inconvenient support could be
> >erected up to 300 feet out (no support buildings) at the absolute far end
of
> >the property. The width of the property as seen looking out the back
window
> >is about 65 feet (no supports existing on either side).
> >
> >Special circumstances and constraints:
> >
> >-- No tall trees on the property.
> >
> >-- Attic shack (attic window is probably about 25 feet up). Need to keep
to
> >the attic.
> >
> >-- Cable run from back of house to operating position within the attic
would
> >be approximately 25 feet
> >
> >-- MUST eliminate RFI in the shack and house.
> >
> >My current setup is an end-fed longwire that works well on all bands
except
> >40m (rig shuts down as I am dipping the SWR to almost 1:1 ;-). I threw
up
> >the wire as winter was upon me. I have been off the air for almost 10
years
> >and REALLY wanted to get on the air again.
> >
> >While the longwire is performing quite well with the exception of 40m I
am
> >getting a ton of RF in the shack and it is blanking out TVs and creating
> >loud humming in speakers with 100W from the XMTR. I realize that this is
> >most likely due to the fact that I have inefficient RF ground and I have
cut
> >and run radial at 1/4 wave for each band and ran them under the eaves up
> >here in the attic. This has not solved the problem. I am friendly with
all
> >of my neighbors and have visited them and did testing on the bands with
them
> >on the phone. They are not experiencing any problems. My wife, while
> >understanding, would REALLY like the problem to go away ;-)
> >
> >My main goal is to build an antenna that will solve the aforementioned
RFI
> >problem and that will provide good performance given my constraints.
> >

> >Any ideas would be GREATLY appreciated.
> >
> >Many Thanks and 73,
> >Vaughn
> >N2BHA
> >
>
> Hi Vaughn,
>
> Your first shot is probably your best shot. You should drop a line
> from the near end antenna anchor point directly down to a ground and
> rely on a tuner to make up the differences. From the anchor point
> (where both wires are broke out) install a 1:1 Current Balun (Choke)
> between these points and the transmission line back to your rig to
> eliminate some of your noise into the house, and to get rid of the 40M
> instability (a classic symptom of Common Mode whose cure is in the
> Choke). The "ground" lead will radiate, but that is inconsequential.
> You may also experience a ground loop with it in parallel to your
> rig's source of ground.
>
> This is the blind-side of many hams who forget that long ground wires
> have impedance and thus become miserable grounds for RF. Unless you
> work battery operation without a floating charger, you WILL have this
> second path to ground (the 'trons will find their own way, even if it
> isn't obvious to you). I always run battery with a float charger
> through an 1:1 isolation transformer to kill Mains borne noise; and
> whenever I experience ground loops, I simply disconnect the charger.
>
> 73's
> Richard Clark, KB7QHC

76. Re: Best antenna (preferrably wire)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-03 23:28:26 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <dchevvgqm05smp670v30vke17g20m8b3ld@4ax.com>
Source record: 29763
Cross-posted to: rec.radio.amateur.antenna,alt.radio.amateur,rec.radio.amateur.homebrew,rec.radio.amateur.misc

On Sat, 03 Jan 2004 22:11:39 GMT, "Vaughn Combs" <n2bha@arrl.net>
wrote:

>Hi Richard,
>
>If this helps both my XYL and I will be in your debt ;-)

It comes with the usual expectation of your first born....
>
>So I should solder a shielded copper wire to the near end (aka the feed
>point but on the other side of the insulator --- near the house), let it run
>down the side of the house (about 22 to 25 feet down) and then to a ground
>rod? Then connect both the wire from the point where the new ground wire
>attaches and the wire (formerly the feedline) that connects to the "long"
>wire to the balun. Then its on into the house and the tuner via RG-8.
>Correct?

Yup. That is what I was describing, but it could work dangling (with
a sealed, insulated end that is mechanically tied down; however, this
is not anymore efficient as the floating wires along your rafters,
merely different).

View with fixed font:
BalUn longwire
rig --- tuner ant ---OOOOO-----------------------------
rig --- tuner gnd ---OOOOO-+
| |
| | drop
| |
----- -----
--- ---
- -

Ground loop issues arise due to there being two paths with a
significant distance (in wavelength) between them (from the +
down, through ground, and back up to the rig) and an impedance between
(the BalUn which serves this purpose by design). This usually comes
about when the ham shack is elevated, and still has some form of
ground return that is an appreciable distance (in wavelength,
basically more than 0.1 wavelength) from true ground.

The rig ground may be deliberate, or it may be passive through metal
connections and continuity with the power supply which in turn
inherits it from the wall socket. Even if there is no safety ground
from the wall socket, there is still a capacitive coupling in the

wiring to fulfill the mission (and 40/80M probably plays hell with the
VCR).
>
>What do I connect to the ground lugs on the tuner and rig? The inefficient
>RF ground wire that I have now? That wire currently goes to a ground strip
>that has 1/4 wave length radials that were cut for each band running through
>the attic and an additional wire that is attached to a pipe that I found in
>the attic that is a plumbing drain pipe vent.

This may still be a viable option. Don't discard anything, simply
isolate one or all and experiment (it's the name of the game).

>
>BTW, would there be any advantage to using other than 1:1 for the current
>balun? Any recommendations for the balun? I have seen some that can be made
>simply from coax.

Simple coax chokes work just as effectively. Half a dozen to eight
turns of six to eight inch turns will be adequate for 40-15M, you may
need to experiment with a few more turns outside of this. Current
BalUns are simply Ferrite donuts put over a 1 foot length of RG-52
coax (one or a couple dozen donuts). The same thing can be achieved
with a large torus with four or five turns of coax through the center
(if its big enough). This is square law time, so four turns equals 16
donuts. Stacking two large toroids with 3 turns each would substitute
(or maybe three with three turns).

Using ferrite makes for a smaller device that works over a larger span
of frequencies, but winding air wounds can be tested immediately at no
more cost than the cable already handy.
>
>I hope that I am not being a pain but this RFI prob is a bugger and it would
>be REALLY nice to squash this one. It is bugging the XYL quite a bit and it
>limits my operating time ;-)
>
>Also, the ground loop that you are referring to would be current in the
>shield (or in my case the outer skin of the copper wire ;-) coming through
>the feed line and into the equipment. From there it is possibly getting into
>electrical ground through the power supply?
>
>Again, Many thanks for your help and 73,
>
>Vaughn, N2BHA
>
Hi Vaughn,

I've described the ground loop above. Isolating it means "busting"
ground somewhere. I use a battery. Voila! Opening any path does
just as well, but you have a dangling radiator somewhere (like the
drop). This may help, or it may change nothing. RFI problems are
unique to every situation and having your shack up high is the major
contributor, but to keep peace in the family try to limit RF exposure

to the end of the pipe (the purpose of the choke).

The choke inhibits RF from traveling back (conduction) into your shack (but your rafter mounted "radials" contribute RF exposure through radiation). You might try wrapping your power supply AC leads through a ferrite (or use a split core). This is choking your rig from going into the House AC. If you do this, take care to observe ALL connections to the rig. Do you have a packet connection to the rig from a computer? This is another path to ground, Choke it!!! Do you have a modem on the computer? Ditto. Computer Display? Ditto. A powered microphone? Ditto. The shack is a hydra of wires all heading to ground eventually and all it takes is one - and sometimes it melts.

There are three forms of power transfer: Conduction, Radiation, and Convection. Clearly convection is out as we are not heating soup. Conduction comes through wire, and radiation through the air. Your problems (as for most) usually comes by virtue of shared paths in the AC distribution and this is a conduction issue. If you move your rig's power supply to another wall socket ON A DIFFERENT BREAKER, you might solve one problem (and discover a new one). Use an extension cord (choke it) to experiment with this possibility. Having the antenna feed point close to the house brings about the possibility of radiation coupling. Move it (the choke point) away from the house. Remember this is square law time too and with each doubling, you quarter your exposure.

73's
Richard Clark, KB7QHC

77. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 00:50:52 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <vveor1mn2hi0c7@corp.supernews.com>
Source record: 29764

If you want to obtain the maximum power transfer between a generator and a load, and if all the pieces behave like ideal linear components, then you need to match the impedance of the two. But this is not what you are doing here. First, you want to obtain the maximum power out without burning up you output device, and second, a class-C output stage isn't a linear circuit!

What this means is that in general your transmitter, like your wall socket, can deliver more than it's rated power if you put the right load on it. Normally you'd expect the final amplifier to be fairly "stiff" - the output power should be inversely proportional to the resistor you put on it. Your circuit doesn't act exactly like that, even if it doesn't follow the same curve for a generator with a linear impedance. I suspect that with your circuit the 7-pole filter is evening things out quite a bit. There's also a good chance that the "strange results" you see with a load below 10 ohms are the final amplifier going unstable and oscillating, or your output transistor heating up and changing characteristics on you.

So what it boils down to is that it is very important that your output stage _sees_ the right impedance, but you shouldn't expect the output stage to _deliver_ the same impedance that it needs to see. As long as you're getting power out and your output transistor isn't letting all the smoke out then you're fine.

"Gary Morton" <gary@alma.demon.co.uk> wrote in message
news:BaoJb.5320$qA5.52892911@news-text.cableinet.net...
> Over the Xmas break I constructed a simple 2 transistor QRP transmitter
using
> the Tuna Tin II design.
>
> Using a power meter and a 50 ohm dummy load it appears to show around
200mW, a
> little less than the article suggested. Then again I had substituted the
final
> stage 2N2222 transistor for a beefier (size wise) BFY51. I'm not too
sure
> what exact difference this will make.
>
> In the article it says that the 200 ohm output impedance of the final
stage is
> transformed down to around 50 ohm (using a 2:1 turns ratio untuned
> transformer wound on a toroid).
>
> I have added a 7th order low pass filter to reduce the harmonics.
>

> I am interested in verifying the output impedance.
>
> If I understand the theory, when the output is terminated with a resistor
> which matches the output impedance then the power transferred to the load
will
> be maximised.
>
> I set about loading the output will a series of resistors and measuring
the
> peak to peak voltage across them in order to calculate the r.m.s. voltage
and
> hence the power dissapation.
>
> Resistors of value less than 10 ohm gave strange results.
>
> load r.m.s. power (V*V/R)
> voltage
>
> 10 1.272 0.162
> 15 1.767 0.208
> 27 3.005 0.334
> 33 3.253 0.321
> 39 3.676 0.346
> 47 4.066 0.352
> 56 4.384 0.343
> 68 4.666 0.320
> 100 5.303 0.281
>
> The numbers work reasonably well and point towards 50 ohms-ish.
>
> The power value looks too high - so I might have made a mis-calculation
somewhere!
>
> Can anyone pass comments on the above?
>
> I'm interested in where the 200 ohm figure comes from.
>
> Any suggestions as to other methods of measuring the output impedance?
>
> regards...
>
> --Gary (M1GRY)
>

78. Re: 12 v timer project ... need ideas!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 01:07:30 UTC
From: mzenier@eskimo.com
Message-ID: <bt9jjgvuq1@eskinews.eskimo.com>
Source record: 29771

In article <20040102082531.19854.00001454@mb-m01.aol.com>,
J999w <j999w@aol.com> wrote:
>>Some Radio Shack digital AC timers actually run from batteries - run
>>even without AC present. (hit the "manual ON" switch & listen for the
>>relay to click with the unit not plugged in to AC)
>>--
>>Doug Smith W9WI
>
>I wonder if the sales clerk would know this? (doubtful).
>
>Will check it out, thanks!

The 61-1060 wall wart type (and its more expensive 7 day big brother)
won't click, because the relay board is powered by the AC plug, but
the timer is on a seperate board with only two wires between it and
the relay board. Easily hackable, IMHO. (Replacing the click dome
pushbuttons with tact switches is recommended, too).

Mark Zenier mzenier@eskimo.com Washington State resident

79. Re: P-Touch Labeler?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 06:36:00 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <vvfd234m21ad19@corp.supernews.com>
Source record: 29765

There's an article in the December or January QST about using a laser printer to make labels. Basically you design your whole front panel and print it out on a laser-printer compatible transparancy, then stick the transparancy onto your project. If you're doing it at work and can't make sure that you'll get to the printer in time to feed it the stuff, you print it on white paper then copy it onto the transparancy.

Office supply and art stores carry the stuff, but the art stores have a better selection.

I used to work at a place that made front panels that way on short runs of commercial equipment -- you do the laser printing on one sheet, then carefully apply another clear sheet over that (and accept the rejects when you get wrinkles and bubbles). The result was not distinguishable from a professionally made label, and didn't require the $$$ for setup from the commercial label houses.

"Rob Mills" <robmills@cox.net> wrote in message
news:rapJb.48663$PK3.33541@okepread01...
> Has anyone used a Brother P-Touch labeler with the 1/4 in clear tape with
> the black lettering to letter home brew projects? Seems to me that it
would
> be easier than press on lettering. RM~
>
>

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

80. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 14:44:52 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <j58gvv48ifaid0bro7ghgub0gb5dhhfdrc@4ax.com>
Source record: 29766

On Sat, 3 Jan 2004 16:50:52 -0800, "Tim Wescott"
<tim@wescottnospamdesign.com> wrote:

>Normally you'd expect the final amplifier to be fairly "stiff" - the output
>power should be inversely proportional to the resistor you put on it.

??? Shirley, some mistake.
--

"I expect history will be kind to me, since I intend to write it."
- Winston Churchill

81. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 15:30:33 UTC
From: Gary Morton <gary@alma.demon.co.uk>
Message-ID: <tkWJb.6473$%m7.64493664@news-text.cableinet.net>
Source record: 29767

Tim Wescott wrote:

<snip>

> What this means is that in general your transmitter, like your wall socket,
> can deliver more than it's rated power if you put the right load on it.
> Normally you'd expect the final amplifier to be fairly "stiff" - the output
> power should be inversely proportional to the resistor you put on it. Your
> circuit doesn't act exactly like that, even if it doesn't follow the same
> curve for a generator with a linear impedance. I suspect that with your
> circuit the 7-pole filter is evening things out quite a bit. There's also a
> good chance that the "strange results" you see with a load below 10 ohms are
> the final amplifier going unstable and oscillating, or your output
> transistor heating up and changing characteristics on you.

Yes there were bad things going on with very low value loads, the output was collapsing and re-establishing. The srtange results may also be caused by the loads with were high wattage resistors - no idea what inductance they might have had.

> So what it boils down to is that it is very important that your output stage
> _sees_ the right impedance, but you shouldn't expect the output stage to
> _deliver_ the same impedance that it needs to see. As long as you're
> getting power out and your output transistor isn't letting all the smoke out
> then you're fine.

So perhaps the fact that the transmitter is connected to a 50 ohm load and the output transformer is 2:1 turns ratio means that the transistor is "seeing" 200 ohms?

Nevertheless I am still interested in how to verify that any circuit which I design (copy!) does have a 50 ohm output impedance. There must be some way to verify this figure.

--Gary

82. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 15:36:23 UTC
From: Gary Morton <gary@alma.demon.co.uk>
Message-ID: <XpWJb.6479$qd7.64334037@news-text.cableinet.net>
Source record: 29768

Richard Hosking wrote:

> As I understand it the output impedance approximates to Vcc*Vcc/Po, where Po
> is output power and Vcc is the supply voltage
> It looks like your measurements point to 50 ohms as about right. How were
> you measuring the voltage? - this might affect the measurement
>

Vcc * Vcc / Po = 13.8 * 13.8 / .352 = 540 ohms (for a 47 ohm load).

This value is certainly in the right ballpark.

I guess that I should also measure the current taken by the final stage and see if this ties in too.

I connected various 1/4w resistors across the output using a couple of adaptors, but being aware to keep wire lengths as short as possible. I then simply used a scope probe and scope to make the measurement. Scope probe was a standard x10 10Mohm impedance and presumably small C.

Interestingly I was surprised at the magnitude of the voltages for such a tiny power.

regards..

--Gary

83. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 15:44:04 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <3ff834c7$0$10796$cc9e4d1f@news.dial.pipex.com>
Source record: 29769

Paul Burridge wrote:
> On Sat, 3 Jan 2004 16:50:52 -0800, "Tim Wescott"
> <tim@wescottnospamdesign.com> wrote:
>
>
>>Normally you'd expect the final amplifier to be fairly "stiff" - the output
>>power should be inversely proportional to the resistor you put on it.
>
>
> ??? Shirley, some mistake.

Both AF and HF power amplifiers generally have a very low output impedance.

Motorola's AN721 app note on impedance matching networks for RF
transistors explains this.

This doesn't apply to QRP output stages, though.

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

84. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 17:45:45 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <lpjgvv425poar1kpv6l4d427ira0drj1r9@4ax.com>
Source record: 29770

On Sun, 04 Jan 2004 15:44:04 +0000, Leon Heller <aqzf13@dsl.pipex.com>
wrote:

>
>
>Paul Burridge wrote:
>> On Sat, 3 Jan 2004 16:50:52 -0800, "Tim Wescott"
>> <tim@wescottnospamdesign.com> wrote:
>>
>>
>>>Normally you'd expect the final amplifier to be fairly "stiff" - the output
>>>power should be inversely proportional to the resistor you put on it.
>>
>>
>> ??? Shirley, some mistake.
>
>Both AF and HF power amplifiers generally have a very low output impedance.
>
>Motorola's AN721 app note on impedance matching networks for RF
>transistors explains this.
>
>This doesn't apply to QRP output stages, though.

Hi, Leon,

Do you know Brian (G4BCO) by any chance?
My - admittedly little - understanding of the situation is that the
power transferred into a resistor (regardless of power level) will be
maximised when Rs=Rl,. whereupon half the power is dissipated in the
final device and half in the load. Tim's posts seems to refute this
basic truism. Clearly the statement that the output power should be
inversely proportional to the load resistance *must* be false.
--

"I expect history will be kind to me, since I intend to write it."
- Winston Churchill

85. Re: Radio Shack Quitting Parts Business?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 18:03:38 UTC
From: BJ <rajohngm@worldnet.att.net>
Message-ID: <_zYJb.596250$0v4.23494178@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29772

Yes, now they only sell toys, cell phones and Direct TV systems.
"Howard" <haf47@juno.com> wrote in message
news:f03bf94f.0311261708.65235a78@posting.google.com...
> Recent visits to my local Radio Shack for even the most simple
> components has left me disappointed. Recently I had the need for 5
> 10uf electrolytics at any voltage really, and could not find them at 3
> local stores.
>
> There used to be a selection of 25 or so IC's that were widely used
> and popular...no more tho.
>
> Even a simple LM386 could not be found around here.
>
> Also, the parts are now being jammed into these ugly parts bins as if
> to hide them from view.
>
> Is this the same situation where you live?
>
> One manager mentioned that components are no longer a real concern of
> management and that he is under the impression that "parts" are on the
> way out soon.
>
> Wouldn't that just be the way...the old local electronics places are
> out of business, and the Shack eliminates their parts. They sure do
> have answers, don't they?
>
> de WA2AFD

86. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 18:28:19 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <3ff85b43$0$18031$cc9e4d1f@news.dial.pipex.com>
Source record: 29773

Paul Burridge wrote:

> On Sun, 04 Jan 2004 15:44:04 +0000, Leon Heller <aqzf13@dsl.pipex.com>
> wrote:
>
>
>>
>>Paul Burridge wrote:
>>
>>>On Sat, 3 Jan 2004 16:50:52 -0800, "Tim Wescott"
>>><tim@wescottnospamdesign.com> wrote:
>>>
>>>
>>>
>>>>Normally you'd expect the final amplifier to be fairly "stiff" - the output
>>>>power should be inversely proportional to the resistor you put on it.
>>>
>>>
>>>??? Shirley, some mistake.
>>
>>Both AF and HF power amplifiers generally have a very low output impedance.
>>
>>Motorola's AN721 app note on impedance matching networks for RF
>>transistors explains this.
>>
>>This doesn't apply to QRP output stages, though.
>
>
> Hi, Leon,
>
> Do you know Brian (G4BCO) by any chance?
> My - admittedly little - understanding of the situation is that the
> power transferred into a resistor (regardless of power level) will be
> maximised when Rs=Rl,. whereupon half the power is dissipated in the
> final device and half in the load. Tim's posts seems to refute this
> basic truism. Clearly the statement that the output power should be
> inversely proportional to the load resistance *must* be false.

No, that isn't the case. From AN721:

"The load value is primarily dictated by the required output power and
the peak voltage; it is not matched to the output impedance of
the device."

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

87. Re: VOX on TS-140

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 18:39:42 UTC
From: fazamy@aol.com
Message-ID: <20040104133942.07934.00002276@mb-m16.aol.com>
Source record: 29774

Thanks for the info. Your response implies that everything I need is already on the TS-140. There is also some kind of VOX switch (I guess) on the front panel along with the jack in the back. Therefore, I guess, all I've to do is plug in the mic to the jack in the back and I'll be good to go?
The manual just mentions these features, but it doesn't go into any details.

Thanks and 73,
Evan
KB2AMY

88. Re: VOX on TS-140

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 18:45:16 UTC
From: fazamy@aol.com
Message-ID: <20040104134516.07934.00002277@mb-m16.aol.com>
Source record: 29775

Thanks for the info. I've thought of using a foot switch, but the notion doesn't appeal to me. Apparently, all I've to do is plug in a mic to the jack in the back and hit the switch on the front panel to activate the VOX. I hope this is so. All along I thought I needed additional circuits for the VOX.

Thanks and 73,
KB2AMY
Evan

89. Logging Program

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 19:07:58 UTC
From: fazamy@aol.com
Message-ID: <20040104140758.07934.00002280@mb-m16.aol.com>
Source record: 29776

Can anyone recommend a logging program that can be run on a 32mb, Windows 95, Pentium 1, and small hard drive pc?

Thanks,
Evan
KB2AMY

90. Homebrew Fun

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 19:14:20 UTC
From: Freddie <brianNOSPAM86@iquest.net>
Message-ID: <gCZJb.7998$6B.6744@newsread1.news.atl.earthlink.net>
Source record: 29777

Hey if you're looking for a winter project, I am building a K8IQY 40m tranceiver.

It's all manhattan style fabrication and made from easy to find parts. QRP at about 3 watts, and loads of fun to build.

A Yahoo group has been setup for the builders/experimenters.

The group is called 2N2-40

http://groups.yahoo.com/group/2N2-40/

73

--
==========
Agnus dei, qui tollis pecatta mundi, dona nobis Pacem.
==========
KB9BVN/QRP QRP-L 1540 QRP-ARCI 10223
39.558 N 86.095 W Johnson Co., Indiana
GRID: EM69WN - Elecraft K1 - Attic Dipole - 5w
Member of the ARRL - SOC #400
FISTS 5695 CC 764 FPQRP #-57
==========

91. Re: Logging Program

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 19:30:58 UTC
From: Freddie <brianNOSPAM86@iquest.net>
Message-ID: <SRZJb.8047$6B.3613@newsread1.news.atl.earthlink.net>
Source record: 29778

Yup

http://www.n3fjp.com

I have his logger on a IBM Notebook (Thinkpad 760E) running Win 95 with 32MB RAM and a 1.1GB hard disk.

"FAZAMY" <fazamy@aol.com> wrote in message news:20040104140758.07934.00002280@mb-m16.aol.com...
> Can anyone recommend a logging program that can be run on a 32mb, Windows 95,
> Pentium 1, and small hard drive pc?
>
> Thanks,
> Evan
> KB2AMY

92. Re: VOX on TS-140

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 20:12:39 UTC
From: "Dee D. Flint" <deehays@qix.net>
Message-ID: <Xs_Jb.20584$P%1.19719272@newssvr28.news.prodigy.com>
Source record: 29780

"FAZAMY" <fazamy@aol.com> wrote in message
news:20040104133942.07934.00002276@mb-m16.aol.com...
> Thanks for the info. Your response implies that everything I need is
already
> on the TS-140. There is also some kind of VOX switch (I guess) on the
front
> panel along with the jack in the back. Therefore, I guess, all I've to do
is
> plug in the mic to the jack in the back and I'll be good to go?
> The manual just mentions these features, but it doesn't go into any
details.
>
> Thanks and 73,
> Evan
> KB2AMY

No just leave the mic plugged into the mic jack on the front and push the VOX button in. Then adjust the 1) VOX GAIN, 2) DELAY, and 3) ANTI-VOX so that the radio 1) begins to transmit when you speak, 2) stops transmitting shortly after you stop speaking, and 3) doesn't trip on background noise

Dee D. Flint, N8UZE

93. Re: Logging Program

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 20:13:32 UTC
From: "Dee D. Flint" <deehays@qix.net>
Message-ID: <Mt_Jb.20585$P%1.19719568@newssvr28.news.prodigy.com>
Source record: 29781

"FAZAMY" <fazamy@aol.com> wrote in message
news:20040104140758.07934.00002280@mb-m16.aol.com...
> Can anyone recommend a logging program that can be run on a 32mb, Windows
95,
> Pentium 1, and small hard drive pc?
>
> Thanks,
> Evan
> KB2AMY

Try Aclog by N3FJP. This is my personal favorite. Otherwise you might try
N1MM logging software or Genlog.

Dee D. Flint, N8UZE

94. IC-790 Help

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 22:22:04 UTC
From: Mike Oreskovic <ores@idirect.com>
Message-ID: <vvh4pa3a5ctm2f@corp.supernews.com>
Source record: 29779

Hi,

I have an Icom IC-790a which is not working properly. I can't get any transmit audio in any mode. Yes, the RF gain is turned up and I've tried different microphones, all of which work OK in other radios. Any ideas?

73 Mike

95. Re: VOX on TS-140

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 22:25:27 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <4YfKb.642$_j3.145700@newsfep1-win.server.ntli.net>
Source record: 29708

> Thanks for the info. I've thought of using a foot switch, but the notion
> doesn't appeal to me. Apparently, all I've to do is plug in a mic to the
jack
> in the back and hit the switch on the front panel to activate the VOX. I
hope
> this is so. All along I thought I needed additional circuits for the VOX.
==========
The circuit might be there ,but you still have to set up the VOX , i.e. by
adjusting threshold and delay.

Frank GM0CSZ / KN6WH

96. APRS and signal strength..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 23:13:02 UTC
From: Joel <Joel@cyberbest.com>
Message-ID: <o61Kb.1306$eC1.485436552@twister2.starband.net>
Source record: 29782

I was thinking my next project might be some sort of 'device' that I could put in the car.. Drive around and have a message sent back every few seconds with GPS and signal strength measurements. It would be great for testing our local repeater or antenna system. I was thinking of using something like APRS with a A2D converter to translate the signal strength from a HT. Then formulate a packet with GPS and signal strength and blast it back to a base station or just send the data to a laptop. I know there are similar commercial 'devices' for cellular and CDPD. But was wondering if any one knew of a device for ham radio use? Anyone know any devices that do something like the above or articles or schematics?

Joe AG4QC

97. Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 23:42:57 UTC
From: James Fenech <james.fenech@xxxnec.com.au>
Message-ID: <1073259777.711769@proxy.nec.com.au>
Source record: 29783

Hello,

I have a general question regarding tuning diodes:
Does the oscillation voltage alter their capacitance, or is capacitance a slow changing value - like resistance and PIN diodes?

The reason I ask is that I am spicing (simulation) a VCO I wish to build (wide range 140-240MHz) and get an oscillation voltage of 20 volts peak (maybe the Q is too high). This high oscillation voltage would easily swamp the tuning voltage, 3-15 volts, and forward bias the diode itself.

If anyone wishs to reply directly they must remove the "xxx" from the return address or write to:
james dot fenech at nec dot com dot au

Thanks,
James.

98. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-04 23:52:38 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <vvh9q9d0pr60ac@corp.supernews.com>
Source record: 29784

OK, my point is (and you can test this yourself), that (1) the concept of Rs is invalid for a class C stage, because it's not a linear device. You can fool yourself into thinking it is, but it's not. (2) the typical RF output stage, sans output filter, which consists of a transistor fed by a choke or transformer and which pulls the collector voltage nearly down to the emitter acts like an RF voltage source with a fairly low series resistance. I've _done_ this. I've _measured_ this. I've _burnt_ transistors.

You _can_ get much more power from your output stage than it's "normal" output power, for that brief (and often shining) moment before the output transistor lets the smoke out and reverts to the sand and basic petrochemicals from which it was originally made. This is how you know that you aren't running it at the Rs = Rl point -- rather, you're running it at the point where the junction temperature of the transistor is kept to a level that will let it stay a transistor for a satisfying amount of time.

This is why in my original reply I compared the output amp to a wall socket. The equivalent Rs of your average wall socket is probably on the order 1/2 to 4 ohms (on the low end for 120V, high for 230). Since I live in the US and have fairly good feed, I'll use the 1-ohm 120V case, and I'll match Rs with Rl. Lessee. 120V, 1-ohm, that's 14400 watts -- good! But my circuit is only is only good for 15 amps and I'm asking for 120?!? Dang! What happened to the lights?

So you see, every time you plug anything into the wall, you're failing to match Rs with Rl, and that's a _very_ good thing. It's for exactly the same reason that you don't match Rs with Rl in your output stage.

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message news:lpjgvv425poar1kpv6l4d427ira0drj1r9@4ax.com...
> On Sun, 04 Jan 2004 15:44:04 +0000, Leon Heller <aqzf13@dsl.pipex.com>
> wrote:
-- snip --
> My - admittedly little - understanding of the situation is that the
> power transferred into a resistor (regardless of power level) will be
> maximised when Rs=Rl,. whereupon half the power is dissipated in the
> final device and half in the load. Tim's posts seems to refute this
> basic truism. Clearly the statement that the output power should be
> inversely proportional to the load resistance *must* be false.
> --
>
> "I expect history will be kind to me, since I intend to write it."
> -
Winston Churchill

99. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 00:06:53 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <vvhalb80qblga2@corp.supernews.com>
Source record: 29785

"Gary Morton" <gary@alma.demon.co.uk> wrote in message
news:tkWJb.6473$%m7.64493664@news-text.cableinet.net...

-- snip --
>
> So perhaps the fact that the transmitter is connected to a 50 ohm load and
the
> output transformer is 2:1 turns ratio means that the transistor is
"seeing"
> 200 ohms?

Exactly.

> Nevertheless I am still interested in how to verify that any circuit which
I
> design (copy!) does have a 50 ohm output impedance. There must be some way
to
> verify this figure.

Please see my reply to Paul Burrage in the next branch over -- hopefully I'm clarifying that for a power output stage you _don't_ want to see matched impedances.

For a stage (such as an intermediate, class A stage) where you _do_ want to verify the output impedance you can either find the resistance _and reactance_ that maximizes the power output, or you can build an RF impedance bridge (I use a noise bridge) and measure the stage output impedance directly. Just don't let it break into oscillation on the output of that poor impedance bridge!

> --Gary
>

100. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 00:11:04 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <vvhat882i14fe8@corp.supernews.com>
Source record: 29786

Here's an experament: Build a power output stage _only_. Don't put a filter on it. You should have a transistor with the emitter grounded, a choke to +12V, and some minimal network on the base to keep it biased. You should be able to pick this out of your Tuna Tin II design. Capacitor couple an appropriate resistor to the collector (200 ohms if you use your Tuna Tin II).

Now feed it with enough RF so it's really into class C, and measure the RF voltage on the resistor. It should be around 8V (supply * 0.35) give or take a bit.

Now change the output resistor by a factor of two and measure the RF voltage again. It should be about the same as before assuming that you've sized your choke correctly (4x the design resistance). This shows that your output stage is stiff (i.e. has a low equivalent Rs).

What this all means is that your average well-designed output stage does _not_ have a matched Rs! Why? Because when Rs = Rl the power in Rl is maximized _for that Rs_, but the power burnt into heat inside of Rs is also maximized! Since you want the power in Rl to be much higher than the power used to heat up your shack (unless it's really cold inside) this is a good and desireable thing.

"Gary Morton" <gary@alma.demon.co.uk> wrote in message news:BaoJb.5320$qA5.52892911@news-text.cableinet.net...
> Over the Xmas break I constructed a simple 2 transistor QRP transmitter using
> the Tuna Tin II design.
>
> Using a power meter and a 50 ohm dummy load it appears to show around 200mW, a
> little less than the article suggested. Then again I had substituted the final
> stage 2N2222 transistor for a beefier (size wise) BFY51. I'm not too sure
> what exact difference this will make.
>
> In the article it says that the 200 ohm output impedance of the final stage is
> transformed down to around 50 ohm (using a 2:1 turns ratio untuned
> transformer wound on a toroid).
>
> I have added a 7th order low pass filter to reduce the harmonics.
>
> I am interested in verifying the output impedance.

>
> If I understand the theory, when the output is terminated with a resistor
> which matches the output impedance then the power transferred to the load
will
> be maximised.
>
> I set about loading the output will a series of resistors and measuring
the
> peak to peak voltage across them in order to calculate the r.m.s. voltage
and
> hence the power dissapation.
>
> Resistors of value less than 10 ohm gave strange results.
>
> load r.m.s. power (V*V/R)
> voltage
>
> 10 1.272 0.162
> 15 1.767 0.208
> 27 3.005 0.334
> 33 3.253 0.321
> 39 3.676 0.346
> 47 4.066 0.352
> 56 4.384 0.343
> 68 4.666 0.320
> 100 5.303 0.281
>
> The numbers work reasonably well and point towards 50 ohms-ish.
>
> The power value looks too high - so I might have made a mis-calculation
somewhere!
>
> Can anyone pass comments on the above?
>
> I'm interested in where the 200 ohm figure comes from.
>
> Any suggestions as to other methods of measuring the output impedance?
>
> regards...
>
> --Gary (M1GRY)
>

101. Re: Logging Program

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 00:17:14 UTC
From: Roger Gt <Xenot@pacbell.net>
Message-ID: <e22Kb.5642$ID6.3316@newssvr27.news.prodigy.com>
Source record: 29787

"FAZAMY" <fazamy@aol.com> wrote in message
news:20040104140758.07934.00002280@mb-m16.aol.com...
> Can anyone recommend a logging program that can be run on a 32mb, Windows
95,
> Pentium 1, and small hard drive pc?
>
> Thanks,
> Evan
> KB2AMY

Free

http://home.bresnan.net/~vbob/rylogit.htm

102. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 00:22:32 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <vvhbicbb8tbp49@corp.supernews.com>
Source record: 29788

The varactor capacitance change is instantaneous -- think of a capacitor who's plate spacing is dependent on it's voltage. This is why varactors are used for frequency multiplication -- that capacitance change "squeezes" the pulse to generate lots of harmonics.

So your oscillation voltage will certainly affect the tuning, and the forward bias effects will be most unfortunate.

I have modelled varactor diodes by dinking with the area parameter of the SPICE diode model, but I'm not a pro in that regard and don't know the "right" way to do it. SPICE is also not the tool for determining the behavior of nonlinear high-Q circuits (I believe the best tool still involves FR-4 and lots of cussing).

"James Fenech" <james.fenech@xxxnec.com.au> wrote in message news:1073259777.711769@proxy.nec.com.au...
> Hello,
>
> I have a general question regarding tuning diodes:
> Does the oscillation voltage alter their capacitance, or is capacitance a
> slow changing value - like resistance and PIN diodes?
>
> The reason I ask is that I am spicing (simulation) a VCO I wish to build
> (wide range 140-240MHz) and get an oscillation voltage of 20 volts peak
> (maybe the Q is too high). This high oscillation voltage would easily swamp
> the tuning voltage, 3-15 volts, and forward bias the diode itself.
>
> If anyone wishs to reply directly they must remove the "xxx" from the return
> address or write to:
> james dot fenech at nec dot com dot au
>
> Thanks,
> James.
>
>

103. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 01:50:15 UTC
From: Wim Lewis <wiml@underhill.hhhh.org>
Message-ID: <btafsn$f8d$0@216.39.137.58>
Source record: 29789

In article <1073259777.711769@proxy.nec.com.au>,
James Fenech <james.fenech@xxxnec.com.au> wrote:
>I have a general question regarding tuning diodes:
>Does the oscillation voltage alter their capacitance, or is capacitance a
>slow changing value - like resistance and PIN diodes?

As I understand it, the oscillation voltage does vary the varactor's
capacitance, and that's the reason that lots of VCOs have a pair of
tuning diodes connected to opposite halves of the tank. It's still
good to keep the oscillation voltage small compared to the tuning
voltage.

--
Wim Lewis <wiml@hhhh.org>, Seattle, WA, USA. PGP keyID 27F772C1

104. Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 02:12:01 UTC
From: k7itm@aol.com
Message-ID: <3200347.0401041812.5c7ebb9d@posting.google.com>
Source record: 29790

Yes, the RF generally does cause nearly instantaneous voltage changes, and therefore capacitance changes, across the diode. Spice should handle this properly. You need to lower that RF voltage! In addition, the average capacitance will depend on the amplitude of the RF because of the nonlinear nature of the capacitance versus voltage, so it's important to keep the RF level reasonably constant, for stability. It's fairly common in covering a wide range, especially if you also want low phase noise, to break it up into subranges which might be selected with switching or PIN diodes. Of course, it's also critical to keep the control voltage "quiet" because at 10MHz/volt or so, a millivolt will give you 10kHz of frequency deviation.

If you look up other uses for varactor diodes, you'll find that the characteristic you are asking about is used to make efficient frequency multipliers, and even mixers and amplifiers. (Search for "parametric amplifier.")

Cheers,
Tom

In message 1073259777.711769@proxy.nec.com.au, James French wrote:
>Hello,
>
>I have a general question regarding tuning diodes:
>Does the oscillation voltage alter their capacitance, or is capacitance a
>slow changing value - like resistance and PIN diodes?
>
>The reason I ask is that I am spicing (simulation) a VCO I wish to build
>(wide range 140-240MHz) and get an oscillation voltage of 20 volts peak
>(maybe the Q is too high). This high oscillation voltage would easily swamp
>the tuning voltage, 3-15 volts, and forward bias the diode itself.
>
>If anyone wishs to reply directly they must remove the "xxx" from the return
>address or write to:
>james dot fenech at nec dot com dot au
>
>Thanks,
>James.

105. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 02:40:06 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <rlhhvv45jgpeasd6chqbnpshaj9ghmqh0g@4ax.com>
Source record: 29791
Cross-posted to: rec.radio.amateur.homebrew,scil.electronics.design

On Sun, 4 Jan 2004 16:06:53 -0800, "Tim Wescott"
<tim@wescottnospamdesign.com> wrote:

>For a stage (such as an intermediate, class A stage) where you _do_ want to
>verify the output impedance you can either find the resistance _and
>reactance_ that maximizes the power output, or you can build an RF impedance
>bridge (I use a noise bridge) and measure the stage output impedance
>directly. Just don't let it break into oscillation on the output of that
>poor impedance bridge!

Bullshit. In any class of operation, maximum power will be transferred
when the impedances are matched. Period.
--

"I expect history will be kind to me, since I intend to write it."
- Winston Churchill

106. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 02:40:07 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <jshhvvs282ksrfof1c6l93j3l11c2j3mm7@4ax.com>
Source record: 29792
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 4 Jan 2004 16:22:32 -0800, "Tim Wescott"
<tim@wescottnospamdesign.com> wrote:

>The varactor capacitance change is instantaneous -- think of a capacitor
>who's plate spacing is dependent on it's voltage. This is why varactors are
>used for frequency multiplication -- that capacitance change "squeezes" the
>pulse to generate lots of harmonics.

Rubbish. Varactors are not used for freqency mulitplication. They are
freequenty used in VXCOs for modulating (or otherwise varying) the
oscillator output frequency by means of applying a DC bias voltage
which alters the capacitance of the PN junction.
--

"I expect history will be kind to me, since I intend to write it."
- Winston Churchill

107. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 03:10:58 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <btakk2$4th$1@freenet9.carleton.ca>
Source record: 29794
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge (pb@osiris1.notthisbit.co.uk) writes:
> On Sun, 4 Jan 2004 16:22:32 -0800, "Tim Wescott"
> <tim@wescottnospamdesign.com> wrote:
>
>>The varactor capacitance change is instantaneous -- think of a capacitor
>>who's plate spacing is dependent on it's voltage. This is why varactors are
>>used for frequency multiplication -- that capacitance change "squeezes" the
>>pulse to generate lots of harmonics.
>
> Rubbish. Varactors are not used for freqency mulitplication. They are
> freequenty used in VXCOs for modulating (or otherwise varying) the
> oscillator output frequency by means of applying a DC bias voltage
> which alters the capacitance of the PN junction.

First, can you do us a favor and stop the constant cross-posting between these two newsgroups? Take note that the original post was only to rec.radio.amateur.homebrew but for some reason you felt it necessary to cross-post your reply to sci.electronics.design.

You've also shown your age in claiming varactors are not used as multipliers.

You only have to look at ham magazines and books from the early sixties to know that frequency multiplication was a common use for varactors back then. Get a power varactor, and you could get onto a higher band by feeding it with a high power signal. An easy way to get on 432 or 1296MHz without any amplification on the signa frequency.

It's hard to judge these things, but it seems like for hams, multiplication was a more signifant use for varactors in those early days than as a variable element in an oscillator. After all, FM wasn't that common in the early sixties, and a VCO was fairly a novelty. Few bothered with PLLs of any kind, and for a free running oscillator with no small frequency counters, one was better off sticking with a variable capacitor as the tuning element.

Of course, another common sight back then was to see varactors in parametric amplifiers. Though those saw relatively small use in ham radio, in certain areas their need was much more useful than a VCO. Actually, there would have been a fair amount of overlap between varactors as multipliers and varactors as small signal amplifiers, since hams needed them at the higher frequencies if they wanted to do weak signal work.

Michael VE2BVW

108. Re: Radio Shack Quitting Parts Business?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 03:18:08 UTC
From: John Moriarity <k6qq@hdo.net>
Message-ID: <vvhlqr6tklh10d@corp.supernews.com>
Source record: 29793

> >They sure do have answers, don't they?
> >
> > de WA2AFD

Yes, and most of them are wrong!

73, John - K6QQ

109. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 03:26:25 UTC
From: John Moriarity <k6qq@hdo.net>
Message-ID: <vvhmarc8npdqdb@corp.supernews.com>
Source record: 29795
Cross-posted to: rec.radio.amateur.homebrew,scil.electronics.design

> Bullshit. In any class of operation, maximum power will be transferred
> when the impedances are matched. Period.

Your arrogant ignorance overwhelms me!!

Listen to those who know more than you.
Read a few engineering texts.

I am not willing to explain this again to a fool.

John - K6QQ

110. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 03:27:25 UTC
From: Winfield Hill <Winfield_member@newsguy.com>
Message-ID: <btalit0ubj@drn.newsguy.com>
Source record: 29796
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge wrote...
>
> Tim Wescott wrote:
>
>> The varactor capacitance change is instantaneous -- think of a capacitor
>> who's plate spacing is dependent on it's voltage. This is why varactors
>> are used for frequency multiplication -- that capacitance change
>> "squeezes" the pulse to generate lots of harmonics.
>
> Rubbish. Varactors are not used for freqency mulitplication. They are
> freequenty used in VXCOs for modulating (or otherwise varying) the
> oscillator output frequency by means of applying a DC bias voltage
> which alters the capacitance of the PN junction.

Your own rubbish, Paul. In truth of fact, varactors are nicely used
for frequency multiplication, just as Tim stated. They also work well
for VCO FM modulation, but users must keep in mind their instantaneous
capacitance-change property and be careful to bias them in appropriate
higher-voltage bias regions, or risk unintended distortion. When used
as multipliers, low-voltage bias with large signals enhances the effect.

Thanks,
- Win

whill_at_picovolt-dot-com

111. Re: Radio Shack Quitting Parts Business?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 04:45:37 UTC
From: Larry Gagnon <lagagnon@fakeuniserve.com>
Message-ID: <vvhqu66aap0ve6@corp.supernews.com>
Source record: 29697

John Moriarity wrote:

>> >They sure do have answers, don't they?
>> >
>> > de WA2AFD
>
> Yes, and most of them are wrong!
>
> 73, John - K6QQ

Besides, their parts were and always have been complete crap anyways, so not a great loss really...

Larry VE7EA
--
****
to send direct email remove "fake"

112. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 05:33:06 UTC
From: John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com>
Message-ID: <84thvvk0p7qai62ka0ap70gr5c732h4161@4ax.com>
Source record: 29698
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 05 Jan 2004 02:40:07 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>Rubbish. Varactors are not used for freqency mulitplication.

If you are determined to be arrogant, it helps to occasionally be
right. Varactors are still used for frequency multiplication. They
were also commonly used as parametric amplifiers and mixers before
other semiconductors got fast enough to work at microwave frequencies.
Varactors were even used as paramps in the front ends of opamps.

Google "varactor frequency multiplier" and "parametric amplifier" and
maybe learn something.

John

113. Re: Who makes the best solder braid?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 06:39:18 UTC
From: dplatt@radagast.org
Message-ID: <vvi1kmt1m7po85@corp.supernews.com>
Source record: 29699

>In a low-volume application an ordinary home dishwasher will do fine,
>PROVIDED you use deionized water (not "soft" water) and a cleaner
>designed specifically for the job. In my previous life I tested many
>cleaners and the one which did the best job and left the least residue
>was Armakleen E-2001 made by Arm and Hammer. A 55 gallon drum was about
>$2k a few years ago. Good stuff, but I do miss Freon.

For what it's worth, National Semiconductor's resident wizard Bob
Pease used to clean circuit boards using an ordinary dishwasher and "a
standard charge of Calgonite". If I recall correctly, he suggested
taking the board out after the rinse cycle, doing a final rinse with
distilled or deionized water and then shaking the remaining water off
of the board prior to air-drying.

He reported that this method would get the cross-board leakage
currents for sensitive high-impedance circuitry down below what he was
able to achieve with organic-solvent washes.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

114. Re: Need info from old Mini-Circuits (MCL) Catalog

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 08:40:17 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <Rp9Kb.282160$Ec1.9691358@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29700

Hi Michael,
I was in the Synthesizer Group, so I didn't have my hand
in those projects that you mentioned.
Pretty cool, on those microwave parts that you have on hand.
I used to find those kinds of cool things when I visited the Rockwell
Inventory Disposal store. I need to get out there again.....

Pete

Michael A. Terrell <mike.terrell@earthlink.net> wrote in message
news:3FE5D8DA.E542FA65@earthlink.net...
> Pete KE9OA wrote:
> >
> > Many times, they also do that when they make a special part for a
customer.
> > When I was at Rockwell, we had some MCL parts that were identical to the
off
> > the shelf part, except that they were screened for closer tolerances.
> >
> > Pete
>
> Were you involved with either the SVR-4F or 55U3-1SC C-band
> commercial Satellite receivers? A CATV company I worked for had piles of
> the SVR-4F receivers that I repaired at our Cincinnati Ohio system. They
> were shipped to me from all over the US because of the long turnaround
> time for factory service. I still have a few parts from units that were
> too expensive to fix. I have 10 Microwave Associates 3.4 to 4.2 GHz
> isolators (7K75Z) sitting in front of me from the five units I scrapped.
> I think I still have a number of modules for the 55U3-1SC in a box out
> in my shop.
>
>
> --
> 4 days!
>
>
> Michael A. Terrell
> Central Florida

115. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 10:13:29 UTC
From: Freddie <brianNOSPAM86@iquest.net>
Message-ID: <dNaKb.25161$IM3.12993@newsread3.news.atl.earthlink.net>
Source record: 29701

Wow. Paul...have you ever thought about trying caffeine free?

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:rlhhvv45jgpeasd6chqbnpshaj9ghmqh0g@4ax.com...

> Bullshit. In any class of operation, maximum power will be transferred
> when the impedances are matched. Period.

116. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 10:22:06 UTC
From: Active8 <mTHISREMOVEcolasono@earthlink.net>, invalid
Message-ID: <MPG.1a6304e1263c7fff98982c@news.east.earthlink.net>
Source record: 29702
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 05 Jan 2004 02:40:07 +0000, pb@osiris1.notthisbit.co.uk
said...
> On Sun, 4 Jan 2004 16:22:32 -0800, "Tim Wescott"
> <tim@wescottnospamdesign.com> wrote:
>
> >The varactor capacitance change is instantaneous -- think of a capacitor
> >who's plate spacing is dependent on it's voltage. This is why varactors are
> >used for frequency multiplication -- that capacitance change "squeezes" the
> >pulse to generate lots of harmonics.
>
> Rubbish. Varactors are not used for freqency mulitplication. They are
> freequenty used in VXCOs for modulating (or otherwise varying) the
> oscillator output frequency by means of applying a DC bias voltage
> which alters the capacitance of the PN junction.
>
Dude, please.
--
Best Regards,
Mike

117. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 11:06:58 UTC
From: peg@slingshot.co.nz
Message-ID: <62069f15.0401050306.1129f383@posting.google.com>
Source record: 29703
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

>
> Rubbish. Varactors are not used for freqency mulitplication.
Google"varactor multipliers", still used. Popular technique in
the 60's for getting 70 cm output from 2m TX.
As osc control keep RF across diode low, high levels produce harmonics
and reduce tuning range. Most tuning varieties have max V = 30.
At low freqs power diodes work ok and have high V rev.

118. UK availability of RF components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 11:57:28 UTC
From: Philip de Cadenet <Philstheboss@thebbc.fslife.co.uk>
Message-ID: <eJ96yHGoEV+$Ewmr@philstheboss.freeserve.co.uk>
Source record: 29704

Other than importing from RF Parts in the US or Barend in the
Netherlands does anyone happen to know of a UK source for any of the
following parts:

Unelco/sprague type metal clad capacitors

25 ohm semi-rigid coaxial cable

Philips 'Blue Spot' or similar high voltage RF trimming cap's, min 300v
working (65pf).

Thanks.
--
Philip de Cadenet G4ZOW

119. Re: Homebrew Fun

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 13:38:25 UTC
From: brokebob@aol.com
Message-ID: <20040105083825.19310.00002290@mb-m13.aol.com>
Source record: 29705

Want to read a few adds while chasing an elusive site? This is the place!
brokebob@aol.com (broke=not working, retired=not working, retired=broke)

120. Re: Need info from old Mini-Circuits (MCL) Catalog

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 14:33:46 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <3FF975C5.A77F0CC0@earthlink.net>
Source record: 29706

Pete KE9OA wrote:
>
> Hi Michael,
> I was in the Synthesizer Group, so I didn't have my hand
> in those projects that you mentioned.
> Pretty cool, on those microwave parts that you have on hand.
> I used to find those kinds of cool things when I visited the Rockwell
> Inventory Disposal store. I need to get out there again.....
>
> Pete

I started repairing the Collins/Rockwell receivers in self defense. They decided that we had to rent a loaner from them, or they wouldn't repair our equipment. They charged $150/month rent, and took over six months to fix a receiver. The typical bill was over $1200. I had the manual, so I popped one open and found the first LO was fried. Rockwell told me the microwave transistor was 1500, minimum ordered of 18 parts because it was out of stock. The transistor was a die mounted to a gold stud, and covered with a drop of epoxy, and no part number. New Microdyne LPR receivers were right at $1000, and worked a lot better so I told them to forget it, that we were going to repair what we could, and replace them with the LPR units, when we had to. I fixed most of them in under one hour bench time, and less than $20 in parts. The biggest problem with them was they ran way too hot, and over a five year period, the circuit boards developed a large black spot in the center of the board as they cooked themselves to death. Still, it was my first work with solid state microwave equipment.

I found a VCO board for a Microdyne synthesizer in my junk the other day. They had used the design for years, and it was becoming harder for the techs to get them to meet the specs. I was asked to work on them for while and found a number of problems with the design, and parts that were selected to replace obsolete parts. I learned a lot of tricks to clean up a PLL circuit fixing a mountain of rejected modules. It was harder work convincing both design and manufacturing engineering to correct the problems, than it was to find the problems.

--
We now return you to our normally scheduled programming.

Michael A. Terrell
Central Florida

121. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 15:46:40 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <c50jvvk1p43vivjmlbouogj6tmjngkpsr4@4ax.com>
Source record: 29707
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 4 Jan 2004 19:27:25 -0800, Winfield Hill
<Winfield_member@newsguy.com> wrote:

> Your own rubbish, Paul. In truth of fact, varactors are nicely used
> for frequency multiplication, just as Tim stated.

You're right. I can't believe I posted that load of nonsense. Maybe
it's a case of "late onset mad cow disease." :-|
--

"I expect history will be kind to me, since I intend to write it."
- Winston Churchill

122. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 16:23:16 UTC
From: Winfield Hill <Winfield_member@newsguy.com>
Message-ID: <btc31k023nt@drn.newsguy.com>
Source record: 29710
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

```
Paul Burridge wrote...
>
> You're right. I can't believe I posted that load of nonsense.
> Maybe it's a case of "late onset mad cow disease." :-|

OK, you are forgiven, my son. Go and sin no more.

Thanks,
- Win

whill_at_picovolt-dot-com
```

123. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 16:48:35 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <vvj5b2qg5sm160@corp.supernews.com>
Source record: 29709
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul, please look over my various posts on this issue and tell me where I failed to point out that you can get more power from a bare RF output stage by loading it differently.

I'm gonna go fertilize my garden!

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message news:rlhhvv45jgpeasd6chqbnpshaj9ghmqh0g@4ax.com...
> On Sun, 4 Jan 2004 16:06:53 -0800, "Tim Wescott"
> <tim@wescottnospamdesign.com> wrote:
>
> >For a stage (such as an intermediate, class A stage) where you _do_ want to
> >verify the output impedance you can either find the resistance _and
> >reactance_ that maximizes the power output, or you can build an RF impedance
> >bridge (I use a noise bridge) and measure the stage output impedance
> >directly. Just don't let it break into oscillation on the output of that
> >poor impedance bridge!
>
> Bullshit. In any class of operation, maximum power will be transferred
> when the impedances are matched. Period.
> --
>
> "I expect history will be kind to me, since I intend to write it."
> -
Winston Churchill

124. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 17:14:28 UTC
From: Jim Weir <jim@rst-engr.com>
Message-ID: <0q6jvv40l01ee35eja5es7p9riqcppok92@4ax.com>
Source record: 29711
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

If you aren't using the turnip truck you just fell from, could I borrow it for a while? {;-)

Jim

Paul Burridge <pb@osiris1.notthisbit.co.uk>
shared these priceless pearls of wisdom:

->
->Rubbish. Varactors are not used for freqency mulitplication.
Jim Weir, VP Eng. RST Eng. WX6RST
A&P, CFI, and other good alphabet soup

125. Re: Radio Shack Quitting Parts Business?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 17:16:43 UTC
From: Jim Weir <jim@rst-engr.com>
Message-ID: <nt6jvvcrgifiati2sb3a69cbk0ndoerm05@4ax.com>
Source record: 29712

Yes, but even crap on a late Sunday afternoon when the project demo was due on Monday morning was a blessing...

Jim

->Besides, their parts were and always have been complete crap anyways, so not
->a great loss really...

Jim Weir, VP Eng. RST Eng. WX6RST
A&P, CFI, and other good alphabet soup

126. Re: Wacky Idea ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 20:23:58 UTC
From: Wim Lewis <wiml@underhill.hhhh.org>
Message-ID: <btch4u$gk2$0@216.39.137.58>
Source record: 29713

In article <vtfae5sfalp9e5@corp.supernews.com>,
David Forsyth <foda01@ncx.com> wrote:
>I know this is a wacky idea but...
>
>Would it be at least theoretically possible to transmit digital (hi-fi?)
>audio signals using a spark-gap transmitter?

I don't see why not, although getting the data rate high enough to transmit audio in real time might be tricky. Assuming heavily compressed (not hi-fi ;-) audio at 8kbps, you have 125 microseconds to send each bit. Some googling suggests that 10 us jitter in spark timing is achievable with a mechanical (rotary) gap. You could use on/off modulation or perhaps even pulse-position modulation. Perhaps you could use a UV flash to reliably initiate the spark at a particular time, or a secondary spark. You'll have to connect the digital electronics to the spark-gap transmitter somehow.

--
Wim Lewis <wiml@hhhh.org>, Seattle, WA, USA. PGP keyID 27F772C1

127. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 21:09:56 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <dvhjvv8ub9t8umgsn71qikuvgd0is8548c@4ax.com>
Source record: 29714
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 5 Jan 2004 08:23:16 -0800, Winfield Hill
<Winfield_member@newsguy.com> wrote:

>Paul Burridge wrote...
>>
>> You're right. I can't believe I posted that load of nonsense.
>> Maybe it's a case of "late onset mad cow disease." :-|
>
> OK, you are forgiven, my son. Go and sin no more.

Yes, m'lud. In mitigation I'd like to plead Jack Daniels. :-)
--

"I expect history will be kind to me, since I intend to write it."
- Winston Churchill

128. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 21:09:57 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <t1ijvvc3suv6juer59n8pg3j2tdp1rodl0@4ax.com>
Source record: 29715
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 05 Jan 2004 09:14:28 -0800, Jim Weir <jim@rst-engr.com> wrote:

>If you aren't using the turnip truck you just fell from, could I borrow it for a
>while? {;-)

Hehe! Fair comment. Thank God I don't have any reputation to lose on
this group. :-)
--

"I expect history will be kind to me, since I intend to write it."
- Winston Churchill

129. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 21:15:15 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <gukjvvsm5koaa28l5b2m7n9pg6ps4ua7g9@4ax.com>
Source record: 29716
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 5 Jan 2004 08:48:35 -0800, "Tim Wescott"
<tim@wescottnospamdesign.com> wrote:

>Paul, please look over my various posts on this issue and tell me where I
>failed to point out that you can get more power from a bare RF output stage
>by loading it differently.

Sorry, Tim. I've no idea what you mean.
--

"I expect history will be kind to me, since I intend to write it."
- Winston Churchill

130. Radio Designer software package

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 21:23:14 UTC
From: K&#65533;HB <groupk0hb@earthlink.net>
Message-ID: <6BkKb.21854$lo3.19299@newsread2.news.pas.earthlink.net>
Source record: 29717
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.policy,rec.radio.amateur.misc

Several years ago ARRL marketed a WIN3.xx software package called "Radio Designer" which was a 'lite' copy of a commercial RF design program. Unfortunately the program does not run under 16- and 32-bit Windows environments, and the OEM is not interested in entering into further arrangements with ARRL.

Does anyone know of a similar program in a price range (under $500) attractive to hams?

73, de Hans, K0HB

--
http://www.home.earthlink.net/~k0hb

131. Re: Radio Designer software package

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 21:54:05 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <12lKb.1373$_o1.804@nwrdny01.gnilink.net>
Source record: 29718
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.policy,rec.radio.amateur.misc

The company that made ARRL Designer (Compact Software) was bought by Ansoft.
They have greatly enhanced the capability, and the current offering is
available as a free student version here:
http://www.ansoft.com/ansoftdesignersv/
There are also many other evaluation & student packages available on the net
for free. Check out this site as a starter:
http://www.rfengineer.cc/rftools.htm

Also, if you do an internet search on "RF circuit analysis software" or
something similar, you'll get lots of hits.

BTW, I run ARRL Designer under Win98SE and it's fine. What OS are you trying
to use it with?

Joe
W3JDR

"K HB" <groupk0hb@earthlink.net> wrote in message
news:6BkKb.21854$lo3.19299@newsread2.news.pas.earthlink.net...
> Several years ago ARRL marketed a WIN3.xx software package called "Radio
> Designer" which was a 'lite' copy of a commercial RF design program.
> Unfortunately the program does not run under 16- and 32-bit Windows
> environments, and the OEM is not interested in entering into further
> arrangements with ARRL.
>
> Does anyone know of a similar program in a price range (under $500)
> attractive to hams?
>
> 73, de Hans, K0HB
>
> --
> http://www.home.earthlink.net/~k0hb
>
>
>

132. Re: Radio Designer software package

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 22:12:15 UTC
From: K&#65533;HB <groupk0hb@earthlink.net>
Message-ID: <3jlKb.21898$lo3.3675@newsread2.news.pas.earthlink.net>
Source record: 29719
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.policy,rec.radio.amateur.misc

"W3JDR" <joe@roccis.com> wrote

>
> BTW, I run ARRL Designer under Win98SE and it's fine. What OS are you
trying
> to use it with?
>

Joe,

Thanks for all the resources. At my house ARRL Designer pukes and dies on
both WIN98 (500MHz P2) and WIN-XP (2.5GHz P-4) machines.

73, Hans, K0HB

133. Re: Radio Designer software package

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 22:32:35 UTC
From: Leo <nomail@noway.com>
Message-ID: <75ojvvgjnn2j2555th54v0dn242hjfq1qa@4ax.com>
Source record: 29720
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.policy,rec.radio.amateur.misc

Hans,

ARRL's Radio Designer Version 1.5 (copyrighted 1998) claims that it runs on both Windows 9x amd NT systems, and I can confirm empirically that it operates on Win XP Pro as well - an excerpt from the included Help file is below:

" ARRL Radio Designer 1.5, a Windows (3.1, 3.11, 95 and NT)-based computer program, lets you create computerized models of audio, radio and electronic circuits so you can see how they work--and make them work better--without actually building them....."

IIRC correctly, the last version sold by the ARRL was 1.51. If you are using an older version, perhaps you can find a copy of this one somewhere? Was originally $150, should be a copy at a fraction of that out there now that it is discontinued.......

73, Leo

On Mon, 05 Jan 2004 21:23:14 GMT, "Kï¿½HB" <groupk0hb@earthlink.net> wrote:

> Several years ago ARRL marketed a WIN3.xx software package called "Radio
>Designer" which was a 'lite' copy of a commercial RF design program.
>Unfortunately the program does not run under 16- and 32-bit Windows
>environments, and the OEM is not interested in entering into further
>arrangements with ARRL.
>
> Does anyone know of a similar program in a price range (under $500)
>attractive to hams?
>
> 73, de Hans, K0HB
>
> --
> http://www.home.earthlink.net/~k0hb
>
>

134. Re: Radio Shack Quitting Parts Business?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 22:45:33 UTC
From: jgboyles@aol.com
Message-ID: <20040105174533.09719.00002246@mb-m17.aol.com>
Source record: 29721

>Besides, their parts were and always have been complete crap anyways, so not
>a great loss really...

Larry, I have been buying electronic components from Radio Shack for 40 years, and I can't say I got any that were complete c***. They all worked, isn't that what you get them for?
Radio Shack doesn't manufacture any of the parts they sell, they repackage OEM parts and resell. They cost more, and the people working there know little or nothing about the parts section. But the parts work.
As another poster pointed out, they are mighty handy for the odd part to meet some deadline, or if you are just trying to finish your latest weekend creation and need a 1N4007, and a 10k 1/4 watt in a hurry. I would never use them as the major parts supplier for anything but the smallest of projects. I would consider them getting out of the parts business a loss.
73 Gary N4AST

135. Re: Test, don't read

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 23:18:30 UTC
From: Kieren <kierenmail@hotmail.com>
Message-ID: <Xns9467EE2F63924kierenmail@195.129.110.131>
Source record: 29722

jg <jgxyz@fuse.net> wrote in news:3ff48449$0$79390$a04e5680@nnrp.fuse.net:

> Test
>

Damnit - too late, I've read it now!

136. Re: Radio Designer software package

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 23:33:01 UTC
From: K&#65533;HB <groupk0hb@earthlink.net>
Message-ID: <NumKb.21943$lo3.13497@newsread2.news.pas.earthlink.net>
Source record: 29723
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.policy,rec.radio.amateur.misc

"Leo" <nomail@noway.com> wrote

> Hans,

>

> ARRL's Radio Designer Version 1.5 (copyrighted 1998) claims that it

> runs on both Windows 9x amd NT systems, and I can confirm empirically

> that it operates on Win XP Pro as well - an excerpt from the included

> Help file is below:

Thanks Leo,

Mine is the original version 1.0 and it doesn't run in Win98 or Win-XP Pro
or Win-XP Home.

I'll see if I can root out a copy of 1.5.

73, Hans, K0HB

137. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-05 23:35:24 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <vvjt5r10gi2uc5@corp.supernews.com>
Source record: 29724
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Well, you're objecting rather strongly to an assertion that I never made. In theory if you want to get the maximum available power out of a generator you _do_ match it's output impedance. In practice if you do this with most RF final amplifiers you will reduce your final element (whether transistor or tube) to slag -- that's why modern commercial radios have SWR protection circuitry.

Please see my reply to your post starting with "Hi Leon" for a full explanation, and please actually read it before replying. Remember also that everything I say (including the attempt to match output impedances with the wall socket -- I was only 8 but that's no excuse) has been backed up by experament.

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message news:gukjvvsm5koaa28l5b2m7n9pg6ps4ua7g9@4ax.com...
> On Mon, 5 Jan 2004 08:48:35 -0800, "Tim Wescott"
> <tim@wescottnospamdesign.com> wrote:
>
> >Paul, please look over my various posts on this issue and tell me where I
> >failed to point out that you can get more power from a bare RF output stage
> >by loading it differently.
>
> Sorry, Tim. I've no idea what you mean.
> --
>
> "I expect history will be kind to me, since I intend to write it."
> -
Winston Churchill

138. Re: Test, don't read

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 00:35:19 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <btcvvd$sv2$1@newshost.mot.com>
Source record: 29725

Oh bugger! I read it too... Steve N.

"Kieren" <kierenmail@hotmail.com> wrote in message
news:Xns9467EE2F63924kierenmail@195.129.110.131...
> jg <jgxyz@fuse.net> wrote in news:3ff48449$0$79390$a04e5680@nnrp.fuse.net:
>
> > Test
> >
>
> Damnit - too late, I've read it now!
>

139. Re: APRS and signal strength..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 00:38:38 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <btd05k$t8r$1@newshost.mot.com>
Source record: 29726

APRS allows sending short messages. One way is to format the signal
strength readings as ASCII and insert them into the proper place. I can't
give information. APRS also is set up for DF bearings and signal strength
values.

Steve K;9;D:C:I

"Joel" <Joel@cyberbest.com> wrote in message
news:o61Kb.1306$eC1.485436552@twister2.starband.net...
> I was thinking my next project might be some sort of 'device' that I could
> put in the car.. Drive around and have a message sent back every few
seconds
> with GPS and signal strength measurements. It would be great for testing
> our local repeater or antenna system. I was thinking of using something
> like APRS with a A2D converter to translate the signal strength from a HT.
> Then formulate a packet with GPS and signal strength and blast it back to
a
> base station or just send the data to a laptop. I know there are similar
> commercial 'devices' for cellular and CDPD. But was wondering if any one
> knew of a device for ham radio use? Anyone know any devices that do
> something like the above or articles or schematics?
>
> Joe AG4QC
>
>

140. Re: UK availability of RF components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 01:04:31 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <zQnKb.43369$Dm.24346@edtnps89>
Source record: 29727

Behold, Philip de Cadenet signalled from keyed 4-1000A filament:

> Other than importing from RF Parts in the US or Barend in the
> Netherlands does anyone happen to know of a UK source for any of the
> following parts:
>
> Unelco/sprague type metal clad capacitors
>
> 25 ohm semi-rigid coaxial cable
>
> Philips 'Blue Spot' or similar high voltage RF trimming cap's, min 300v
> working (65pf).
>
> Thanks.

There was a couple in London, but I lost the URL's :-(

There are some very inexpensive Russian mail-order houses too.

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

141. Re: Radio Designer software package

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 01:06:29 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <pSnKb.43377$Dm.37486@edtnps89>
Source record: 29728

Behold, Kï¿½HB signalled from keyed 4-1000A filament:

> "W3JDR" <joe@roccis.com> wrote
>
>
>> BTW, I run ARRL Designer under Win98SE and it's fine. What OS are you
> trying
>> to use it with?
>>
>>
> Joe,
>
> Thanks for all the resources. At my house ARRL Designer pukes and dies
> on both WIN98 (500MHz P2) and WIN-XP (2.5GHz P-4) machines.
>
> 73, Hans, K0HB

Do you have Linux? I find some of these that won't run on my Win98,
actually run quite well in WinE from *nix :-)

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

142. Re: Best antenna (preferrably wire)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 01:07:14 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1073351235.253100@smtp-1.griffin.com>
Source record: 29729
Cross-posted to: rec.radio.amateur.antenna,alt.radio.amateur,rec.radio.amateur.homebrew,rec.radio.amateur.misc

hi there..

think i will put my pennys worth in here...

do away with the long wire altogether..you will proberly never get rid of
the rf in shack etc..due to being too high above gnd..i know i have tried..i
live in an apartment (3rd floor)..no garden or land..i have tried end feed
long wire from balcony to lamp post etc..rfi to phones stereo etc..BAD

i tried all the tricks in the book no go...
SO.. i chatted my neighboors up and have been using successfully for 4 years
now a full sized 10m-80m diople (trapped with 40m trapps.)its slung up at 3
points in the shape of a triangle each courner on someone elses
apartment..the coax feed is rolled up 6 times 6inches dia just before diople
feed point..i have hung seperate dioples for 18mhz.28mz below main diople to
help on those bands ..
i have had NO tvi/stereo i/ phone i etc atall (touch wood)..i am using full
size diople but not out straight so you could too, espically as you have a
garden!!!
and have worked much dx all over the world with 100w ssb...

so if you give up with the long wire (as i did) try this..its cheap too..and
the antenna is in about every antenna handbook..)

simon g0zen
"Cecil Moore" <Cecil.A.Moore@ieee.ONEDOT.org> wrote in message
news:3ff71b75_6@corp.newsgroups.com...
> Vaughn Combs wrote:
> > Any ideas would be GREATLY appreciated.
>
> To effectively avoid RF in the shack, the differential currents need
> to be balanced (equal in magnitude and 180 degrees out of phase). It
> is extremely difficult to do that with an inv-L. I had good luck with
> a dipole even though the shack was under one end of the dipole. I
> brought the ladder-line off at right angles for about 50 ft then
> routed ladder-line back to the shack from there so ladder-line
> parallel to the antenna was always about 50 ft away from the antenna.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 100,000 Newsgroups - 19 Different Servers! =-----

143. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 02:25:35 UTC
From: Active8 <mTHISREMOVEcolasono@earthlink.net>, invalid
Message-ID: <MPG.1a63e6b5fe72d0fb98983d@news.east.earthlink.net>
Source record: 29730
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 05 Jan 2004 21:09:56 +0000, pb@osiris1.notthisbit.co.uk
said...
> On 5 Jan 2004 08:23:16 -0800, Winfield Hill
> <Winfield_member@newsguy.com> wrote:
>
> >Paul Burridge wrote...
> >>
> >> You're right. I can't believe I posted that load of nonsense.
> >> Maybe it's a case of "late onset mad cow disease." :-|
> >>
> > OK, you are forgiven, my son. Go and sin no more.
>
> Yes, m'lud. In mitigation I'd like to plead Jack Daniels. :-)
>
LOL. That'll give you Mad Cow/Bull/sailor/you-name-it disease. Try
Long Island Iced Tea or a quality Rum like Bacardi (no Hangover for
me with that and no Wild Turkey effect :)).

--
Best Regards,
Mike

144. Re: Radio Designer software package

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 02:48:37 UTC
From: Jim Pennell <Nospam@killspam.com>
Message-ID: <9mpKb.22194$lo3.11756@newsread2.news.pas.earthlink.net>
Source record: 29731

My understanding is that the Rf Designer program from ARRL has a moderately complicated user interface and so it was not quite a popular as originally hoped.

However, the Ansoft student version is just about as capable if not more so and is a bit easier to learn.

http://www.ansoft.com/ansoftdesignersv/

==========

A long time ago I ran across a free S parameter simulator, RFSIMM99, which handles most of the things I need. It also has a monte carlo tolerance analysis which is convenient when I want to see what component tolerances are going to do to me.

The company that originally made this program seem to not be there any more, or at least my link to their website does not work, but the program can be found on quite a lot of websites.

Jim Pennell N6BIU

145. EVERGREEN, COLORADO Hams

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 03:23:39 UTC
From: secondhandmarklin@yahoo.com
Message-ID: <174d01b4.0401051923.46eddd40@posting.google.com>
Source record: 29732

If you live in or near Evergreen, Colorado, this will be of interest to you. The initial meeting of Evergreen hams is tentatively set for Tuesday January 13th at the Evergreen Sports Grill. Contact Roger k0yy at k0yy@arrl.net for more information or give him a call on the 146.07/67 repeater.

There is nothing to join and there are no dues...just show up.

See the letter below.

> Howdy all,
>
> A number of area hams have met on the air and mentioned that they would
> enjoy getting together with local hams sometime for a cup of coffee or lunch
> or dinner. Several folks mentioned that the Sports Bar and Grill is pretty
> centrally located and easy to find.
>
> So, why doesn't everyone "reply to all" and propose a time and day. Early
> evening during the week or a Saturday morning may be the best time. There is
> never a good time for everyone, so we'll just pick the "best" time. If there
> is sufficient interest we could do it again and vary the time and date so
> more folks can attend.
>
> It's interesting, when you do a zip code search for our area on QRZ; there
> are more than 150 hams in the Evergreen, Conifer, and Kittredge area. There
> are lots of hams up here living in all the various nooks and valleys.
>
> Do you know a local ham that would enjoy attending? Invite them and pass
> along their email address so we can add them to the broadcast group.
>
> I almost always monitor 146.67, the Castle Rock System up on Squaw Mountain.

> Drop by and say hello or list a get together preference.
>
> Happy 2004 and 73,
>
> Roger K0YY and Marilyn KB0LJW Krautkremer
> Evergreen, CO

PLEASE REPLY TO: k0yy@arrl.net

146. Re: Best antenna (preferrably wire)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 04:07:12 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <btdc9f$9e8$1@titan.btinternet.com>
Source record: 29733
Cross-posted to: rec.radio.amateur.antenna,alt.radio.amateur,rec.radio.amateur.homebrew,rec.radio.amateur.misc

Always begin with the most simple of antennas. Otherwise you'll have
nothing to make comparisons with. You will have no base or foundation
standard.

Spend a couple of hours stringing up a 150 feet inverted-L and use it on all
bands for a few weeks. That is if you can wrench youself away from it.

Reg, G4FGQ

147. Re: UK availability of RF components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 08:26:30 UTC
From: Philip de Cadenet <Philstheboss@thebbc.fslife.co.uk>
Message-ID: <2f6QHmU2En+$EwCx@philstheboss.freeserve.co.uk>
Source record: 29734

Hi Gregg,

>> does anyone happen to know of a UK source for any of the
>> following parts:
>>
>> Unelco/sprague type metal clad capacitors
>>
>> 25 ohm semi-rigid coaxial cable
>>
>> Philips 'Blue Spot' or similar high voltage RF trimming cap's, min 300v
>> working (65pf).

>There are some very inexpensive Russian mail-order houses too.
>
I'm aware of one or two Russian valve vendors but have not noticed any
component dealers.

If you can pass a URL or three it would be appreciated.

We speak Russian!
--
Philip de Cadenet G4ZOW
Transmitters 'R' Us
http://www.transmittersrus.com

148. Russian transistor cross

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 11:24:12 UTC
From: rob34 <rob34@infinet.com>
Message-ID: <vvl6n0211d4465@corp.supernews.com>
Source record: 29735

Does anybody know of a site where I can cross russian transistor numbers over to american? I can probably guess at a replacement since they are small signal transistors. The transistor numbers are KT315 and KT361.
Thanks, Rob

149. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 11:43:05 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <jb5lvv8ogqqsl0qcbmeju46m1geh08hc2q@4ax.com>
Source record: 29736
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 5 Jan 2004 15:35:24 -0800, "Tim Wescott"
<tim@wescottnospamdesign.com> wrote:

>Well, you're objecting rather strongly to an assertion that I never made.
>In theory if you want to get the maximum available power out of a generator
>you _do_ match it's output impedance. In practice if you do this with most
>RF final amplifiers you will reduce your final element (whether transistor
>or tube) to slag -- that's why modern commercial radios have SWR protection
>circuitry.
>
>Please see my reply to your post starting with "Hi Leon" for a full
>explanation, and please actually read it before replying. Remember also
>that everything I say (including the attempt to match output impedances with
>the wall socket -- I was only 8 but that's no excuse) has been backed up by
>experament.

Okay, so if I understand you correctly you're saying that whilst you
should try to match impedances in Class A; it's inapplicable in Class
C? It's just an operation class distinction?
--

"I expect history will be kind to me, since I intend to write it."
- Winston Churchill

150. Re: Radio Designer software package

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 12:32:21 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <pVxKb.22829$R_4.16649@nwrddc03.gnilink.net>
Source record: 29737

Hans,
I found that it crashes with certain video cards. The reason I originally took it off my Win98SE computer is that it would just lock up with a scrambled video screen at startup. Some time later I upgraded my video card and on a lark I reinstalled the program. It's been working fine ever since.

Joe
> >
> > Thanks for all the resources. At my house ARRL Designer pukes and dies
> > on both WIN98 (500MHz P2) and WIN-XP (2.5GHz P-4) machines.
> >
> > 73, Hans, K0HB
>

151. Re: what lead-free solder do you use, and where can I buy it?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 14:14:23 UTC
From: Mike Coslo <mjc5@psu.edu>
Message-ID: <3FFAC2BF.8070801@psu.edu>
Source record: 29738

JGBOYLES wrote:
> Henry wrote:
>
>>In my production engineering job I would routinely hold
>>my breath and stick my head in over the solder wave in the
>>wave solder machine.
>
>
> Hi Henry, that was not the best idea in the world, but I have been soldering
> for over 40 years, and have never experienced any health symptoms like you
> describe. I solder a lot, both at work and at home as a ham. I'm 57 and never
> had health problems. I think you should look for other sources for your
> apparent health problems.

Henry, your ventilation on the wave solder machine is all wrong! If you need to look into it, therre is no way that the vent air pull should be past your face. That thing should have a side plenum vent. the fouled air will then not make it to you when you look in it.

> As has been stated, the fumes are from the flux, and I have inhaled a bunch
> of it:-). The lead portion can only hurt you if it is ingested, not sniffed.
> I am sorry you had health problems, but it may not be for the reason you

If rosin based fumes are bad for you, than I get a double whammy, since I make telescopes too, and the polishing laps are made out of pine pitch. Between that and the soldering rosin, my garage always smells like pine. Yummy!

- Mike -

152. Re: Radio Designer software package

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 14:18:31 UTC
From: Wes Stewart <n7ws@_arrl.net>
Message-ID: <4mglvvo5k6i0g3inl1u3ce54di9uibebcu@4ax.com>
Source record: 29739

On Mon, 05 Jan 2004 23:33:01 GMT, "Kï¿½HB" <groupk0hb@earthlink.net>
wrote:

|
|
|"Leo" <nomail@noway.com> wrote
|
|> Hans,
|
|>
|
|> ARRL's Radio Designer Version 1.5 (copyrighted 1998) claims that it
|
|> runs on both Windows 9x amd NT systems, and I can confirm empirically
|
|> that it operates on Win XP Pro as well - an excerpt from the included
|
|> Help file is below:
|
|Thanks Leo,
|
|Mine is the original version 1.0 and it doesn't run in Win98 or Win-XP Pro
|or Win-XP Home.
|
|I'll see if I can root out a copy of 1.5.
|
|73, Hans, K0HB

I tried figuring out your email address to write directly but I
haven't heard back from you. I have a completely legal copy with a
manual that is surplus to me. I have two copies actually, one for me
and one for you, for any reasonable offer.

Wes n7ws at arrl.net

ps. It runs fine on XP Pro and 98SE. Just can't use long file names.

153. Re: Radio Designer software package

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 14:28:40 UTC
From: Wes Stewart <n7ws@_arrl.net>
Message-ID: <90hlvvccvgu6bgdha5shu9v0s9mp3i50u8@4ax.com>
Source record: 29740

On Tue, 06 Jan 2004 02:48:37 GMT, "Jim Pennell" <Nospam@killspam.com>
wrote:

| My understanding is that the Rf Designer program from ARRL has a
|moderately complicated user interface and so it was not quite a popular as
|originally hoped.
|
| However, the Ansoft student version is just about as capable if not more
|so and is a bit easier to learn.

My experience is different. Serenade is much more powerful, however,
I find the learning curve much steeper.

They all have the same roots however, and Serenade can use circuit
files (net lists) generated in ARD.

Wes

154. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 17:41:34 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <vvlsqfjj4kdbe2@corp.supernews.com>
Source record: 29741
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Sorta. The distinction has more to do with whether you're following your output stage with something that needs to see a specific impedance (like a filter in a receiver), and whether you're building a power stage. I couldn't think of a good generalization, so I listed some examples below. Then I realized that it really boils down to the fact that the impedance matching rule is a tool for predicing circuit behavior, not a guideline for life.

RF stage in a receiver: you want to match the output impedance to the following filter or mixer for maximum power transfer and good filter/mixer performance. You usually _don't_ want to match input impedance because the best power transfer impedance is not the same as the best noise figure impedance.

IF preamplifier (between a passive mixer and a crystal or mechanical filter): Match both input and output impedances, both to maximize power transfer and to get good performance from the attached stages.

1st buffer in a VFO: _don't_ match impedances with the oscillator! You want to purposely refrain from taking much power from the oscillator tank, because a heavily loaded oscillator is a poor oscillator. You probably _do_ want to match impedances on the output so the following stage won't need so much gain.

1-transistor transmitter: It's an oscillator, but a power stage too. Load it (match impedances) enough to get useful power on the antenna, but not so much that you screw up performance.

Power output (usually): match impedances to the input, don't match impedance to the output (for all the reasons given earlier). This applies to any class of stage: A, B, AB, C, D and E (yes, there are class D and E stages).

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message news:jb5lvv8ogqqsl0qcbmeju46m1geh08hc2q@4ax.com...
> On Mon, 5 Jan 2004 15:35:24 -0800, "Tim Wescott"
> <tim@wescottnospamdesign.com> wrote:
>
> >Well, you're objecting rather strongly to an assertion that I never made.
> >In theory if you want to get the maximum available power out of a generator
> >you _do_ match it's output impedance. In practice if you do this with most
> >RF final amplifiers you will reduce your final element (whether transistor
> >or tube) to slag -- that's why modern commercial radios have SWR

protection
> >circuitry.
> >
> >Please see my reply to your post starting with "Hi Leon" for a full
> >explanation, and please actually read it before replying. Remember also
> >that everything I say (including the attempt to match output impedances
with
> >the wall socket -- I was only 8 but that's no excuse) has been backed up
by
> >experament.
>
> Okay, so if I understand you correctly you're saying that whilst you
> should try to match impedances in Class A; it's inapplicable in Class
> C? It's just an operation class distinction?
> --
>
> "I expect history will be kind to me, since I intend to write it."
> -
Winston Churchill

155. Re: Radio Designer software package

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 20:01:49 UTC
From: Phil Kane <Phil.Kane@nov.shmovz.ka.pop>
Message-ID: <xnfcneeyarg.hr2uam6.pminews@netnews.comcast.net>
Source record: 29742
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

On Mon, 05 Jan 2004 22:12:15 GMT, K&#65533;HB wrote:

>Thanks for all the resources. At my house ARRL Designer pukes and dies on
>both WIN98 (500MHz P2) and WIN-XP (2.5GHz P-4) machines.

I hear you. I have several older (DOS) comm programs which puke on
faster machines - good ol' PCPLUS for one. That's why my 24/7 packet
circuit (for the local ARES/RACES group) runs on a separate (166
P1) machine - it slows down my Athlon XP 2000 and my P2 machines.

I'm trying to find a DOS emulator for Linux to see if I can run two
circuits at once now...,..

--
73 de K2ASP - Phil Kane

From a Clearing in the Silicon Forest
Beaverton (Washington County) Oregon

156. Re: Radio Designer software package

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 20:13:16 UTC
From: dplatt@radagast.org
Message-ID: <vvm5mst9jslfe6@corp.supernews.com>
Source record: 29743
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

> I hear you. I have several older (DOS) comm programs which puke on
> faster machines - good ol' PCPLUS for one. That's why my 24/7 packet
> circuit (for the local ARES/RACES group) runs on a separate (166
> P1) machine - it slows down my Athlon XP 2000 and my P2 machines.
>
> I'm trying to find a DOS emulator for Linux to see if I can run two
> circuits at once now...,..

A version of F6FBB is available which runs native on Linux, using the
Linux AX.25 networking support code. There ought to be no problem
running multiple TNCs (either real ones in KISS mode on serial ports,
or soundmodem versions), doing digipeating, etc. on Linux.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

157. Re: Radio Designer software package

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 20:52:46 UTC
From: groupk0hb@earthlink.net
Message-ID: <5ee63311.0401061252.19a00111@posting.google.com>
Source record: 29744

Wes Stewart <n7ws@_arrl.net> wrote

> I have a completely legal copy with a
> manual that is surplus to me. I have two
> copies actually, one for me
> and one for you, for any reasonable offer.

Thanks for the offer, Wes. I'll file it for 'maybe later'. Right now I have the Antac Designer SV downloaded and it looks like a clone of the ARRL Designer, only 10 years newer.

73, Hans, K0HB

158. superhet alignment ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 21:24:19 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <vvm9s63rd674c3@corp.supernews.com>
Source record: 29745
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.boatanchors

I think it was after last summer that I saw a published magazine article where someone had come with a new way, at least for me, to align a radio so that the dial would be calibrated throughout its range. IIRC he set the trimmer, padder and other adjustments just once or maybe twice. In the past I have set and reset all adjustments several times, each time cutting the error in half until I'm satisfied or worn out.. If anyone recalls the article I sure would appreciate knowing. It seems like it may have been Monitoring Times or Popular Communications, neither of which I subscribe to, but it could have been elsewhere, because my memeory isn't as good as it was because I was taking Lipitor, and have now quit.
tnx
hank wd5jfr

159. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 22:16:30 UTC
From: James Fenech <james.fenech@xxxnec.com.au>
Message-ID: <1073427388.55053@proxy.nec.com.au>
Source record: 29746

Hi All,

thanks for the many responses. My use of this VCO if for a homebrew spectrum analyser, 0-100MHz with a 140MHz first IF. This sort of rules out doing it in ranges - maybe?

I'm only an RF beginer, and spicing the circuit gives me "some" confidence that it may work, but I understand that spice may be quite a bit off the mark with parasitics and all.

The idea of reducing the RF voltage across the part is a good one, but how do I do it? I am actually using two in series (back to back) but 20 volts peak seems a bit much.

I have the ARRL handbook (1997 or so) but this doesn't have much in the way of theory. Is there any other reference anyone can recommend?

I could just build it and see if it works, but I wouldn't be able to test much except measure the operating frequency.

James.

"Tom Bruhns" <k7itm@aol.com> wrote in message
news:3200347.0401041812.5c7ebb9d@posting.google.com...
> Yes, the RF generally does cause nearly instantaneous voltage changes,
> and therefore capacitance changes, across the diode. Spice should
> handle this properly. You need to lower that RF voltage! In
> addition, the average capacitance will depend on the amplitude of the
> RF because of the nonlinear nature of the capacitance versus voltage,
> so it's important to keep the RF level reasonably constant, for
> stability. It's fairly common in covering a wide range, especially if
> you also want low phase noise, to break it up into subranges which
> might be selected with switching or PIN diodes. Of course, it's also
> critical to keep the control voltage "quiet" because at 10MHz/volt or
> so, a millivolt will give you 10kHz of frequency deviation.
>
> If you look up other uses for varactor diodes, you'll find that the
> characteristic you are asking about is used to make efficient
> frequency multipliers, and even mixers and amplifiers. (Search for
> "parametric amplifier.")
>
> Cheers,
> Tom
>
>
> In message 1073259777.711769@proxy.nec.com.au, James French wrote:

> >Hello,
> >
> >I have a general question regarding tuning diodes:
> >Does the oscillation voltage alter their capacitance, or is
> capacitance a
> >slow changing value - like resistance and PIN diodes?
> >
> >The reason I ask is that I am spicing (simulation) a VCO I wish to
> build
> >(wide range 140-240MHz) and get an oscillation voltage of 20 volts
> peak
> >(maybe the Q is too high). This high oscillation voltage would easily
> swamp
> >the tuning voltage, 3-15 volts, and forward bias the diode itself.
> >
> >If anyone wishs to reply directly they must remove the "xxx" from the
> return
> >address or write to:
> >james dot fenech at nec dot com dot au
> >
> >Thanks,
> >James.

160. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 22:25:55 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <TBGKb.1668$eF2.1558@nwrdny02.gnilink.net>
Source record: 29647

I assume your VCO has to tune 140-240MHz?? Email me directly and I'll give
you a circuit that will easily do the job. (joe@roccis.com)

Joe
W3JDR

"James Fenech" <james.fenech@xxxnec.com.au> wrote in message
news:1073427388.55053@proxy.nec.com.au...
> Hi All,
>
> thanks for the many responses. My use of this VCO if for a homebrew
spectrum
> analyser, 0-100MHz with a 140MHz first IF. This sort of rules out doing it
> in ranges - maybe?
>
> I'm only an RF beginer, and spicing the circuit gives me "some" confidence
> that it may work, but I understand that spice may be quite a bit off the
> mark with parasitics and all.
>
> The idea of reducing the RF voltage across the part is a good one, but how
> do I do it? I am actually using two in series (back to back) but 20 volts
> peak seems a bit much.
>
> I have the ARRL handbook (1997 or so) but this doesn't have much in the
way
> of theory. Is there any other reference anyone can recommend?
>
> I could just build it and see if it works, but I wouldn't be able to test
> much except measure the operating frequency.
>
> James.
>
> "Tom Bruhns" <k7itm@aol.com> wrote in message
> news:3200347.0401041812.5c7ebb9d@posting.google.com...
> > Yes, the RF generally does cause nearly instantaneous voltage changes,
> > and therefore capacitance changes, across the diode. Spice should
> > handle this properly. You need to lower that RF voltage! In
> > addition, the average capacitance will depend on the amplitude of the
> > RF because of the nonlinear nature of the capacitance versus voltage,
> > so it's important to keep the RF level reasonably constant, for
> > stability. It's fairly common in covering a wide range, especially if
> > you also want low phase noise, to break it up into subranges which
> > might be selected with switching or PIN diodes. Of course, it's also
> > critical to keep the control voltage "quiet" because at 10MHz/volt or
> > so, a millivolt will give you 10kHz of frequency deviation.

> >
> > If you look up other uses for varactor diodes, you'll find that the
> > characteristic you are asking about is used to make efficient
> > frequency multipliers, and even mixers and amplifiers. (Search for
> > "parametric amplifier.")
> >
> > Cheers,
> > Tom
> >
> >
> > In message 1073259777.711769@proxy.nec.com.au, James French wrote:
> > >Hello,
> > >
> > >I have a general question regarding tuning diodes:
> > >Does the oscillation voltage alter their capacitance, or is
> > capacitance a
> > >slow changing value - like resistance and PIN diodes?
> > >
> > >The reason I ask is that I am spicing (simulation) a VCO I wish to
> > build
> > >(wide range 140-240MHz) and get an oscillation voltage of 20 volts
> > peak
> > >(maybe the Q is too high). This high oscillation voltage would easily
> > swamp
> > >the tuning voltage, 3-15 volts, and forward bias the diode itself.
> > >
> > >If anyone wishs to reply directly they must remove the "xxx" from the
> > return
> > >address or write to:
> > >james dot fenech at nec dot com dot au
> > >
> > >Thanks,
> > >James.
>
>

161. Re: Tuna Tin (II) output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 22:31:50 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <l8dmvvkssbda5ml531o1enm3dbso7h7cvo@4ax.com>
Source record: 29648
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 6 Jan 2004 09:41:34 -0800, "Tim Wescott"
<tim@wescottnospamdesign.com> wrote:

>Sorta. The distinction has more to do with whether you're following your
>output stage with something that needs to see a specific impedance (like a
>filter in a receiver), and whether you're building a power stage. I
>couldn't think of a good generalization, so I listed some examples below.
>Then I realized that it really boils down to the fact that the impedance
>matching rule is a tool for predicing circuit behavior, not a guideline for
>life.
>
>RF stage in a receiver: you want to match the output impedance to the
>following filter or mixer for maximum power transfer and good filter/mixer
>performance. You usually _don't_ want to match input impedance because the
>best power transfer impedance is not the same as the best noise figure
>impedance.
>
>IF preamplifier (between a passive mixer and a crystal or mechanical
>filter): Match both input and output impedances, both to maximize power
>transfer and to get good performance from the attached stages.
>
>1st buffer in a VFO: _don't_ match impedances with the oscillator! You want
>to purposely refrain from taking much power from the oscillator tank,
>because a heavily loaded oscillator is a poor oscillator. You probably _do_
>want to match impedances on the output so the following stage won't need so
>much gain.
>
>1-transistor transmitter: It's an oscillator, but a power stage too. Load
>it (match impedances) enough to get useful power on the antenna, but not so
>much that you screw up performance.
>
>Power output (usually): match impedances to the input, don't match impedance
>to the output (for all the reasons given earlier). This applies to any
>class of stage: A, B, AB, C, D and E (yes, there are class D and E stages).

And even "S" IIRC!
Thanks, Tim. I'm going to have to digest this lot. Might take a
while...
--

"I expect history will be kind to me, since I intend to write it."
- Winston Churchill

162. Re: superhet alignment ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 22:45:51 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <3ffb3aa0$0$10794$cc9e4d1f@news.dial.pipex.com>
Source record: 29649
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.boatanchors

Henry Kolesnik wrote:
> I think it was after last summer that I saw a published magazine article
> where someone had come with a new way, at least for me, to align a radio so
> that the dial would be calibrated throughout its range. IIRC he set the
> trimmer, padder and other adjustments just once or maybe twice. In the past
> I have set and reset all adjustments several times, each time cutting the
> error in half until I'm satisfied or worn out.. If anyone recalls the
> article I sure would appreciate knowing. It seems like it may have been
> Monitoring Times or Popular Communications, neither of which I subscribe to,
> but it could have been elsewhere, because my memeory isn't as good as it was
> because I was taking Lipitor, and have now quit.
> tnx
> hank wd5jfr

I think it was Electronics Weekly.

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

163. Misc transformers/supplies offered

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 22:56:59 UTC
From: Roy Brock <roybro@sccoast.net>
Message-ID: <btfeqb$768v$3@news3.infoave.net>
Source record: 29650

Back several years ago, I picked up a bunch of used transformers. No time for the projects now, and can't bring myself to just throw them away.

Most are low voltage, high current (>8A), but I also have 2 Advance Transformer catalog # 09-141-21. These are 208/240 volt primary, 1900 volt secondary, 3.0 kVA units. They were used in ceramic capacitor breakdown testing (voltage doubled to produce 4100 VDC).

I have another that has dual 120-volt primaries and two secondaries: one 450VAC@ .54A RMS and one at 1825VAC@ .44A RMS.

I also have some Power-One open-frame DC supplies, regulated and unregulated. Email me with what you are looking for, and I'll let you know if I have it....Roy Brock

164. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 23:26:59 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <btfgb9$r9a$1@newshost.mot.com>
Source record: 29651
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Motorola's first solid state 450 car phone, the MK, used a 50 W 150 MHz PA followed by a varactor tripler for 10W at 450. Varactor triplers are tricky however.

Steve K;9;d/c/i

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message news:jshhvvs282ksrfof1c6l93j3l11c2j3mm7@4ax.com...
> On Sun, 4 Jan 2004 16:22:32 -0800, "Tim Wescott"
> <tim@wescottnospamdesign.com> wrote:
>
> >The varactor capacitance change is instantaneous -- think of a capacitor
> >who's plate spacing is dependent on it's voltage. This is why varactors
are
> >used for frequency multiplication -- that capacitance change "squeezes"
the
> >pulse to generate lots of harmonics.
>
> Rubbish. Varactors are not used for freqency mulitplication. They are
> freequenty used in VXCOs for modulating (or otherwise varying) the
> oscillator output frequency by means of applying a DC bias voltage
> which alters the capacitance of the PN junction.
> --
>
> "I expect history will be kind to me, since I intend to write it."
> -
Winston Churchill

165. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 23:41:31 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vvmhtiea3qhuf5@corp.supernews.com>
Source record: 29652

I highly recommend _Experimental Methods in RF Design_, by Hayward, Cambell, and Larkin. It's published by the ARRL and available from them and numerous other sources. Besides theory and a lot of real, practical, tested circuits and projects, it includes simple test equipment you can build yourself.

Roy Lewallen, W7EL

James Fenech wrote:
> . . .
> I have the ARRL handbook (1997 or so) but this doesn't have much in the way
> of theory. Is there any other reference anyone can recommend?
> . . .

166. Need Info on 1 inch CRT

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-06 23:55:52 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <btfi1dfq1@newshost.mot.com>
Source record: 29655

I have a 3/4 or perhaps 1" CRT. Possibly from a camcorder, don't know. Haven't been able to find anything. The wearable computer sites may be a possibility, but I didn't see any leads so far. I want to use it for a portable DF system.
The number is unreadable. It has yellow ink printing not etched. What could be the manufacturer: an "N" followed by what looks like a backwards somewhat stylized "B" What there is of a number looks like R2 then possibly a 1 and most likely a 5. So it sort-of looks like R215, but much of the ink is gone. Standard 9 pin. Pins 4-5 must be the filament since they show 4 ohms cold. about 1" dia & 2" long. How about some ideas???

--
Steve N, K,9,d, c. i at arrl net will reach me, no commas, of course.

167. Re: Radio Designer software package

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 00:00:51 UTC
From: Jim Hampton <aa2qa@frontiernet.net>
Message-ID: <T_HKb.35318$wU7.17575@news01.roc.ny>
Source record: 29653
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

Phil,

Don't know if it will help, but how about this:
http://www.dosemu.org/
I have no idea if it will help or not; I'm thinking of putting Linux in one of the boxes. A Google search of 'DOS emulators for Linux' yielded a ton of hits, but you've likely already researched them.

73 from Rochester, NY
Jim AA2QA

"Phil Kane" <Phil.Kane@nov.shmovz.ka.pop> wrote in message
news:xnfcneeyarg.hr2uam6.pminews@netnews.comcast.net...
> On Mon, 05 Jan 2004 22:12:15 GMT, K&#65533;HB wrote:
>
> >Thanks for all the resources. At my house ARRL Designer pukes and dies
on
> >both WIN98 (500MHz P2) and WIN-XP (2.5GHz P-4) machines.
>
> I hear you. I have several older (DOS) comm programs which puke on
> faster machines - good ol' PCPLUS for one. That's why my 24/7 packet
> circuit (for the local ARES/RACES group) runs on a separate (166
> P1) machine - it slows down my Athlon XP 2000 and my P2 machines.
>
> I'm trying to find a DOS emulator for Linux to see if I can run two
> circuits at once now...,..
>
> --
> 73 de K2ASP - Phil Kane
>
> From a Clearing in the Silicon Forest
> Beaverton (Washington County) Oregon
>
>

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.558 / Virus Database: 350 - Release Date: 1/2/04

168. Re: 12 v timer project ... need ideas!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 00:07:15 UTC
From: Harvey Babb <WB5MCT@arrl.net>
Message-ID: <3FFB4DB3.9010609@arrl.net>
Source record: 29654

I've got one of these that runs the motor one way for "on" and the other way for "off". Add a microswitch that follows the valve position and you've got it! The timer in question runs off 2 "C" cells and is programmable for "time on" and "duration". Made by Melnor (sp?), large distributor of lawn/garden accessories. Probably available from others.

Much Luck!

THE-RFI-EMI-GUY wrote:

> Check the hardware store for electronic watering timers. There are some
> that work from AA batteries. Hack it open, replace the motor with a
> relay. You will probably need a latching relay arrangement or be
> otherwise creative as the timer runs the motor for a few seconds open
> and closed.
>
> J999w wrote:
>
>> I'm looking for ideas for a stand alone timer to turn on and off a remote
>> shortwave or BCB receiver and tape recorder. No AC mains available.
>> Switching
>> requirements no more than about 5 amps.
>> Haven't had much luck scouring the web.
>>
>> Ideas?
>>
>> John WB9UAI
>>
>>
>>
>>
>
>

169. Re: Need Info on 1 inch CRT

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 00:24:11 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <3FFB51A4.6BB59D5D@earthlink.net>
Source record: 29656

Steve Nosko wrote:
>
> I have a 3/4 or perhaps 1" CRT. Possibly from a camcorder, don't know.
> Haven't been able to find anything. The wearable computer sites may be a
> possibility, but I didn't see any leads so far. I want to use it for a
> portable DF system.
> The number is unreadable. It has yellow ink printing not etched. What
> could be the manufacturer: an "N" followed by what looks like a backwards
> somewhat stylized "B" What there is of a number looks like R2 then possibly
> a 1 and most likely a 5. So it sort-of looks like R215, but much of the ink
> is gone. Standard 9 pin. Pins 4-5 must be the filament since they show 4
> ohms cold. about 1" dia & 2" long. How about some ideas???
>
> --
> Steve N, K,9,d, c. i at arrl net will reach me, no commas, of course.

If it is from a camcorder, it should have a deflection yoke. How
about some pictures? It might trigger someone to recognize it.

Suitable newsgroups are:
news:alt.binaries.schematics.electronic
news:alt.binaries.pictures.radio

Also, you can lay small parts on a flatbed scanner, cover them with a
sheet of white paper, and put a light over the paper to reduce shadows.
Yo can get good close-ups this way. I usually scan at 600 DPI, and
reduce image size to what I want. I would post a picture, an ask the
guys on news:sci.electronics.repair if anyone there can identify it.

--
We now return you to our normally scheduled programming.

Take a look at this little cutie! ;-)
http://home.earthlink.net/~mike.terrell/photos.html

Michael A. Terrell
Central Florida

170. Re: superhet alignment ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 01:13:08 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <btfmf4$8p0$1@hercules.btinternet.com>
Source record: 29657
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.boatanchors

For alignment of superhet RF/Local Osc receivers you may find program
OSCTRACK useful. Download and run in a few seconds from website below.

Exact L and C, trimmer and padder values are computed for a given waveband.
--
....
Regards from Reg, G4FGQ
For Free Radio Design Software go to
http://www.btinternet.com/~g4fgq.regp
....

171. Re: Radio Designer software package

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 01:32:44 UTC
From: bg998@FreeNet.Carleton.CA
Message-ID: <btfnjs$d03$1@freenet9.carleton.ca>
Source record: 29658

"W3JDR" (joe@roccis.com) writes:
> The company that made ARRL Designer (Compact Software) was bought by Ansoft.
> They have greatly enhanced the capability, and the current offering is
> available as a free student version here:
> http://www.ansoft.com/ansoftdesignersv/

The download is *very* large. For folks on a dial-up connection, it is
almost out the question. Is is available on a CD somewhere??
Thanks.
... Martin VE3OAT

172. Re: Radio Designer software package

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 02:26:37 UTC
From: Jim Pennell <Nospam@killspam.com>
Message-ID: <x7KKb.23663$lo3.1463@newsread2.news.pas.earthlink.net>
Source record: 29659

----- Original Message -----
"Wes Stewart" Wrote:

> My experience is different. Serenade is much more powerful,
> however, I find the learning curve much steeper.
>
> They all have the same roots however, and Serenade can use
> circuit files (net lists) generated in ARD.
>
>

Thanks for the correction, Wes. I was going on second hand information.

I have to upgrade my computer and then I will be able to run Serenade.....

Jim Pennell
N6BIU

173. Re: UK availability of RF components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 03:32:33 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <l5LKb.86681$6b2.69825@edtnps84>
Source record: 29660

Behold, Philip de Cadenet signalled from keyed 4-1000A filament:

> Hi Gregg,
>
>>> does anyone happen to know of a UK source for any of the following
>>> parts:
>>>
>>> Unelco/sprague type metal clad capacitors
>>>
>>> 25 ohm semi-rigid coaxial cable
>>>
>>> Philips 'Blue Spot' or similar high voltage RF trimming cap's, min
>>> 300v working (65pf).
>
>>There are some very inexpensive Russian mail-order houses too.
>>
> I'm aware of one or two Russian valve vendors but have not noticed any
> component dealers.
>
> If you can pass a URL or three it would be appreciated.
>
> We speak Russian!

KW Tubes was one of them, http://kwtubes.com/

Lithuanian, not Russian - silly me ;-)

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

174. Re: superhet alignment ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 05:30:15 UTC
From: Capoot <rlcap@xprt.net>
Message-ID: <vvn6btl7u5on89@corp.supernews.com>
Source record: 29661
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.boatanchors

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:vvm9s63rd674c3@corp.supernews.com...
> I think it was after last summer that I saw a published magazine article
> where someone had come with a new way, at least for me, to align a radio
so
> that the dial would be calibrated throughout its range. IIRC he set the
> trimmer, padder and other adjustments just once or maybe twice. In the
past
> I have set and reset all adjustments several times, each time cutting the
> error in half until I'm satisfied or worn out.. If anyone recalls the
> article I sure would appreciate knowing. It seems like it may have been
> Monitoring Times or Popular Communications, neither of which I subscribe
to,
> but it could have been elsewhere, because my memeory isn't as good as it
was
> because I was taking Lipitor, and have now quit.
> tnx
> hank wd5jfr

Hank,
I came across this article on superhet alignment today:
http://www.siliconchip.com.au/cms/A_30298/article.html
Ray

175. Re: 12 v timer project ... need ideas!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 05:43:28 UTC
From: **THE-RFI-EMI-GUY** <NoSpamBogus@NoSpamBogus.com>
Message-ID: <3FFB9C80.5020507@NoSpamBogus.com>
Source record: 29662

Thats a good idea. Also consider if the timer reverses the motor it could also control a polarity sensitive latching relay or a common dual coil latching relay with steering diodes.

I have used Melnors in the past for watering, they tend to short out internally due to moisture. I kept Melnor busy warranteeing those things. Of course for this purpose it would be ideal. I had ones with a 7 day schedule. Pretty neat...when they worked!

Joe

Harvey Babb wrote:

> I've got one of these that runs the motor one way for "on" and the
> other way for "off". Add a microswitch that follows the valve position
> and you've got it! The timer in question runs off 2 "C" cells and is
> programmable for "time on" and "duration". Made by Melnor (sp?), large
> distributor of lawn/garden accessories. Probably available from others.
>
> Much Luck!
>
>
> **THE-RFI-EMI-GUY** wrote:
>
>> Check the hardware store for electronic watering timers. There are
>> some that work from AA batteries. Hack it open, replace the motor
>> with a relay. You will probably need a latching relay arrangement or
>> be otherwise creative as the timer runs the motor for a few seconds
>> open and closed.
>>
>> J999w wrote:
>>
>>> I'm looking for ideas for a stand alone timer to turn on and off a
>>> remote
>>> shortwave or BCB receiver and tape recorder. No AC mains available.
>>> Switching
>>> requirements no more than about 5 amps.
>>> Haven't had much luck scouring the web.
>>>
>>> Ideas?
>>>
>>> John WB9UAI
>>>
>>>
>>>

>>>
>>
>>
>

--
Joe Leikhim K4SAT

"Jazz is not dead. It just smells funny." -F.Z.

176. FA:RA Dr,RF SW +more

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 14:06:53 UTC
From: Heytubeguy <heytubeguy@worldnet.att.net>
Message-ID: <1oUKb.3157$Ub6.95736@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29663

See at :

http://cgi6.ebay.com/ws/eBayISAPI.dll?ViewSellersOtherItems&userid=heytubeguy&completed=0&sort=3&since=-1&include=0&page=1&rows=25

Tnx Joe

177. Re: superhet alignment ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 15:51:52 UTC
From: janaeanddoug@netzero.net
Message-ID: <360a820d.0401070751.1f2bfacc@posting.google.com>
Source record: 29664
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.boatanchors

"Capoot" <rlcap@xprt.net> wrote in message news:<vvn6btl7u5on89@corp.supernews.com>...
> "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
> news:vvm9s63rd674c3@corp.supernews.com...
> > I think it was after last summer that I saw a published magazine article
> > where someone had come with a new way, at least for me, to align a radio
> so
> > that the dial would be calibrated throughout its range. IIRC he set the
> > trimmer, padder and other adjustments just once or maybe twice. In the
> past
> > I have set and reset all adjustments several times, each time cutting the
> > error in half until I'm satisfied or worn out.. If anyone recalls the
> > article I sure would appreciate knowing. It seems like it may have been
> > Monitoring Times or Popular Communications, neither of which I subscribe
> to,
> > but it could have been elsewhere, because my memeory isn't as good as it
> was
> > because I was taking Lipitor, and have now quit.
> > tnx
> > hank wd5jfr
>
> Hank,
> I came across this article on superhet alignment today:
> http://www.siliconchip.com.au/cms/A_30298/article.html
> Ray

Once you get it as close as you can, you can bend the plates of the
air variable. This will align it in little band segments. Remember,
the slug will align the low end of the band, then you can use the
trimmer to touch up the high end, without much effect on the low end.
Also, on older equipment, Ive found that sometimes you cant get enough
induction out of the slug/coil. I think the slugs lose density over
time, so you may end up rewinding the coil with a few more turns of
wire.

178. need household-substance anti-static coating for plastic meter cover

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 17:44:16 UTC
From: alanh_27@yahoo.com
Message-ID: <1e3670a7.0401070944.7f5191e7@posting.google.com>
Source record: 29665
Cross-posted to: sci.chem.coatings,sci.physics,sci.electronics.repair,rec.radio.amateur.homebrew

situation is a plastic meter cover, on a large process control board, onboard a tanker ship, deployed. The meter movement underneath experiences wild meter-swings, associated with finger contact, presumed to be due to static electricity.

we have a decent collection of household-type substances, also a small collection of industrial substances.

we have infrequent but regular access to Navy Exchanges, which are basically transplanted K-mart sort of outlet. Carries common american brand-name stuffs.

The official Navy Supply Chain can deliver almost anything, but not always within your lifetime.....

179. Re: need household-substance anti-static coating for plastic meter cover

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 18:01:28 UTC
From: Mark Fergerson <nunya@biz.ness>
Message-ID: <3FFC4978.7010502@biz.ness>
Source record: 29666
Cross-posted to: sci.chem.coatings,sci.physics,sci.electronics.repair,rec.radio.amateur.homebrew

Alan Horowitz wrote:
> situation is a plastic meter cover, on a large process control board,
> onboard a tanker ship, deployed. The meter movement underneath
> experiences wild meter-swings, associated with finger contact,
> presumed to be due to static electricity.
>
> we have a decent collection of household-type substances, also a small
> collection of industrial substances.
>
> we have infrequent but regular access to Navy Exchanges, which are
> basically transplanted K-mart sort of outlet. Carries common american
> brand-name stuffs.
>
> The official Navy Supply Chain can deliver almost anything, but not
> always within your lifetime.....

Box of dryer sheets (you know, the ANTI-STATIC ones).
Wipe as needed. Also removes dust.

Mark L. Fergerson

180. Re: need household-substance anti-static coating for plastic meter cover

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 18:01:41 UTC
From: Bob Day <xxxxxxx@yyyyyyy.com>
Message-ID: <9QXKb.1631$jn1.1045@nwrdny01.gnilink.net>
Source record: 29667
Cross-posted to: sci.chem.coatings,sci.physics,sci.electronics.repair,rec.radio.amateur.homebrew

"Alan Horowitz" <alanh_27@yahoo.com> wrote in message
news:1e3670a7.0401070944.7f5191e7@posting.google.com...
> situation is a plastic meter cover, on a large process control board,
> onboard a tanker ship, deployed. The meter movement underneath
> experiences wild meter-swings, associated with finger contact,
> presumed to be due to static electricity.
>
> we have a decent collection of household-type substances, also a small
> collection of industrial substances.
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> we have infrequent but regular access to Navy Exchanges, which are
> basically transplanted K-mart sort of outlet. Carries common american
> brand-name stuffs.
>
> The official Navy Supply Chain can deliver almost anything, but not
> always within your lifetime.....

Hard disk or circuit board wrapper, especially one of the
translucent pink ones. You'd have to ground it somehow.

-- Bob Day

181. Sound card installed?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 18:12:12 UTC
From: fazamy@aol.com
Message-ID: <20040107131212.19091.00002348@mb-m13.aol.com>
Source record: 29668

On a vintage 1994 PC with a Windows 95 upgrade, where do you look to see if a sound card is installed? Inside the cpu or somewhere in the control panel? Both?
If you just have to check in the control panel (Hardware Profile?) what would be the designation for it?

Thanks,
KB2AMY

182. Re: need household-substance anti-static coating for plastic meter cover

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 18:17:48 UTC
From: Sofie <sofie@olypen.com>
Message-ID: <vvoj7dg5cn1q51@corp.supernews.com>
Source record: 29669
Cross-posted to: sci.chem.coatings,sci.physics,sci.electronics.repair,rec.radio.amateur.homebrew

Alan Horowitz:
A common liquid dish detergent like Joy, Palmolive, or Dove applied with a soft cloth or very soft paper towel like Viva (do not add water)..... wipe on and then wipe the excess off..... I have been using this method for decades on plastic analog multi-meter faces and it works great and has lasting effects.
--
Best Regards,
Daniel Sofie
Electronics Supply & Repair
- -

"Alan Horowitz" <alanh_27@yahoo.com> wrote in message
news:1e3670a7.0401070944.7f5191e7@posting.google.com...
> situation is a plastic meter cover, on a large process control board,
> onboard a tanker ship, deployed. The meter movement underneath
> experiences wild meter-swings, associated with finger contact,
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> we have a decent collection of household-type substances, also a small
> collection of industrial substances.
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> we have infrequent but regular access to Navy Exchanges, which are
> basically transplanted K-mart sort of outlet. Carries common american
> brand-name stuffs.
>
> The official Navy Supply Chain can deliver almost anything, but not
> always within your lifetime.....

183. Re: need household-substance anti-static coating for plastic meter cover

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 18:28:01 UTC
From: Jim Weir <jim@rst-engr.com>
Message-ID: <ipjovvs6cka1i2sqmvgh50tapuohqo5ic6@4ax.com>
Source record: 29670
Cross-posted to: sci.chem.coatings,sci.physics,sci.electronics.repair,rec.radio.amateur.homebrew

Clean it with liquid "fabric-soft" meant to be used in washing machines (the pink goo) and then wipe it with one of those "static-free" sheets you use in the dryer.

Use caution and a FEW drops of the pink goo so it doesn't run into the meter bearings and gum things up.

Jim

->
->we have a decent collection of household-type substances, also a small
->collection of industrial substances.
Jim Weir, VP Eng. RST Eng. WX6RST
A&P, CFI, and other good alphabet soup

184. Re: need household-substance anti-static coating for plastic meter cover

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 19:47:23 UTC
From: FrediFizzx <fredifizzx@hotmail.com>
Message-ID: <bthnei$7ik9e$1@ID-185976.news.uni-berlin.de>
Source record: 29671
Cross-posted to: sci.chem.coatings,sci.physics,sci.electronics.repair,rec.radio.amateur.homebrew

"Alan Horowitz" <alanh_27@yahoo.com> wrote in message
news:1e3670a7.0401070944.7f5191e7@posting.google.com...
| situation is a plastic meter cover, on a large process control board,
| onboard a tanker ship, deployed. The meter movement underneath
| experiences wild meter-swings, associated with finger contact,
| presumed to be due to static electricity.
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| we have a decent collection of household-type substances, also a small
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| we have infrequent but regular access to Navy Exchanges, which are
| basically transplanted K-mart sort of outlet. Carries common american
| brand-name stuffs.
|
| The official Navy Supply Chain can deliver almost anything, but not
| always within your lifetime.....

How big is it? If not too big, just breathe on it. The moisture in your breath will take the static charge away. Or you can just wipe it with a damp cloth. We have VU meters in audio that do the same thing. But most level meters now-a-days are solid state plasma displays or LED's.

FrediFizzx

185. Re: Sound card installed?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 19:50:11 UTC
From: donutbandit <none@none.com>
Message-ID: <bthntj$20u$2@news.snowcrest.net>
Source record: 29673

fazamy@aol.com (FAZAMY) wrote in
news:20040107131212.19091.00002348@mb-m13.aol.com:

> On a vintage 1994 PC with a Windows 95 upgrade, where do you look to
> see if a sound card is installed? Inside the cpu or somewhere in the
> control panel? Both?
> If you just have to check in the control panel (Hardware Profile?)
> what would be the designation for it?
>
> Thanks,
> KB2AMY
>

You're only going to see drivers in Control Panel.

Here's what you need:

http://www.belarc.com/free_download.html

186. Anyone willing to contribute an old Handbook CD?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 20:02:39 UTC
From: Lenny Wintfeld <lennyw@comcast.net>
Message-ID: <MPG.1a662fe73eb4256b989687@news.nj.comcast.giganews.com>
Source record: 29672

Hi,

A new friend, Ciro, CO6CR, who I recently met on 14070 psk asked me if I have an old copy of the Handbook CD. I don't, but I promised him I'd ask around the newsgroups.

If someone has an old Handbook CD they'd be willing to part with, I'm sure Ciro would be very appreciative. He's currently using a '70s vintage German made rig that was designed for 40 meter operation. He modified its PLL for 20 meter operation without having a schematic! A pretty resourceful fellow.

His rig produces no psk output at all with low audio drive, and then when it finally does output, it has an IMD of -8 or higher and 3 or 4 visible sideband pairs. I'm sure he's looking for a way to improve this situation.

Anyway, if you do have a Handbook cd you can part with, send it direct to him at his QRZ.COM address, or send it to me and I'll forward it.

73,
Lenny W2BVH

187. Rig to PC interface with TS-140s?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 20:03:31 UTC
From: fazamy@aol.com
Message-ID: <20040107150331.19282.00002359@mb-m13.aol.com>
Source record: 29674

Can the TS-140S be linked to a PC? I have little info on this subject. I heard about the IF-232C interface and the RS-232 serial port. But I need to hear from anyone who has linked his TS-140S to a PC.

I have a bunch of projects in mind, now that I have the time. That's why I've been doing a lot of posting :)

Thanks,
KB2AMY

188. Re: need household-substance anti-static coating for plastic meter cover

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 21:14:56 UTC
From: Al <no.spam@here.com>
Message-ID: <no.spam-64910D.16145707012004@news.verizon.net>
Source record: 29675
Cross-posted to: sci.chem.coatings,sci.physics,sci.electronics.repair,rec.radio.amateur.homebrew

In article <3FFC4978.7010502@biz.ness>, Mark Fergerson <nunya@biz.ness>
wrote:

> Alan Horowitz wrote:
> > > situation is a plastic meter cover, on a large process control board,
> > > onboard a tanker ship, deployed. The meter movement underneath
> > > experiences wild meter-swings, associated with finger contact,
> > > presumed to be due to static electricity.
> > >
> > > we have a decent collection of household-type substances, also a small
> > > collection of industrial substances.
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> > > we have infrequent but regular access to Navy Exchanges, which are
> > > basically transplanted K-mart sort of outlet. Carries common american
> > > brand-name stuffs.
> > >
> > > The official Navy Supply Chain can deliver almost anything, but not
> > > always within your lifetime.....
> >
> Box of dryer sheets (you know, the ANTI-STATIC ones).
> Wipe as needed. Also removes dust.
>
> Mark L. Fergerson
>

Yup, works for me. I use it on my monitors and my TVs. Help reduce the
dust buildup on the surface also.

Al

--
There's never enough time to do it right the first time.......

189. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-07 23:11:28 UTC
From: James Fenech <james.fenech@xxxnec.com.au>
Message-ID: <1073517087.694036@proxy.nec.com.au>
Source record: 29676

Hi Roy,

thanks for the suggestion. I am considering buying this book. Can I ask how much theory, and how deep does it go? I am an engineer (digital electornics and software background) and actually like some theory to help me understand what I am doing.

I already have some "real" test equipment, 50MHz CRO, signal generator, multimeter, etc. So "simple" test equipment may not be too much of an improvement.

I've looked over the internet, and some books that I have, but found no real example circuit on wideband VCOs. The only "sort of close enough" circuit I found is at:
http://www.newwaveinstruments.com/resources/rf_microwave_resources/sections/oscillator_vco_theory_design_circuit.htm#Voltage%20Controled%20Oscillator%20(VCO)%20Circuits
The second one down - Colpitts. Are there any such examples in this book?

Thanks,
James.

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vvmhtiea3qhuf5@corp.supernews.com...
> I highly recommend _Experimental Methods in RF Design_, by Hayward,
> Cambell, and Larkin. It's published by the ARRL and available from them
> and numerous other sources. Besides theory and a lot of real, practical,
> tested circuits and projects, it includes simple test equipment you can
> build yourself.
>
> Roy Lewallen, W7EL
>
> James Fenech wrote:
> > . . .
> > I have the ARRL handbook (1997 or so) but this doesn't have much in the
way
> > of theory. Is there any other reference anyone can recommend?
> > . . .
>

190. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-08 00:14:36 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <bti7gjimp1@newshost.mot.com>
Source record: 29677

You're climbing a steep hill here James. It is the % change in frequency that is the problem. Professional spec analysers use a 2 GHz LO with a 2:1 range (to scan 0-2GHz), but I believe that is a magnetically tuned YIG resonator. If you could get the frequency higher, so the sweep range is narrower, then mix to the desired freq with a balanced mixer...that would be an easier VCO design.

Steve
K;9;d;c;i

The punctuation is my feeble attempt at spam-bot blocking.

"James Fenech" <james.fenech@xxxnec.com.au> wrote in message
news:1073517087.694036@proxy.nec.com.au...
> Hi Roy,
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> thanks for the suggestion. I am considering buying this book. Can I ask
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> and software background) and actually like some theory to help me
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> what I am doing.
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> found is at:
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http://www.newwaveinstruments.com/resources/rf_microwave_resources/sections/oscillator_vco
_theory_design_circuit.htm#Voltage%20Controled%20Oscillator%20(VCO)%20Circuits
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> James.
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> >
>
>

191. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-08 00:36:34 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <mC1Lb.1$el2.0@nwrdny01.gnilink.net>
Source record: 29678

2:1 tuning range with varactor tuning is very doable in the frequency range he's considering. I've done 3:1 at lower frequencies. No steep hill at all.

Joe
W3JDR

"Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote in message news:bti7gjimp1@newshost.mot.com...
> You're climbing a steep hill here James. It is the % change in frequency
> that is the problem. Professional spec analysers use a 2 GHz LO with a 2:1
> range (to scan 0-2GHz), but I believe that is a magnetically tuned YIG
> resonator. If you could get the frequency higher, so the sweep range is
> narrower, then mix to the desired freq with a balanced mixer...that would be
> an easier VCO design.
>
> Steve
> K;9;d;c;i
>
> The punctuation is my feeble attempt at spam-bot blocking.
>
>
> "James Fenech" <james.fenech@xxxnec.com.au> wrote in message
> news:1073517087.694036@proxy.nec.com.au...
> > Hi Roy,
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> > thanks for the suggestion. I am considering buying this book. Can I ask
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> > much theory, and how deep does it go? I am an engineer (digital
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> > and software background) and actually like some theory to help me
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> > I already have some "real" test equipment, 50MHz CRO, signal generator,
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> circuit
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> > >
> >
> >
>
>

192. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-08 01:24:31 UTC
From: James Fenech <james.fenech@xxxnec.com.au>
Message-ID: <1073525071.806421@proxy.nec.com.au>
Source record: 29679

Thanks Joe,

I wouldn't have thought it would be too difficult. Minicircuits sells parts that have a 2:1 range (not the right range though), and I only want 1.7:1 or so. Interesting idea about downmixing, but I really don't want another mixer and oscillator in this thing.

Acording to my pspice results I can get the range, but I'm a little concerned about the high voltage swing on the varactors causing very poor phase noise.

James.

"W3JDR" <joe@roccis.com> wrote in message
news:mC1Lb.1$eI2.0@nwrdny01.gnilink.net...
> 2:1 tuning range with varactor tuning is very doable in the frequency
range
> he's considering. I've done 3:1 at lower frequencies. No steep hill at
all.
>
> Joe
> W3JDR
>
>
> "Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote in message
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frequency
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> > > I already have some "real" test equipment, 50MHz CRO, signal
generator,
> > > multimeter, etc. So "simple" test equipment may not be too much of an
> > > improvement.
> > >
> > > I've looked over the internet, and some books that I have, but found
no
> > real
> > > example circuit on wideband VCOs. The only "sort of close enough"
> circuit
> > I
> > > found is at:
> > >
> >
>
http://www.newwaveinstruments.com/resources/rf_microwave_resources/sections/oscillator_vco
_theory_design_circuit.htm#Voltage%20Controled%20Oscillator%20(VCO)%20Circuits
> > > The second one down - Colpitts. Are there any such examples in this
> book?
> > >
> > > Thanks,
> > > James.
> > >
> > >
> > > "Roy Lewallen" <w7el@eznec.com> wrote in message
> > > news:vvmhtiea3qhuf5@corp.supernews.com...
> > > > I highly recommend _Experimental Methods in RF Design_, by Hayward,
> > > > Cambell, and Larkin. It's published by the ARRL and available from
> them
> > > > and numerous other sources. Besides theory and a lot of real,
> practical,
> > > > tested circuits and projects, it includes simple test equipment you
> can
> > > > build yourself.
> > > >
> > > > Roy Lewallen, W7EL
> > > >
> > > > James Fenech wrote:
> > > > > . . .

> > > > > I have the ARRL handbook (1997 or so) but this doesn't have much
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> > the
> > > way
> > > > > of theory. Is there any other reference anyone can recommend?
> > > > > . . .
> > > > >
> > > >
> > > >
> > >
> > >
>
>

193. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-08 02:29:58 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <Gg3Lb.431$el2.149@nwrdny01.gnilink.net>
Source record: 29680

James
In general, very wide tuning range and very good phase noise are sort of antithetical. If you use the circuit I sent you, the phase noise will be quite good for your simple spectrum analyzer application (unless you're planning to have a very high resolution/very low bandwidth mode).

Don't get too hung up on your Spice modeling. It can keep you from trying some things that are known to work. In general, if I can build it faster than I can model it, I'll just go right for building it. I use modeling to get another perspective, but not to get the whole picture.

Joe

"James Fenech" <james.fenech@xxxnec.com.au> wrote in message news:1073525071.806421@proxy.nec.com.au...
> Thanks Joe,
>
> I wouldn't have thought it would be too difficult. Minicircuits sells parts
> that have a 2:1 range (not the right range though), and I only want 1.7:1 or
> so. Interesting idea about downmixing, but I really don't want another mixer
> and oscillator in this thing.
>
> Acording to my pspice results I can get the range, but I'm a little
> concerned about the high voltage swing on the varactors causing very poor
> phase noise.
>
> James.
>
> "W3JDR" <joe@roccis.com> wrote in message
> news:mC1Lb.1$eI2.0@nwrdny01.gnilink.net...
> > 2:1 tuning range with varactor tuning is very doable in the frequency
> range
> > he's considering. I've done 3:1 at lower frequencies. No steep hill at
> all.
> >
> > Joe
> > W3JDR
> >
> >
> > "Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote in message
> > news:bti7gjimp1@newshost.mot.com...
> > > You're climbing a steep hill here James. It is the % change in

> frequency
> > > that is the problem. Professional spec analysers use a 2 GHz LO with
a
> > 2:1
> > > range (to scan 0-2GHz), but I believe that is a magnetically tuned YIG
> > > resonator. If you could get the frequency higher, so the sweep range
is
> > > narrower, then mix to the desired freq with a balanced mixer...that
> would
> > be
> > > an easier VCO design.
> > >
> > > Steve
> > > K;9;d;c;i
> > >
> > > The punctuation is my feeble attempt at spam-bot blocking.
> > >
> > >
> > > "James Fenech" <james.fenech@xxxnec.com.au> wrote in message
> > > news:1073517087.694036@proxy.nec.com.au...
> > > > Hi Roy,
> > > >
> > > > thanks for the suggestion. I am considering buying this book. Can I
> ask
> > > how
> > > > much theory, and how deep does it go? I am an engineer (digital
> > > electornics
> > > > and software background) and actually like some theory to help me
> > > understand
> > > > what I am doing.
> > > >
> > > > I already have some "real" test equipment, 50MHz CRO, signal
> generator,
> > > > multimeter, etc. So "simple" test equipment may not be too much of
an
> > > > improvement.
> > > >
> > > > I've looked over the internet, and some books that I have, but found
> no
> > > real
> > > > example circuit on wideband VCOs. The only "sort of close enough"
> > circuit
> > > I
> > > > found is at:
> > > >
> > >
> > >
> >
> http://www.newwaveinstruments.com/resources/rf_microwave_resources/sections/oscillator_vco
_theory_design_circuit.htm#Voltage%20Controled%20Oscillator%20(VCO)%20Circuits

> > > > The second one down - Colpitts. Are there any such examples in this
> > book?
> > > >
> > > > Thanks,
> > > > James.
> > > >
> > > >
> > > > "Roy Lewallen" <w7el@eznec.com> wrote in message
> > > > news:vvmhtiea3qhuf5@corp.supernews.com...
> > > > > I highly recommend _Experimental Methods in RF Design_, by
Hayward,
> > > > > Cambell, and Larkin. It's published by the ARRL and available from
> > them
> > > > > and numerous other sources. Besides theory and a lot of real,
> > practical,
> > > > > tested circuits and projects, it includes simple test equipment
you
> > can
> > > > > build yourself.
> > > > >
> > > > > Roy Lewallen, W7EL
> > > > >
> > > > > James Fenech wrote:
> > > > > > . . .
> > > > > > I have the ARRL handbook (1997 or so) but this doesn't have much
> in
> > > the
> > > > way
> > > > > > of theory. Is there any other reference anyone can recommend?
> > > > > > . . .
> > > > >
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>

194. Re: Rig to PC interface with TS-140s?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-08 02:31:37 UTC
From: Freddie <brianNOSPAM86@iquest.net>
Message-ID: <di3Lb.32575$IM3.14547@newsread3.news.atl.earthlink.net>
Source record: 29681

Visit this website..

http://www.packetradio.com/psk31.htm

They sell the RASCAL interface kit. I use it all the time with my IBM Thinkpad and my 140S.

"FAZAMY" <fazamy@aol.com> wrote in message news:20040107150331.19282.00002359@mb-m13.aol.com...
> Can the TS-140S be linked to a PC? I have little info on this subject. I
> heard about the IF-232C interface and the RS-232 serial port. But I need to
> hear from anyone who has linked his TS-140S to a PC.
>
> I have a bunch of projects in mind, now that I have the time. That's why I've
> been doing a lot of posting :)
>
> Thanks,
> KB2AMY

195. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-08 02:40:59 UTC
From: Jim Pennell <Nospam@killspam.com>
Message-ID: <%q3Lb.24689$lo3.9232@newsread2.news.pas.earthlink.net>
Source record: 29682

Seems to me I read a note about W7ZOI starting to build a variation of his original spectrum analyzer which will cover up to 200 MHz.

http://users.easystreet.com/w7zoi/vhfbpf.html

He expects to use a mini-circuit VCO.

POS-535 VCO from MiniCircuits will sweep from 260 to 460 MHz

Given a first IF of 260 MHz, it all works nicely.

Personally, I'd be inclined to do something like this, using the minicircuits part, since they tend to be fairly linear tuning MHz/VOLT which simplifies the sweep circuitry a lot.

I have built broadband tuning range VCOs before, and I know it can be done, but in a spectrum analyzer, the performance is usually limited by the first VCO so using a good performance VCO makes sense to me.

Jim
N6BIU

196. Re: Transmitter tuning, antenna, etc

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-08 02:46:48 UTC
From: Circuit Breaker </dev/null@127.0.0.1>
Message-ID: <pan.2004.01.08.02.46.47.16838@bellsouth.net>
Source record: 29686

Paul Burridge wrote:

> On Sat, 03 Jan 2004 01:16:14 -0500, Circuit Breaker
> </dev/null@127.0.0.1> wrote:
>
>>Circuit Breaker wrote:
>>
>>> Thanks for the help, Joe - I'll let you know how it goes when I get the
>>> chance. Right now my father's needing my help loading a trailer with
>>
>>Well, I got the chance.
>>
>>Worked marvellously. I now have that same 1300 foot range I had before.
>>
>>Yeah, big deal, I know, but this is big for me - first "properly working",
>>tunable, hard-soldered FM transmitter for me that can go farther than my
>>bathroom.
>>
>>Only problem now is getting rid of the 60-cycle hum from my homebrew power
>>supply. Should be simple enough, and today I added the missing .1 uF
>>electrolytic capacitor to the power terminals (was missing, don't know why
>>I never put it in before). Still have the hum though.
>
> Not surprising. You want something *much* higher in value (a couple of
> thousand uF).

I posted an additional 80 lines or so in reply to this, but whether my ISP or my newsreader is the device that's screwed up, I don't know. Getting very irritating though, that every time I spend more than 30 seconds typing a reply it farhques up.

Anyway...

Between the full-wave bridge rectifier and the regulator is a pair of 35-v 1,000 uF electrolytic cylinders. I considered using a 4,700 uF, but it only sports a 16v rating (even the pair I have are only 25v). I did put it in parallel to my radio on the outside of the supply, and it /seemed/ to help some, but I'm tired and didn't take notes. I've played with different voltages as well, and it seems worse at higher voltages. Thinking it might be that there is no load on the supply, I added about 300 mW (it's a 450 mW transformer) of a light bulb to the mix. Didn't help a bit, and really heated the regulator up rather quickly.

I don't expect the circuit to be perfect, in spite of how I "sound" when I look back over what I've typed. However, I know it's got to be incredibly simple to fix.

Having forgotten what I typed this morning, and being irritated by how today has flown right by and I have accomplished close to nothing, I'm signing off soon and going to bed. Thanks for your suggestions, and I've got some research to do on the matter this w/e.

73, de KE4EDD

--

```
__ ____
/ _| | _ \ Unregistered Linux User #18,000,002
| |__ | _ \
\__/ |___/ Learning is the ONLY substitution for EDUCATION!
```

197. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-08 03:38:18 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vvpk5l4mk3a462@corp.supernews.com>
Source record: 29683

Experimental Methods is oriented toward the advanced amateur, so you won't find the depth and level of math you would in a college text or a specialized text on one of the many topics covered in that book. However, there's a lot more depth than you'll find in something like the _ARRL Handbook_. Another thing is that the authors are all experienced and professional engineers who've spent years doing RF design, and all know a very great deal about the covered topics. In my opinion, only someone with a very deep and basic understanding of the fundamentals can accurately explain theory in an intuitive and easy to understand way. The authors have that understanding. I have no doubt you'll be very pleased with the book.

Re test equipment: how about devices for measuring RF power, impedance, frequency, inductance, capacitance, Q, spectra, noise figure, and crystal characteristics?

I don't believe there's an example of a wideband VCO. The authors concentrate a lot on keeping phase noise low, so use other methods to achieve wideband operation than with a wideband VCO.

If you're looking for a more theoretical treatment of oscillators and other RF circuits, I recommend Hayward's _Introduction to Radio Frequency Design_, now also published by the ARRL. (You might find a used first edition, published by Wiley as I recall.) After reading the chapter on oscillators, you'll know enough to get a good start at least at designing your own VCO.

There are a lot of practical tips and observations about oscillators in _Oscillator Design and Computer Simulation_ by Randall Rhea (Noble publishing, ISBN1-884932-30-4), although in my opinion it doesn't convey as fundamental understanding of oscillator operation as Hayward's books.

Roy Lewallen, W7EL

James Fenech wrote:
> Hi Roy,
>
> thanks for the suggestion. I am considering buying this book. Can I ask how
> much theory, and how deep does it go? I am an engineer (digital electornics
> and software background) and actually like some theory to help me understand
> what I am doing.
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> I already have some "real" test equipment, 50MHz CRO, signal generator,
> multimeter, etc. So "simple" test equipment may not be too much of an
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> example circuit on wideband VCOs. The only "sort of close enough" circuit I
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> Thanks,
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>>I highly recommend _Experimental Methods in RF Design_, by Hayward,
>>Cambell, and Larkin. It's published by the ARRL and available from them
>>and numerous other sources. Besides theory and a lot of real, practical,
>>tested circuits and projects, it includes simple test equipment you can
>>build yourself.
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>>Roy Lewallen, W7EL
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>>James Fenech wrote:
>>
>>>. . .
>>>I have the ARRL handbook (1997 or so) but this doesn't have much in the
>
> way
>
>>>of theory. Is there any other reference anyone can recommend?
>>>. . .
>>
>
>

198. Re: need household-substance anti-static coating for plastic meter cover

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-08 04:27:39 UTC
From: **THE-RFI-EMI-GUY** <NoSpamBogus@NoSpamBogus.com>
Message-ID: <3FFCDC3B.7090305@NoSpamBogus.com>
Source record: 29684
Cross-posted to: sci.chem.coatings,sci.physics,sci.electronics.repair,rec.radio.amateur.homebrew

Reminds me of the time I did some radio work on four RCL cruise ships.
They each had a very impressive instrument panel in the engine room. On
every one of those panels was rigged up a simple plumb-bob on a three
foot string. I guess the engineers didn't put a lot of faith in the guages!

>"Alan Horowitz" <alanh_27@yahoo.com> wrote in message
>news:1e3670a7.0401070944.7f5191e7@posting.google.com...
>| situation is a plastic meter cover, on a large process control board,
>| onboard a tanker ship, deployed. The meter movement underneath
>| experiences wild meter-swings, associated with finger contact,
>| presumed to be due to static electricity.
>
>

>(snip)
>

--
Joe Leikhim K4SAT

"Jazz is not dead. It just smells funny." -F.Z.

199. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-08 04:45:49 UTC
From: James Fenech <james.fenech@xxxnec.com.au>
Message-ID: <1073537148.829268@proxy.nec.com.au>
Source record: 29685

Thanks for the feedback Roy, I've now got the book on order. Unfortunately I've now blown my book budget and will need to wait a while before ordering anything else.

James.

"Roy Lewallen" <w7el@eznec.com> wrote in message news:vvpk5l4mk3a462@corp.supernews.com...
> _Experimental Methods_ is oriented toward the advanced amateur, so you
> won't find the depth and level of math you would in a college text or a
> specialized text on one of the many topics covered in that book.
> However, there's a lot more depth than you'll find in something like the
> _ARRL Handbook_. Another thing is that the authors are all experienced
> and professional engineers who've spent years doing RF design, and all
> know a very great deal about the covered topics. In my opinion, only
> someone with a very deep and basic understanding of the fundamentals can
> accurately explain theory in an intuitive and easy to understand way.
> The authors have that understanding. I have no doubt you'll be very
> pleased with the book.
>
> Re test equipment: how about devices for measuring RF power, impedance,
> frequency, inductance, capacitance, Q, spectra, noise figure, and
> crystal characteristics?
>
> I don't believe there's an example of a wideband VCO. The authors
> concentrate a lot on keeping phase noise low, so use other methods to
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> If you're looking for a more theoretical treatment of oscillators and
> other RF circuits, I recommend Hayward's _Introduction to Radio
> Frequency Design_, now also published by the ARRL. (You might find a
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> at designing your own VCO.
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> There are a lot of practical tips and observations about oscillators in
> _Oscillator Design and Computer Simulation_ by Randall Rhea (Noble
> publishing, ISBN1-884932-30-4), although in my opinion it doesn't convey
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> Roy Lewallen, W7EL
>
> James Fenech wrote:
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> >

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http://www.newwaveinstruments.com/resources/rf_microwave_resources/sections/oscillator_vco
_theory_design_circuit.htm#Voltage%20Controled%20Oscillator%20(VCO)%20Circuits
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> >>tested circuits and projects, it includes simple test equipment you can
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> >>Roy Lewallen, W7EL
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> >
> > way
> >
> >>>of theory. Is there any other reference anyone can recommend?
> >>>. . .
> >>
> >
> >

>

200. Re: Radio Designer software package

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-08 11:01:36 UTC
From: mike@corn2.freeserve.co.uk
Message-ID: <3ffd37ad.493797590@news.freeserve.net>
Source record: 29687

On 7 Jan 2004 01:32:44 GMT, bg998@FreeNet.Carleton.CA (Martin Potter)
wrote:

>"W3JDR" (joe@roccis.com) writes:
>> The company that made ARRL Designer (Compact Software) was bought by Ansoft.
>> They have greatly enhanced the capability, and the current offering is
>> available as a free student version here:
>> http://www.ansoft.com/ansoftdesignersv/
>
>The download is *very* large. For folks on a dial-up connection, it is
>almost out the question. Is is available on a CD somewhere??
>Thanks.
>... Martin VE3OAT
>
>
Yes, e-mail the Serenade team and request an "educational" pack. There
is info on their site somewhere about this option.
hth Mike W
--

201. test de G4SVV

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-08 13:32:46 UTC
From: leesautos <dave@leesautos.demon.co.uk>
Message-ID: <btjm5u$98a$1$830fa795@news.demon.co.uk>
Source record: 29688

[No readable article body recovered]

202. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-08 13:49:14 UTC
From: Hans Summers <Hans.Summers@Tudor.Com>
Message-ID: <btjn4r$81qet$1@ID-61331.news.uni-berlin.de>
Source record: 29689

"James Fenech" <james.fenech@xxxnec.com.au> wrote in message
news:1073427388.55053@proxy.nec.com.au...
> Hi All,
>
> thanks for the many responses. My use of this VCO if for a homebrew
spectrum
> analyser, 0-100MHz with a 140MHz first IF. This sort of rules out doing it
> in ranges - maybe?

See my spectrum analyser:
http://www.hanssummers.com/electronics/equipment/spectrumanalyser/index.htm
which has 145MHz 1st IF and covers right up to (and through!) the 1st IF,
using an SA602 VCO covering 145MHz to something like 300MHz with no problem
and apparently excellent linearity. The varicap is BB105. Dynamic range is
limited to something like 70dB by the choice of front end (SA602) but it's a
fun and useful project that is quite easy to build. If anyone wants the
circuit diagram and full construction details let me know.

73 Hans
http://www.HansSummers.com

203. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-08 14:30:56 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <3FFD69FD.E77B83B6@rica.net>
Source record: 29690

Hans Summers wrote:

> See my spectrum analyser:
> http://www.hanssummers.com/electronics/equipment/spectrumanalyser/index.htm
> which has 145MHz 1st IF and covers right up to (and through!) the 1st IF,
> using an SA602 VCO covering 145MHz to something like 300MHz with no problem
> and apparently excellent linearity. The varicap is BB105. Dynamic range is
> limited to something like 70dB by the choice of front end (SA602) but it's a
> fun and useful project that is quite easy to build. If anyone wants the
> circuit diagram and full construction details let me know.

I very much enjoyed seeing all the photos of your construction and
would like to receive the schematic and details. Thanks.

--
John Popelish

204. Re: Rig to PC interface with TS-140s?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-08 17:14:53 UTC
From: haf47@juno.com
Message-ID: <f03bf94f.0401080914.650ea8cd@posting.google.com>
Source record: 29691

"Freddie" <brianNOSPAM86@iquest.net> wrote in message
news:<di3Lb.32575$IM3.14547@newsread3.news.atl.earthlink.net>...
> Visit this website..
>
> http://www.packetradio.com/psk31.htm
>
> They sell the RASCAL interface kit. I use it all the time with my IBM
> Thinkpad and my 140S.
>
>
> "FAZAMY" <fazamy@aol.com> wrote in message
> news:20040107150331.19282.00002359@mb-m13.aol.com...
> > Can the TS-140S be linked to a PC? I have little info on this subject. I
> > heard about the IF-232C interface and the RS-232 serial port. But I need
> to
> > hear from anyone who has linked his TS-140S to a PC.
> >
> > I have a bunch of projects in mind, now that I have the time. That's why
> I've
> > been doing a lot of posting :)
> >
> > Thanks,
> > KB2AMY

I think there may be two topics here....are you looking for the
interface that will allow you to control your radio with software on
the PC, such as software to do logging, frequency and mode control,
beam direction control, logging, etc., or are you looking for an
interface to allow you to operate with soundcard software to get you
on PSK31, RTTY, slow scan TV and other digital modes?

The IF-232C interface may have been discontinued by now. The good news
is that you can construct your own interface with a MAX32 IC, and a
74LS04 IC for about $4.00 plus a little box to mount the circuit in.

If its a soundcard interface you're looking for the Rascal is a good
choice as is the Tigertronics or Rigblaster. And there are a number of
other good ones out there too. It all depends on how much money you
want to spend.

What exactly are you trying to do? The TS-140 is new enough to be
computer controlled easily.

73 de WA2AFD

205. Re: need household-substance anti-static coating for plastic meter cover

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-08 19:41:20 UTC
From: Helmut Wabnig <hXXXwabnig@aXXXon.at>
Message-ID: <6gcrvv8v0tpre5j5ck50odc51gghd3rs7e@4ax.com>
Source record: 29692
Cross-posted to: sci.chem.coatings,sci.physics,sci.electronics.repair,rec.radio.amateur.homebrew

On 7 Jan 2004 09:44:16 -0800, alanh_27@yahoo.com (Alan Horowitz)
wrote:

>situation is a plastic meter cover, on a large process control board,
>onboard a tanker ship, deployed. The meter movement underneath
>experiences wild meter-swings, associated with finger contact,
>presumed to be due to static electricity.
>
>we have a decent collection of household-type substances, also a small
>collection of industrial substances.
>
>we have infrequent but regular access to Navy Exchanges, which are
>basically transplanted K-mart sort of outlet. Carries common american
>brand-name stuffs.
>
>The official Navy Supply Chain can deliver almost anything, but not
>always within your lifetime.....

Anti-icing screen cleaning tissue for car windshields...

leaves a thin film on the glass which is antistatic too.

w.

206. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 00:00:34 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <btkr29$3u3$1@newshost.mot.com>
Source record: 29694

My comments are colored by experience desigining quite low noise, relitavely narrow bandwidth VCOs, so all the other comments are very valid.

I will note that there are two aspects of noise to consider, that I can think of off hand. One is that:
1) Too low of an absolute DC voltage on the varactors will make for a noisy VCO and
2) A wide tuning range means that the varactor is relatively tightly coupled into the oscillator which means that control line noise/spurs you'll have to watch control line noise & spurs.
3) This also means the Varactors have more effect on the oscillator Q and therefore can also mean increased noise.
OK nobody expects the Spanish inquisition.

If you can determine the actual noise performance and keep it in mind that the analyzer has a noise limit, you'll be ok.

Been away from it too long and can't seem to recall why we used to use two, back-to-back varactors...brain is full...seems like it was to reduce the voltage across the varactor.

'guards, Steve K;9;D:C:I

"W3JDR" <joe@roccis.com> wrote in message
news:mC1Lb.1$eI2.0@nwrdny01.gnilink.net...
> 2:1 tuning range with varactor tuning is very doable in the frequency range
> he's considering. I've done 3:1 at lower frequencies. No steep hill at all.
>
> Joe
> W3JDR
>
>
> "Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote in message
> news:bti7gjimp1@newshost.mot.com...
> > You're climbing a steep hill here James. It is the % change in frequency
> > that is the problem. Professional spec analysers use a 2 GHz LO with a
> 2:1
> > range (to scan 0-2GHz), but I believe that is a magnetically tuned YIG
> > resonator. If you could get the frequency higher, so the sweep range is
> > narrower, then mix to the desired freq with a balanced mixer...that would
> be
> > an easier VCO design.

> >
> > Steve
> > K;9;d;c;i
> >
> > The punctuation is my feeble attempt at spam-bot blocking.
> >
> >
> > "James Fenech" <james.fenech@xxxnec.com.au> wrote in message
> > news:1073517087.694036@proxy.nec.com.au...
> > > Hi Roy,
> > >
> > > thanks for the suggestion. I am considering buying this book. Can I
ask
> > how
> > > much theory, and how deep does it go? I am an engineer (digital
> > electornics
> > > and software background) and actually like some theory to help me
> > understand
> > > what I am doing.
> > >
> > > I already have some "real" test equipment, 50MHz CRO, signal
generator,
> > > multimeter, etc. So "simple" test equipment may not be too much of an
> > > improvement.
> > >
> > > I've looked over the internet, and some books that I have, but found
no
> > real
> > > example circuit on wideband VCOs. The only "sort of close enough"
> circuit
> > I
> > > found is at:
> > >
> > >
>
http://www.newwaveinstruments.com/resources/rf_microwave_resources/sections/oscillator_vco
_theory_design_circuit.htm#Voltage%20Controled%20Oscillator%20(VCO)%20Circuits
> > > The second one down - Colpitts. Are there any such examples in this
> book?
> > >
> > > Thanks,
> > > James.
> > >
> > >
> > > "Roy Lewallen" <w7el@eznec.com> wrote in message
> > > news:vvmhtiea3qhuf5@corp.supernews.com...
> > > > I highly recommend _Experimental Methods in RF Design_, by Hayward,
> > > > Cambell, and Larkin. It's published by the ARRL and available from
> them
> > > > and numerous other sources. Besides theory and a lot of real,

> practical,
> > > > tested circuits and projects, it includes simple test equipment you
> can
> > > > build yourself.
> > > >
> > > > Roy Lewallen, W7EL
> > > >
> > > > James Fenech wrote:
> > > > > . . .
> > > > > I have the ARRL handbook (1997 or so) but this doesn't have much
in
> > the
> > > way
> > > > > of theory. Is there any other reference anyone can recommend?
> > > > > . . .
> > > >
> > >
> > >
> >
> >
>
>

207. Re: Need Info on 1 inch CRT

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 00:04:29 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <btkr9k$46b$1@newshost.mot.com>
Source record: 29693

P.S. Do the camcorders really use magnetic deflection???

Steve

"Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote in message
news:bti73m$i5d$1@newshost.mot.com...
> Don't think a pix will help much. It has what looks like the dark grey
> aquadag coating making any internal observations impossible. My sacnner
out
> of commission, but there's one at work. I should try to see if I can get
a
> good rendition of the printing though. Thanks.
> Steve
>
> "Michael A. Terrell" <mike.terrell@earthlink.net> wrote in message
> news:3FFB51A4.6BB59D5D@earthlink.net...
> > Steve Nosko wrote:
> > >
> > > I have a 3/4 or perhaps 1" CRT. Possibly from a camcorder, don't
know.
> > > Haven't been able to find anything. The wearable computer sites may
be
> a
> > > possibility, but I didn't see any leads so far. I want to use it for
a
> > > portable DF system.
> > > The number is unreadable. It has yellow ink printing not etched.
What
> > > could be the manufacturer: an "N" followed by what looks like a
> backwards
> > > somewhat stylized "B" What there is of a number looks like R2 then
> possibly
> > > a 1 and most likely a 5. So it sort-of looks like R215, but much of
the
> ink
> > > is gone. Standard 9 pin. Pins 4-5 must be the filament since they
show
> 4
> > > ohms cold. about 1" dia & 2" long. How about some ideas???
> > >
> > > --
> > > Steve N, K,9,d, c. i at arrl net will reach me, no commas, of
> course.
> >
> > If it is from a camcorder, it should have a deflection yoke. How

> > about some pictures? It might trigger someone to recognize it.
> >
> > Suitable newsgroups are:
> > news:alt.binaries.schematics.electronic
> > news:alt.binaries.pictures.radio
> >
> > Also, you can lay small parts on a flatbed scanner, cover them with a
> > sheet of white paper, and put a light over the paper to reduce shadows.
> > Yo can get good close-ups this way. I usually scan at 600 DPI, and
> > reduce image size to what I want. I would post a picture, an ask the
> > guys on news:sci.electronics.repair if anyone there can identify it.
> >
> > --
> > We now return you to our normally scheduled programming.
> >
> > Take a look at this little cutie! ;-)
> > http://home.earthlink.net/~mike.terrell/photos.html
> >
> > Michael A. Terrell
> > Central Florida
>
>

208. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 00:59:51 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <b2nLb.472$sU2.451@nwrdny01.gnilink.net>
Source record: 29695

Steve,
I think the main reason for back-to-back diodes is to prevent rectification of the RF. Rectification can cause several bad things, including pushing DC current back out the tuning voltage line, instability, and increased phase noise. Having said that, I tried back-to-back diodes a couple times and I don't ever recall ending up with it in the final design, so it must not have added all that much value. On the negative side, it halves the capacitance. One technique to improve the phase noise in wide-band VCO's was shown by Ulrich Rhode. He uses several diodes in parallel in order to decrease the RF current in each diode, reportedly lowering losses and improving noise. I never tried it myself.

Joe
W3JDR

"Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote in message news:btkr29$3u3$1@newshost.mot.com...
> My comments are colored by experience desigining quite low noise, relitavely
> narrow bandwidth VCOs, so all the other comments are very valid.
>
> I will note that there are two aspects of noise to consider, that I can
> think of off hand. One is that:
> 1) Too low of an absolute DC voltage on the varactors will make for a noisy
> VCO and
> 2) A wide tuning range means that the varactor is relatively tightly
> coupled into the oscillator which means that control line noise/spurs you'll
> have to watch control line noise & spurs.
> 3) This also means the Varactors have more effect on the oscillator Q and
> therefore can also mean increased noise.
> OK nobody expects the Spanish inquisition.
>
> If you can determine the actual noise performance and keep it in mind that
> the analyzer has a noise limit, you'll be ok.
>
> Been away from it too long and can't seem to recall why we used to use two,
> back-to-back varactors...brain is full...seems like it was to reduce the
> voltage across the varactor.
>
> 'guards, Steve K;9;D:C:I
>
>

>
> "W3JDR" <joe@roccis.com> wrote in message
> news:mC1Lb.1$eI2.0@nwrdny01.gnilink.net...
> > 2:1 tuning range with varactor tuning is very doable in the frequency
> range
> > he's considering. I've done 3:1 at lower frequencies. No steep hill at
> all.
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> > Joe
> > W3JDR
> >
> >
> > "Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote in message
> > news:bti7gjimp1@newshost.mot.com...
> > > You're climbing a steep hill here James. It is the % change in
> frequency
> > > that is the problem. Professional spec analysers use a 2 GHz LO with
a
> > 2:1
> > > range (to scan 0-2GHz), but I believe that is a magnetically tuned YIG
> > > resonator. If you could get the frequency higher, so the sweep range
is
> > > narrower, then mix to the desired freq with a balanced mixer...that
> would
> > be
> > > an easier VCO design.
> > >
> > > Steve
> > > K;9;d;c;i
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> > > The punctuation is my feeble attempt at spam-bot blocking.
> > >
> > >
> > > "James Fenech" <james.fenech@xxxnec.com.au> wrote in message
> > > news:1073517087.694036@proxy.nec.com.au...
> > > > Hi Roy,
> > > >
> > > > thanks for the suggestion. I am considering buying this book. Can I
> ask
> > > how
> > > > much theory, and how deep does it go? I am an engineer (digital
> > > electornics
> > > > and software background) and actually like some theory to help me
> > > understand
> > > > what I am doing.
> > > >
> > > > I already have some "real" test equipment, 50MHz CRO, signal
> generator,
> > > > multimeter, etc. So "simple" test equipment may not be too much of
an

> > > > improvement.
> > > >
> > > > I've looked over the internet, and some books that I have, but found
> no
> > > real
> > > > example circuit on wideband VCOs. The only "sort of close enough"
> > circuit
> > > I
> > > > found is at:
> > > >
> > >
> >
>
http://www.newwaveinstruments.com/resources/rf_microwave_resources/sections/oscillator_vco
_theory_design_circuit.htm#Voltage%20Controled%20Oscillator%20(VCO)%20Circuits
> > > > The second one down - Colpitts. Are there any such examples in this
> > book?
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> > > > Thanks,
> > > > James.
> > > >
> > > >
> > > > "Roy Lewallen" <w7el@eznec.com> wrote in message
> > > > news:vvmhtiea3qhuf5@corp.supernews.com...
> > > > > I highly recommend _Experimental Methods in RF Design_, by
Hayward,
> > > > > Cambell, and Larkin. It's published by the ARRL and available from
> > them
> > > > > and numerous other sources. Besides theory and a lot of real,
> > practical,
> > > > > tested circuits and projects, it includes simple test equipment
you
> > can
> > > > > build yourself.
> > > > >
> > > > > Roy Lewallen, W7EL
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> > > > > > I have the ARRL handbook (1997 or so) but this doesn't have much
> in
> > > the
> > > > > way
> > > > > > of theory. Is there any other reference anyone can recommend?
> > > > > > . . .
> > > > >
> > > >
> > > >
> > >
> >
> >

> >
> >
>
>

209. AM mobile

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 01:14:31 UTC
From: W7CXA <w7cxa@arrl.net>
Message-ID: <vvs094h8u2oie8@corp.supernews.com>
Source record: 29696

Anyone remember a three tube AM mobile rig for 80 meters? It used a 6146 modulator, a 6146 final, and I think a 12AQ6 oscillator. I built one and it worked great. I would like to find the schematic for that little rig.

Andy
W7CXA

210. Re: Need Info on 1 inch CRT

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 02:36:54 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <3FFE13BE.AA055E2C@earthlink.net>
Source record: 29597

Steve Nosko wrote:
>
> P.S. Do the camcorders really use magnetic deflection???
>
> Steve

I have a Sanyo laying here, apart, and it does. I am trying to find
the lens control circuits so I can mount a small CCD camera to it, and
use it to magnify what I am working on. The CRT has a seven pin base,
and a second anode connector on the side of the bell.

Your CRT would need four more terminals for electrostatic deflection,
and four output transistors to drive it. Since the tubes are small, and
run at fixed sweep frequencies, using magnetic deflection makes more
sense.

--
We now return you to our normally scheduled programming.

Take a look at this little cutie! ;-)
http://home.earthlink.net/~mike.terrell/photos.html

Michael A. Terrell
Central Florida

211. Superheterodyne mixer question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 04:52:30 UTC
From: joeryahoocom@yahoo.com
Message-ID: <e08922c6.0401082052.252319be@posting.google.com>
Source record: 29598

I'm trying to settle a debate with a friend, and my knowledge of
mixers is pretty rusty.

Say you have a receiver whose IF is 455 kHz, and it's tuned to a
station at 1500 kHz. If all's working OK, at the output of the mixer
you should have four frequencies:

1500 (original signal)
1955 (oscillator signal - osc. working above the signal freq.)
3455 (sum)
455 (difference)

My question is by what process does the mixer produce the 3455 and 455
frequencies. I say it's an add and subtract process, my friend says
(via mathematics) it's a multiplication process. Who's right?

thanks,

Joe W9TXU

212. Re: AM mobile

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 05:47:05 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <tfrLb.1309$zk.510@clgrps12>
Source record: 29599

Behold, W7CXA signalled from keyed 4-1000A filament:

> Anyone remember a three tube AM mobile rig for 80 meters? It used a
> 6146 modulator, a 6146 final, and I think a 12AQ6 oscillator. I built
> one and it worked great. I would like to find the schematic for that
> little rig.
>
> Andy
> W7CXA

Was that the one in the 1965 ARRL Radio Amateur's Handbook?

If so, I have it and can post it on ABSE.

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

213. Re: AM mobile

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 06:14:27 UTC
From: W7CXA <w7cxa@arrl.net>
Message-ID: <vvshm65llleofc@corp.supernews.com>
Source record: 29600

I built it in the late 50s, like 58 or 59. From QST I think. It may have
been in a later handbook. I just don't know.

Andy

"Gregg" <nospam@unknown.org> wrote in message
news:tfrLb.1309$zk.510@clgrps12...
> Behold, W7CXA signalled from keyed 4-1000A filament:
>
> > Anyone remember a three tube AM mobile rig for 80 meters? It used a
> > 6146 modulator, a 6146 final, and I think a 12AQ6 oscillator. I built
> > one and it worked great. I would like to find the schematic for that
> > little rig.
> >
> > Andy
> > W7CXA
>
> Was that the one in the 1965 ARRL Radio Amateur's Handbook?
>
> If so, I have it and can post it on ABSE.
>
> --
> Gregg
> *It's probably useful, even if it can't be SPICE'd*
> http://geek.scorpiorising.ca

214. Re: Superheterodyne mixer question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 09:45:52 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vvsu2hdu02ooe9@corp.supernews.com>
Source record: 29601

Your friend is right.

If you simply add or subtract two waveforms, no new frequencies are created. You end up with only the frequencies you started with and no more. (Theoretically, you could make one or more disappear if one of the added waveforms contained a precise negative of one or more frequency components of the other -- but you can never get any new frequencies.) That's because addition is a linear process, with linear having a precise definition that's appeared here a number of times before. (Subtraction is just addition, with one waveform inverted before adding.) Multiplication, though, is a nonlinear process by the precise definition used in circuit analysis, and it does create additional frequencies. Multiplying the two original signals of 1500 and 1955 generates the two new frequencies of 455 and 3455, for a total of four frequencies after multiplication. Adding them wouldn't do it.

Most good mixers are actually more like switches than multipliers, but they're still nonlinear -- very much so -- and don't do anything remotely like adding the two signals. A doubly balanced mixer produces the sum and difference frequencies while not letting the original two frequencies get through to the output.

The generation of the new frequencies by multiplication of the two originals is easily shown mathematically, as your friend says, with a short derivation by means of a trig identity. I'll be glad to post the derivation if you or other readers are interested, although it's widely available elsewhere.

Roy Lewallen, W7EL

Joer wrote:
> I'm trying to settle a debate with a friend, and my knowledge of
> mixers is pretty rusty.
>
> Say you have a receiver whose IF is 455 kHz, and it's tuned to a
> station at 1500 kHz. If all's working OK, at the output of the mixer
> you should have four frequencies:
>
> 1500 (original signal)
> 1955 (oscillator signal - osc. working above the signal freq.)
> 3455 (sum)
> 455 (difference)
>
> My question is by what process does the mixer produce the 3455 and 455
> frequencies. I say it's an add and subtract process, my friend says
> (via mathematics) it's a multiplication process. Who's right?

>
> thanks,
>
> Joe W9TXU

215. Re: Superheterodyne mixer question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 11:23:49 UTC
From: Sverre Holm <la3za.0junk4me@qsl.net>
Message-ID: <btm2ui$6gp$1@maud.ifi.uio.no>
Source record: 29602

Yes, your friend is right, but there is a grain of truth in what you are saying also.

A mixer multiplies two signals as your friend says and as said in the posting by W7EL. Signals can be represented by cosines, and the product of two cosines is:

cosA * cosB = 0.5(cos(A-B) - cos(A+B))

See product identities on http://www.swt.edu/slac/math/trigrev/trigrev.html and let A=2*pi*f1 and B=2*pi*f2.

So while the operation of the mixer is that signals are _multiplied_, the frequencies will _add_ or subtract.

--
Sverre Holm, LA3ZA
---
www.qsl.net/la3za

216. Re: Superheterodyne mixer question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 11:45:35 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <D43wt8CfRp$$EA+I@ifwtech.co.uk>
Source record: 29604

Roy Lewallen wrote:
>Multiplying the two original signals of 1500 and 1955 generates the two
>new frequencies of 455 and 3455, for a total of four frequencies after
>multiplication. Adding them wouldn't do it.

Part of the confusion is that audio engineers talk about "mixing" where
they actually mean adding. Mixing - as RF engineers use the term - is
precisely what they don't want!

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

217. Re: Superheterodyne mixer question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 13:06:47 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <btm917$b11$1@sparta.btinternet.com>
Source record: 29603

Mixers are amplitude modulators.
One signal modulates the amplitude of the other.
Trigonometrically we have -

2*Sin(A)*Sin(B) = Cos(A-B) - Cos(A+B)

Where the A-B and A+B terms are appropriately described as "the products".

In practice there are a great number of unwanted products output from a
mixer because many harmonics of A and B are generated in the process and all
continue to inter-modulate each other.

The wanted product, the IF, is usually A-B or A+B.

.....
Regards from Reg, G4FGQ
For Free Radio Design Software go to
http://www.btinternet.com/~g4fgq.regp
.....

218. Re: Superheterodyne mixer question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 13:45:24 UTC
From: Fred Bartoli <fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo>
Message-ID: <3ffeb0a7$0$1168$636a55ce@news.free.fr>
Source record: 29605

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> a écrit dans le message news:
D43wt8CfRp$$EA+I@ifwtech.co.uk...
> Roy Lewallen wrote:
> >Multiplying the two original signals of 1500 and 1955 generates the two
> >new frequencies of 455 and 3455, for a total of four frequencies after
> >multiplication. Adding them wouldn't do it.
>
> Part of the confusion is that audio engineers talk about "mixing" where
> they actually mean adding. Mixing - as RF engineers use the term - is
> precisely what they don't want!
>
>

Well, ear is also somewhat non linear. So they are also doing mixing.

Fred.

219. Re: Superheterodyne mixer question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 14:07:18 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <qAyLb.5615$vj1.36@nwrdny03.gnilink.net>
Source record: 29606

Fred,
You're exactly correct! That's why a piano tuner person can strike a tuning fork and a piano key at the same time and hear the frequency difference as a low beat note.

As to Ian's comment...I don't think "adding" is the correct term either. "Multiplying" or "sampling" are more precise terms. A perfect balanced unity-gain mixer actually uses one of the input signals to sample the other. On the positive half cycle of the LO, one phase of the RF signal is sampled, and on the other half cycle of the LO the opposite phase of the RF is sampled. Mathematically, this is equivalent to multiplying the RF signal by +1 or -1 on alternating half cycles of the LO.

Joe
W3JDR

"Fred Bartoli"
<fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo> wrote in
message news:3ffeb0a7$0$1168$636a55ce@news.free.fr...
>
> "Ian White, G3SEK" <G3SEK@ifwtech.co.uk> a crit dans le message news:
> D43wt8CfRp$$EA+I@ifwtech.co.uk...
> > Roy Lewallen wrote:
> > >Multiplying the two original signals of 1500 and 1955 generates the two
> > >new frequencies of 455 and 3455, for a total of four frequencies after
> > >multiplication. Adding them wouldn't do it.
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> > they actually mean adding. Mixing - as RF engineers use the term - is
> > precisely what they don't want!
> >
> >
>
> Well, ear is also somewhat non linear. So they are also doing mixing.
>
> Fred.
>
>
>
>

220. Re: Superheterodyne mixer question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 14:22:17 UTC
From: Fred Bartoli <fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo>
Message-ID: <3ffeb94e$0$1173$636a55ce@news.free.fr>
Source record: 29607

"W3JDR" <joe@roccis.com> a crit dans le message news:
qAyLb.5615$vj1.36@nwrdny03.gnilink.net...
> Fred,
> You're exactly correct! That's why a piano tuner person can strike a
tuning
> fork and a piano key at the same time and hear the frequency difference as
a
> low beat note.
>

Sure. Just try to suppress ear non linear effects and see how miserable composers will feel without it and how poor the music will sound to our "marvellous new ears".

> As to Ian's comment...I don't think "adding" is the correct term either.
> "Multiplying" or "sampling" are more precise terms. A perfect balanced
> unity-gain mixer actually uses one of the input signals to sample the
other.
> On the positive half cycle of the LO, one phase of the RF signal is
sampled,
> and on the other half cycle of the LO the opposite phase of the RF is
> sampled. Mathematically, this is equivalent to multiplying the RF signal
by
> +1 or -1 on alternating half cycles of the LO.
>

Or, convolving, if the frequency domain, which tells all the story.

Fred.

221. Re: Superheterodyne mixer question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 15:09:54 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <ctAnYBDCRs$$EAt3@ifwtech.co.uk>
Source record: 29608

Fred Bartoli wrote:
>
>"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> a ï¿½crit dans le message news:
>D43wt8CfRp$$EA+l@ifwtech.co.uk...
>> Roy Lewallen wrote:
>> >Multiplying the two original signals of 1500 and 1955 generates the two
>> >new frequencies of 455 and 3455, for a total of four frequencies after
>> >multiplication. Adding them wouldn't do it.
>>
>> Part of the confusion is that audio engineers talk about "mixing" where
>> they actually mean adding. Mixing - as RF engineers use the term - is
>> precisely what they don't want!
>>
>>
>
>Well, ear is also somewhat non linear. So they are also doing mixing.

What the audio engineers do at the "mixing desk" involves only adding.
What our ears do, is something else.

But in fact, our ears are very close to linear. There is a belief that
because we can hear "beat" frequencies, there must be some non-linear
mixing in our ears... but that is actually a fallacy. The way we hear
beat frequencies - the difference frequency between two separate audio
tones - is due to simple linear addition and subtraction of two sound
pressure waves. Non-linear mixing is not required.

(If non-linear mixing were involved, we'd hear the sum frequency as well
as the difference frequency... but in fact we don't, unless there is
some other source of non-linearity outside of our ears.)

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

222. Re: Superheterodyne mixer question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 15:41:07 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <H80xcQFTus$$EAOx@ifwtech.co.uk>
Source record: 29609

W3JDR wrote:
>Fred,
>You're exactly correct! That's why a piano tuner person can strike a tuning
>fork and a piano key at the same time and hear the frequency difference as a
>low beat note.
>
Hearing beats does not require non-linear or multiplicative mixing -
please see my separate reply to Fred.

>As to Ian's comment...I don't think "adding" is the correct term either.

I was referring to what *audio* engineers call "mixing", which is
nothing else but simple adding or linear combining.

I agree with everything you say below...

>"Multiplying" or "sampling" are more precise terms. A perfect balanced
>unity-gain mixer actually uses one of the input signals to sample the other.
>On the positive half cycle of the LO, one phase of the RF signal is sampled,
>and on the other half cycle of the LO the opposite phase of the RF is
>sampled. Mathematically, this is equivalent to multiplying the RF signal by
>+1 or -1 on alternating half cycles of the LO.

...but the processes you describe are not what a straightforward audio
"mixing" desk does.

The device you describe above, an audio engineer would know as a
"modulator" or a "ring modulator". For example, the LO could be at a low
frequency, to get some kind of throbbing effect. Both RF and audio
engineers would agree, that is true modulation.

The difference is that RF engineers would also call that process
"mixing"... but audio engineers would not because, to in their
professional world, "mixing" means adding or linear combining.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

223. How to build 50 Mhz (6m) receiver for AM/CW/SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 15:53:16 UTC
From: "Mitar G. Kolac" <jovehan@zzyahoo.com>
Message-ID: <j9ALb.566$zm5.425@nntpserver.swip.net>
Source record: 29610

Hi!

I I am interested in building a simple receiver to listen on 6m band. I have tried to search the net but without success. Any suggestion?
Thanks

Mitar G. K.

PS

I have some experience in building things from kits but do not have deeper knowledge in electronics.

If you want to reply direct please remove "zz" from the address.

224. Re: How to build 50 Mhz (6m) receiver for AM/CW/SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 17:59:55 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <vvtr0i777qpm90@corp.supernews.com>
Source record: 29611

If you already have a receiver that covers HF build a converter. QST has published plans for tx/rx transverters in the last 10 years or so, but (a) they're transverters so they're more complicated than you need and (b) they're for things like 12m to 20m. None the less there'll be interesting info there. You may also want to look in the current Handbook.

For casual listening you should be able to do it with an NE602/NE612, a 24MHz crystal and the appropriate input/output filters. The `602 has it's own oscillator so with the right battery power you could get by with no other active componants, even.

"Mitar G. Kolac" <jovehan@zzyahoo.com> wrote in message news:j9ALb.566$zm5.425@nntpserver.swip.net...
> Hi!
>
>
> I I am interested in building a simple receiver to listen on 6m band. I
> have tried to search the net but without success. Any suggestion?
> Thanks
>
> Mitar G. K.
>
>
> PS
>
>
> I have some experience in building things from kits but do not have
deeper
> knowledge in electronics.
>
>
> If you want to reply direct please remove "zz" from the address.
>
>

225. Re: Superheterodyne mixer question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 18:33:48 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <vvtt01p5rcvnd4@corp.supernews.com>
Source record: 29612

Disclaimer (disflamer?): Everything that Roy says is true enough to get you down the road of radio circuit design -- but:

To be absolutely, mathematically correct, if you hold your mouth right, a "perfect" mixer with it's driving oscillator, is a linear device. It is _not_ a time-invariant device. It's linear because the IF signal that results from putting in the sum of any two RF signals is exactly equal to the sum of the IF signals that each result from each of the RF signals. If it were nonlinear then this would not be the case (and it wouldn't be a useful device for mixing).

What gives a mixer it's "mixerness" is that it is linear but time-varying (output = input * some function of time). It is very easy to confuse time-varying linear with non-linear, and even easier in practice because in order to get the effect you need to use componant non-linearities to get the job done, just as you do with a class A amplifier. But it's usually harder to get the nonlinearities out of a mixer than an amplifier, so in real design you have to pay attention to non-linear effects like blocking and intermodulation in a mixer to a much greater extent than you do with an amplifier, and this reinforces the idea that a mixer is fundamentally nonlinear.

This means that when you're analyzing a mixer (and ignoring real-mixer things like intermodulation) you can still use all the linear circuit theory stuff as long as you stay away from anything that depends on time-invariance. This means that _simple_ Laplace and Fourier analysis is out, but you can still use _careful_ Fourier analysis to figure out what the output will be for a given input and oscillator frequency. In fact, that's exactly what you are doing when you analyze a mixer: all of the desired behavior of a mixer can be exactly predicted with Fourier analysis.

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vvsu2hdu02ooe9@corp.supernews.com...
> Your friend is right.
>
> If you simply add or subtract two waveforms, no new frequencies are
> created. You end up with only the frequencies you started with and no
> more. (Theoretically, you could make one or more disappear if one of the
> added waveforms contained a precise negative of one or more frequency
> components of the other -- but you can never get any new frequencies.)
> That's because addition is a linear process, with linear having a
> precise definition that's appeared here a number of times before.
> (Subtraction is just addition, with one waveform inverted before
> adding.) Multiplication, though, is a nonlinear process by the precise
> definition used in circuit analysis, and it does create additional

> frequencies. Multiplying the two original signals of 1500 and 1955
> generates the two new frequencies of 455 and 3455, for a total of four
> frequencies after multiplication. Adding them wouldn't do it.
>
> Most good mixers are actually more like switches than multipliers, but
> they're still nonlinear -- very much so -- and don't do anything
> remotely like adding the two signals. A doubly balanced mixer produces
> the sum and difference frequencies while not letting the original two
> frequencies get through to the output.
>
> The generation of the new frequencies by multiplication of the two
> originals is easily shown mathematically, as your friend says, with a
> short derivation by means of a trig identity. I'll be glad to post the
> derivation if you or other readers are interested, although it's widely
> available elsewhere.
>
> Roy Lewallen, W7EL
>
> Joer wrote:
> > I'm trying to settle a debate with a friend, and my knowledge of
> > mixers is pretty rusty.
> >
> > Say you have a receiver whose IF is 455 kHz, and it's tuned to a
> > station at 1500 kHz. If all's working OK, at the output of the mixer
> > you should have four frequencies:
> >
> > 1500 (original signal)
> > 1955 (oscillator signal - osc. working above the signal freq.)
> > 3455 (sum)
> > 455 (difference)
> >
> > My question is by what process does the mixer produce the 3455 and 455
> > frequencies. I say it's an add and subtract process, my friend says
> > (via mathematics) it's a multiplication process. Who's right?
> >
> > thanks,
> >
> > Joe W9TXU
>

226. Re: Superheterodyne mixer question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 20:06:53 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <xRDLb.931$N35.71@nwrdny02.gnilink.net>
Source record: 29613

Bill,

You said:
" Any good technician will tell you it's an add and subtract process.
Any good engineer will bore you to tears with complicated mathematical
analysis.
Guess which answer is more useful for your purpose?"

Well of course...if you're only interested in what some of what comes out, then it's an 'add and subtract process'. But isn't that our initial definition of what we want a mixer to do? This is circular logic. You're chasing your own tail.

The original question was more in the vein of 'by what mechanism does a mixer produce sum and difference frequency components'. The correct answer is that it implements the mathematical product of the two input signals, and that product contains sum and difference frequencies in addition to a host of other frequencies that includes the original frequencies, all their harmonics, and every conceivable product of those frequencies and their harmonics. It's not just a simple 'add and subtract'. It just so happens that we're most interested in the sum and difference, but there is much, much more going on.

The "answer that is most useful for the purpose" is not necessarily the most simplistic. Consider the following profound statement from W.E. Deming:
"If you can't describe what you are doing as a process, then you don't know what you are doing"

Joe W3JDR

227. Re: Sound card installed?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 21:08:29 UTC
From: Larry Gagnon <lagagnon@fakeuniserve.com>
Message-ID: <vvu61q65oq7h27@corp.supernews.com>
Source record: 29614

FAZAMY wrote:

> On a vintage 1994 PC with a Windows 95 upgrade, where do you look to see
> if a
> sound card is installed? Inside the cpu or somewhere in the control
> panel? Both?
> If you just have to check in the control panel (Hardware Profile?) what
> would be the designation for it?
>
> Thanks,
> KB2AMY

In "Device Manager", from Control Panel, or press the Windows Start Key and
Pause/Break key at the same time.

228. Re: Superheterodyne mixer question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 21:21:44 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vvu6ra8bmpp617@corp.supernews.com>
Source record: 29615

You're absolutely correct. Production of new frequency components can be done with either nonlinear or time-variant circuits. A square-law diode detector is an example of the first; a multiplier is an example of the second. I stand corrected -- thanks for pointing it out.

Roy Lewallen, W7EL

Tim Wescott wrote:
> Disclaimer (disflamer?): Everything that Roy says is true enough to get you
> down the road of radio circuit design -- but:
>
> To be absolutely, mathematically correct, if you hold your mouth right, a
> "perfect" mixer with it's driving oscillator, is a linear device. It is
> _not_ a time-invariant device. It's linear because the IF signal that
> results from putting in the sum of any two RF signals is exactly equal to
> the sum of the IF signals that each result from each of the RF signals. If
> it were nonlinear then this would not be the case (and it wouldn't be a
> useful device for mixing).
>
> What gives a mixer it's "mixerness" is that it is linear but time-varying
> (output = input * some function of time). It is very easy to confuse
> time-varying linear with non-linear, and even easier in practice because in
> order to get the effect you need to use componant non-linearities to get the
> job done, just as you do with a class A amplifier. But it's usually harder
> to get the nonlinearities out of a mixer than an amplifier, so in real
> design you have to pay attention to non-linear effects like blocking and
> intermodulation in a mixer to a much greater extent than you do with an
> amplifier, and this reinforces the idea that a mixer is fundamentally
> nonlinear.
>
> This means that when you're analyzing a mixer (and ignoring real-mixer
> things like intermodulation) you can still use all the linear circuit theory
> stuff as long as you stay away from anything that depends on
> time-invariance. This means that _simple_ Laplace and Fourier analysis is
> out, but you can still use _careful_ Fourier analysis to figure out what the
> output will be for a given input and oscillator frequency. In fact, that's
> exactly what you are doing when you analyze a mixer: all of the desired
> behavior of a mixer can be exactly predicted with Fourier analysis.
>
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:vvsu2hdu02ooe9@corp.supernews.com...
>
>>Your friend is right.
>>
>>If you simply add or subtract two waveforms, no new frequencies are

>>created. You end up with only the frequencies you started with and no
>>more. (Theoretically, you could make one or more disappear if one of the
>>added waveforms contained a precise negative of one or more frequency
>>components of the other -- but you can never get any new frequencies.)
>>That's because addition is a linear process, with linear having a
>>precise definition that's appeared here a number of times before.
>>(Subtraction is just addition, with one waveform inverted before
>>adding.) Multiplication, though, is a nonlinear process by the precise
>>definition used in circuit analysis, and it does create additional
>>frequencies. Multiplying the two original signals of 1500 and 1955
>>generates the two new frequencies of 455 and 3455, for a total of four
>>frequencies after multiplication. Adding them wouldn't do it.
>>
>>Most good mixers are actually more like switches than multipliers, but
>>they're still nonlinear -- very much so -- and don't do anything
>>remotely like adding the two signals. A doubly balanced mixer produces
>>the sum and difference frequencies while not letting the original two
>>frequencies get through to the output.
>>
>>The generation of the new frequencies by multiplication of the two
>>originals is easily shown mathematically, as your friend says, with a
>>short derivation by means of a trig identity. I'll be glad to post the
>>derivation if you or other readers are interested, although it's widely
>>available elsewhere.
>>
>>Roy Lewallen, W7EL
>>
>>Joer wrote:
>>
>>>I'm trying to settle a debate with a friend, and my knowledge of
>>>mixers is pretty rusty.
>>>
>>>Say you have a receiver whose IF is 455 kHz, and it's tuned to a
>>>station at 1500 kHz. If all's working OK, at the output of the mixer
>>>you should have four frequencies:
>>>
>>>1500 (original signal)
>>>1955 (oscillator signal - osc. working above the signal freq.)
>>>3455 (sum)
>>>455 (difference)
>>>
>>>My question is by what process does the mixer produce the 3455 and 455
>>>frequencies. I say it's an add and subtract process, my friend says
>>>(via mathematics) it's a multiplication process. Who's right?
>>>
>>>thanks,
>>>
>>>Joe W9TXU
>>
>

>

229. Heat sinks/variable transformers/misc offered

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-09 22:31:12 UTC
From: Roy Brock <roybro@sccoast.net>
Message-ID: <btnaf2$atth$1@news3.infoave.net>
Source record: 29616

Hello all,

I have a bunch of heatsinks I'd like to sell. Most are perfect for mobile power amps.
Some have enclosures where the face of the heatsink forms one side (the top) of the enclosure, and wings for mounting on the opposite side (again, perfect for mobile PAs). Enclosures/heatsinks just described are approximately 5.5" x 7.5". I have ten of them.
I have other heatsinks perfect for PAs that are 6.75" x 9.25"; I have four of these.
I have a couple that are a little larger than above, approx. 7.5" x 10.5". One has a single transistor PA on it already; stripline matching, so has to be 2M or upwards.
I also have some LARGE stuff for high current diodes/SCRs (>200 Amp) - mega surface area.
There are also various lengths of raised mount TO-3 style sink.
Lastly (heatsinks), I have a box of smaller (one TO-3) type sinks I will sell as a lot.

I also would like to sell five 2.25A 120-volt variable transformers, superior electric powerstat type 10C.

I have a single broadcast-pull 4-400 w/socket (its twin was broken in my absence under mysterious circumstances; I never used them) and a plate tuning cap, don't know the value, transmitting, ceramic ends, 27 plates total, 1/8" spacing. Surely someone out there could use them.

Make offer for anything you're interested in. If you want pics, just ask and I'll email 'em.

Thanks...Roy Brock

230. Re: Superheterodyne mixer question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 00:08:35 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <btnftd$8cb$1@newshost.mot.com>
Source record: 29617

A lot of good stuff here and unfortunately some digression.

It might help here if you think this way. The basic RF or as you say, superhetrodyne mixer, does what it does by instantaneous voltages multiplication of the _instantaneous voltages_ of the two signals. There are many types of these RF mixers, but the one which is modeled with this concept will only give you the two frequencies as Roy's trig identity shows. You can take a spreadsheet and put a sine wave of one freq in one column and another freq in another column (use a pretty small angle step, say 1 degree or less - be careful the degree/radian issue doesn't mess you up) then make a formula in a third column which is A*B. You will see that the resulting "product" column has variations which are not the two input frequencies. It may not me real clear, but if it wiggles faster or slower that the originals, then it is a different frequency. (now I gotta do this so I see what it looks like for my self). However, better yet.....
The neatest example of this is to put the exact same frequency in both inputs columns! Then the "wiggles" of the sine wave will be very obvious. There will be no doubt about what is coming out of the multiplication. God, I love spreadsheets. (sorry here, the beginning of a sentence is capitalized).

Why does this Mister Wizzard stunt work? Because a circuit is doing something to the voltages present at any given time, and in this case it is a product thing.

SO, YES you do get the "Sum" and "Difference" frequencies out, so if you want to call that addition / subtraction while working "in the frequency domain" that's ok with me. However, all this other garbage holds, just the same.

If you make a circuit which gives as its output the product of the two input voltages, Roy's formula holds and you get the sum and difference frequencies only. This is what we commonly call a "balanced mixer". The term "balanced" comes from the concept that in this type, if you get the circuit set up or "balanced" just right, the two input signals don't appear at the output and the trig identity holds. I suppose it can be called the ideal type.

When you get into what is commonly called "modulation", you still have this type of instantaneous voltage multiplication, but usually, like in a Plate modulated Tube transmitter, it is not so perfect and some of the original input signals get through to the output (though the audio can't make it out to the antenna) and you get carrier (one of the input signals) as well. (I'm not going to get into the 'does the carrier vary in amplitude' or sideband arguments here.)

All this talk about many more than the two frequencies is the result of what we call "higher order" non linearities. This is just a way to describe distortion that keeps the original sine waves from being perfect sine waves in a circuit.

Also, the sampling talk will just confuse this basic issue, so I advise ignoring it for now.

FWIW: the model in my brain can somewhat consider time variant the same as non linearity since you get out something which ain't a simple scaled version of the input...
73, Steve K;9;D:C:I

How'm I doin' Roy & Reg?

"W3JDR" <joe@roccis.com> wrote in message
news:xRDLb.931$N35.71@nwrdny02.gnilink.net...
> Bill,
>
> You said:
> " Any good technician will tell you it's an add and subtract process.
> Any good engineer will bore you to tears with complicated mathematical
> analysis.
> Guess which answer is more useful for your purpose?"
>
> Well of course...if you're only interested in what some of what comes out,
> then it's an 'add and subtract process'. But isn't that our initial
> definition of what we want a mixer to do? This is circular logic. You're
> chasing your own tail.
>
> The original question was more in the vein of 'by what mechanism does a
> mixer produce sum and difference frequency components'. The correct answer
> is that it implements the mathematical product of the two input signals,
and
> that product contains sum and difference frequencies in addition to a host
> of other frequencies that includes the original frequencies, all their
> harmonics, and every conceivable product of those frequencies and their
> harmonics. It's not just a simple 'add and subtract'. It just so happens
> that we're most interested in the sum and difference, but there is much,
> much more going on.
>
> The "answer that is most useful for the purpose" is not necessarily the
most
> simplistic. Consider the following profound statement from W.E. Deming:
> "If you can't describe what you are doing as a process, then you don't
know
> what you are doing"
>
>
> Joe W3JDR
>
>

231. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 00:31:56 UTC
From: John Moriarity <k6qq@hdo.net>
Message-ID: <vvuhv0j0u4bia5@corp.supernews.com>
Source record: 29618

> One technique to improve the phase noise in wide-band VCO's was shown by
> Ulrich Rhode. He uses several diodes in parallel in order to decrease the
RF
> current in each diode, reportedly lowering losses and improving noise. I
> never tried it myself.

If the diodes are the limiting factor, it can help.
The second diode seemed to do the most good,
the third, a little more, but any more didn't help
(in my designs).

The way the varactor is made will affect the
noise performance. Ask the manufacturers
which process yields their best phase-noise
performance. Most of them are very helpful.
As I recall, planar, epitaxial construction,
with thermal compression bonded leads
gave my best results. Hyperabrupt diodes
gave the worst. But things change rapidly
these days, so ask.

73, John - K6QQ

232. Re: Radio Designer software package

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 00:35:40 UTC
From: Phil Kane <Phil.Kane@nov.shmovz.ka.pop>
Message-ID: <xnfcneeyarg.hr6weed.pminews@netnews.comcast.net>
Source record: 29619
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

On Wed, 07 Jan 2004 00:00:51 GMT, Jim Hampton wrote:

>Don't know if it will help, but how about this:
>http://www.dosemu.org/
>I have no idea if it will help or not; I'm thinking of putting Linux in one
>of the boxes. A Google search of 'DOS emulators for Linux' yielded a ton of
>hits, but you've likely already researched them.

Thanks for the pointer - now I know where to get dosemu which I was
advised to try.

--
73 de K2ASP - Phil Kane

From a Clearing in the Silicon Forest
Beaverton (Washington County) Oregon

233. Re: Radio Designer software package

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 00:35:40 UTC
From: Phil Kane <Phil.Kane@nov.shmovz.ka.pop>
Message-ID: <xnfcneeyarg.hr6wbbc.pminews@netnews.comcast.net>
Source record: 29620
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

On Tue, 06 Jan 2004 20:13:16 -0000, Dave Platt wrote:

>> I'm trying to find a DOS emulator for Linux to see if I can run two
>> circuits at once now...,..
>
>A version of F6FBB is available which runs native on Linux, using the
>Linux AX.25 networking support code. There ought to be no problem
>running multiple TNCs (either real ones in KISS mode on serial ports,
>or soundmodem versions), doing digipeating, etc. on Linux.

Thanks for the pointer, Dave. I'm getting back into the *nix world
after being away from it for almost 10 years and I've forgotten more
than I remember, it seems.

I'll try to find F6FBB and see if I like it. I've become very
attached to the look and feel of PkGold over the last 10+ years that
I've used it, and of course in a pinch I can use a straight terminal
program....

--
73 de K2ASP - Phil Kane

From a Clearing in the Silicon Forest
Beaverton (Washington County) Oregon

234. Re: Superheterodyne mixer question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 00:56:56 UTC
From: joeryahoocom@yahoo.com
Message-ID: <e08922c6.0401091656.34097477@posting.google.com>
Source record: 29621

Thanks everyone, in fact I received an e-mail from my friend with similar trigonometric equations, so I'm absolutely convinced! I now have a slightly better idea of how a superhet mixer functions ....

Joe W9TXU

235. Re: Superheterodyne mixer question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 06:32:16 UTC
From: "Peter O. Brackett" <no_such_address@ix.netcom.com>
Message-ID: <Q%MLb.1325$i4.1072@newsread1.news.atl.earthlink.net>
Source record: 29622

Ian:

[snip]
"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:D43wt8CfRp$$EA+l@ifwtech.co.uk...
> Roy Lewallen wrote::
:
> Part of the confusion is that audio engineers talk about "mixing" where
> they actually mean adding. Mixing - as RF engineers use the term - is
> precisely what they don't want!
:
> 73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
[snip]

Mixer, modulator, multiplier, demodulator, detector, switcher, balanced modulator, adder, subtractor, heh, heh....

The term mixer is overused, or... "overloaded" as the computer scientists like to say.

Yes indeed, too bad for beginners, but it's part of the mystique of our trade as well, that there are plenty of examples of misuse, misappropriation, and the outright abuse of terms and their meanings in our trade! Keeps gurus in business and nosey outsiders out, as well. :-) Heh, heh...

Even within the English speaking community, there is often no consistency of terminology use, for example "tube" versus "valve", etc...

British and American use of the term "mixer" in the television production equipment business has further confusing examples of overuse and overlapping meanings. In television production technology the term "mixer" is also used to describe switching and sepcial effects equipment and the terms are applied differently on each side of the Atlantic. What you Brits call a television "mixer" is called a television "switcher" in America, and what's more... the same names are used for the operators of the said mixing/switching equipment. [Grass Valley, Ross, Central Dynamics, etc... are manufacturers of such.] You can often see the equipment operator's names listed opposite the titles Mixer or Switcher on the TV screen when they roll the credits at the end of television shows. And to make things worse, the "function" of an audio "mixer" is again entirely different than a video "mixer", whilst television video mixers often contain integrated audio mixers. Impossible for beginners to figure out what experts are talking about, go figure!

--
Peter K1PO
Indialantic By-the-Sea, FL

236. Re: Heat sinks/variable transformers/misc offered

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 06:43:43 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <zaNLb.1270$wf1.25@edtnps89>
Source record: 29623

That 4-400 would make an intimidating monoblock for us d00ds over at
R.A.T. ;-)

You in Canada?

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

237. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 10:50:46 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <2hgvvvkagar1dq0b11a7flrl0ldc2cn621@4ax.com>
Source record: 29624

On Fri, 9 Jan 2004 16:31:56 -0800, "John Moriarity" <k6qq@hdo.net>
wrote:

>> One technique to improve the phase noise in wide-band VCO's was shown by
>> Ulrich Rhode. He uses several diodes in parallel in order to decrease the RF
>> current in each diode, reportedly lowering losses and improving noise. I
>> never tried it myself.

Or is it simply that when using multiple varactors in parallel, the
amount of capacitance needed from each varactor is reduced, hence a
higher tuning voltage must be used with the same inductance ? With a
high tuning voltage, the capacitance/voltage ratio is smaller, hence
the capacitance difference would be smaller on the separate RF half
cycles. This would reduce the phase noise.

>If the diodes are the limiting factor, it can help.
>The second diode seemed to do the most good,
>the third, a little more, but any more didn't help
>(in my designs).

Your observations would support my theory, since adding further
varactors would only increase the tuning voltage slightly with the
same inductance.

Paul OH3LWR

238. Re: Superheterodyne mixer question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 11:59:56 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <7d$ukKK8k+$$EAr5@ifwtech.co.uk>
Source record: 29625

Bill Turner wrote:
>
>Correct of course, but as I understand it, the only complication is
>that there are harmonics present. It is still a case of add and
>subtract, isn't it?
>
>The original question only mentioned the *four* frequencies present in
>the output, ignoring the harmonics.
>
>Unless you can show me otherwise, I stand by my original observation.
>

The math does show otherwise.

When we talk about "square-law" and "third-order", we're actually buying into a whole package deal of math-based concepts. Logically, the deal is that we can't use those words *meaningfully* unless we also accept what the math tells us, namely:

1. Each order of distortion is independent of all the other orders. It generates its own individual package of output frequencies.

2. Frequencies that are in the same-order package *must* all be generated together (you can't have one of them without having all the others too).

3. Frequencies that are in different-order packages are totally separate and unconnected.

2f1 and 2f2 are part of the package of 2nd-order products, along with (f1 + f1) and (f1 - f2)... there are four 2nd-order output frequencies, no more and no less.

3f1, 3f2, (2f1 + f2), (2f1 - f2), (f1 + 2f1) and (f2 - 2f1) are all part of the 3rd-order package... there are six 3rd-order output frequencies, no more and no less.

A perfect square-law mixer produces only 2nd-order products. 2f1 and 2f2 are present at the output, but they do not "go round again" and mix with the input signals to produce (2f1 + f2) etc. Those 3rd-order products arise *entirely and exclusively* from 3rd-order distortion.

That conclusion follows by strict, non-negotiable mathematical logic from the fundamental definition of what "order of distortion" means.

As others have said, from the practical engineering point of view, the way you envision mixing products being produced is "purely academic".

But that "purely academic" debate is exactly what we're involved in
here... so here, it makes all the difference in the world.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

239. Re: How to build 50 Mhz (6m) receiver for AM/CW/SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 14:18:42 UTC
From: Yukio <yano@shaw.ca>
Message-ID: <6RTLb.47169$ts4.29982@pd7tw3no>
Source record: 29626

Convert 40 Channel CB to 6M , change 1 crystal and retune !

Yukio YANO

>
> I I am interested in building a simple receiver to listen on 6m band. I
> have tried to search the net but without success. Any suggestion?
> Thanks
>
> Mitar G. K.
>
>

240. Re: Superheterodyne mixer question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 15:09:13 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <btp4ipcql1@hercules.btinternet.com>
Source record: 29627

> How'm I doin' Roy & Reg?
>
==========

Steve, you're doing fine.

Absolutely no reference to Terman, Kraus, or those 3 gentlemen of
118-radials fame who forgot to measure ground conductivity before going
home. ;o)

Reg

241. Re: Need Info on 1 inch CRT

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 17:05:00 UTC
From: Uncle Peter <radioconnectionNO@cox.netSPAM>
Message-ID: <4hWLb.29705$WQ3.6987@lakeread05>
Source record: 29628

"Michael A. Terrell" <mike.terrell@earthlink.net> wrote in message
news:3FFB51A4.6BB59D5D@earthlink.net...
> > If it is from a camcorder, it should have a deflection yoke. How
> about some pictures? It might trigger someone to recognize it.
>
> Suitable newsgroups are:
> news:alt.binaries.schematics.electronic
> news:alt.binaries.pictures.radio
>
> Also, you can lay small parts on a flatbed scanner, cover them with a
> sheet of white paper, and put a light over the paper to reduce shadows.
> Yo can get good close-ups this way. I usually scan at 600 DPI, and
> reduce image size to what I want. I would post a picture, an ask the
> guys on news:sci.electronics.repair if anyone there can identify it.
>
> --
> We now return you to our normally scheduled programming.
>
> Take a look at this little cutie! ;-)
> http://home.earthlink.net/~mike.terrell/photos.html
>
> Michael A. Terrell
> Central Florida

Many early systems used separate cameras and a suitcase
VCR. My RCA camera had a removable viewfinder which
used a minature CRT with a yoke.

Pete

242. Re: How to build 50 Mhz (6m) receiver for AM/CW/SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 17:09:04 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <QkWLb.9273$6y6.280513@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29629

That would get you started, but you would need to change the front end coils
in order to make that work. There wouldn't be enough tuning range with the
current front end components. You might be able to change the padding caps,
but still........

Pete

Yukio <yano@shaw.ca> wrote in message news:6RTLb.47169$ts4.29982@pd7tw3no...
> Convert 40 Channel CB to 6M , change 1 crystal and retune !
>
> Yukio YANO
>
> >
> > I I am interested in building a simple receiver to listen on 6m band.
I
> > have tried to search the net but without success. Any suggestion?
> > Thanks
> >
> > Mitar G. K.
> >
> >
>
>

243. Re: How to build 50 Mhz (6m) receiver for AM/CW/SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 18:28:11 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <btpg7rqhl1@freenet9.carleton.ca>
Source record: 29631

"Ralph Mowery" (rmowery@ctc.net) writes:
> "Yukio" <yano@shaw.ca> wrote in message
> news:6RTLb.47169$ts4.29982@pd7tw3no...
>> Convert 40 Channel CB to 6M , change 1 crystal and retune !
>>
>> Yukio YANO
>
> Have you tried this and if so what modle did you use ?
>
>

There was an article about doing this in 73 about twenty years ago,
when conversions of PLL CB sets were alll the rage. It counted on
the injection frequency being on the high side, so the image frequency
was in the six meter band. I can't remember whether it worked out
directly, or if one had to fiddle with something.

Pete's right, the front end would have to be adjusted.

It's an interesting scheme, but oddly while it would require less
construction, it may be more daunting for a beginner to do such
modifications than for that beginner to build a converter as someone
suggested. You don't have to worry about tracking down a schematic
for the CB set, you don't have to worry about finding what's where (or
figure out what needs to be done when likely there aren't specific
instructions for the set in hand), and don't have to worry about working
in the confined spaces. Building a converter from scratch means you
can wait till you have a full schematic for parts that you can get,
and you can construct it in a fashion where there is plenty of space,
though of course it would need to be built in a small area for proper
performance.

Michael VE2BVW

244. Re: How to build 50 Mhz (6m) receiver for AM/CW/SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 19:19:24 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <JZ6dnY7039c3353dRVn-sA@ctc.net>
Source record: 29630

"Yukio" <yano@shaw.ca> wrote in message
news:6RTLb.47169$ts4.29982@pd7tw3no...
> Convert 40 Channel CB to 6M , change 1 crystal and retune !
>
> Yukio YANO

Have you tried this and if so what modle did you use ?

245. Re: Need Info on 1 inch CRT

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 20:33:27 UTC
From: R J Carpenter <rcarpen@erols.com>
Message-ID: <40006172$0$6745$61fed72c@news.rcn.com>
Source record: 29632

The 913 is a 1" electrostatic CRT. It looks like a metal 6L6 with a glass end, IIRC.

(running an hiding to avoid flames)

246. Re: Superheterodyne mixer question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 20:38:11 UTC
From: averyfineman@aol.com
Message-ID: <20040110153811.29815.00002683@mb-m21.aol.com>
Source record: 29634

In article <e08922c6.0401082052.252319be@posting.google.com>,
joeryahoocom@yahoo.com (Joer) writes:

>I'm trying to settle a debate with a friend, and my knowledge of
>mixers is pretty rusty.
>
>Say you have a receiver whose IF is 455 kHz, and it's tuned to a
>station at 1500 kHz. If all's working OK, at the output of the mixer
>you should have four frequencies:
>
>1500 (original signal)
>1955 (oscillator signal - osc. working above the signal freq.)
>3455 (sum)
>455 (difference)
>
>My question is by what process does the mixer produce the 3455 and 455
>frequencies. I say it's an add and subtract process, my friend says
>(via mathematics) it's a multiplication process. Who's right?

Neither and both! :-)

It depends on the definitions of "linearity," "mixing," and "adding."

In a perfect linear circuit, two or more signals can exist as separate
entities, none affecting any other. You can "mix" them (inject them)
with the group of signals. Since the circuit is perfectly linear, no new
frequencies are added which are attributed to a sum or difference of
existing frequency signal components.

In sound recording "mixing" and "adding" always refers to operation
with nearly-perfect linear circuits to a recording medium.

"Mixers" in radios are highly non-linear. Some are outright switches
(Tayloe Mixer), some are very nearly on-off switches (diode rings),
and some use gross distortion of normally-linear characteristics
(tubes, particularly pentagrids...and Gilbert Cell double-differential
transistor structures). NON-LINEARITY creates new frequencies.

Mixing (in a mixer circuit) an incoming signal with a local oscillator
creates a mathematical sum and difference of the signal and the
LO frequencies...in addition to the existing signal and LO
frequencies passing through the mixer circuit (balanced mixers will
suppress the LO and double-balanced mixers can suppress the
signal frequency as well).

In this process of mixer circuit mixing, the new frequency products
(using "products" in a very general sense, not just multiplication)

still retain the amplitudes of the original. The signal's amplitude containing AM sidebands is repeated at the new sum and difference frequencies. Relative phase is also preserved. If the signal has modulation components due to FM or PM, those appear on the new sum and difference frequencies. If the much-stronger LO contains any AM, FM, or PM, that is repeated on the new sum and difference frequency components as AM, FM, or PM.

It gets worse. :-) The LO is seldom a pure sinewave so it has harmonic content. New sum and difference frequencies will exist as a result of LO harmonics! [most of those are simply filtered out, dissipated, rejected] Scoping an LO injection waveform on a wideband oscilloscope might come as a shock... :-)

The "process" is all due to NON-LINEARITY. The mixer output contains the original signals plus components at frequencies which are the sum and difference of the original...plus a few more.

Mathematics is used as a way of explaining the non-linear mixing process. That isn't the full explaination but it is close enough. Don't get caught up in plus and minus signs on equations and too much argument over that...nor of the mathematical purists who play games with term re-arrangements and "hidden meanings."

Non-linearity of all amplifiers will cause heterodyne creations. A low-level example is the intermodulation distortion values such as "IP3.".

Len Anderson
retired (from regular hours) electronic engineer person

247. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 20:38:12 UTC
From: averyfineman@aol.com
Message-ID: <20040110153812.29815.00002684@mb-m21.aol.com>
Source record: 29633

In article <b2nLb.472$sU2.451@nwrdny01.gnilink.net>, "W3JDR" <joe@roccis.com>
writes:

>Steve,
>I think the main reason for back-to-back diodes is to prevent rectification
>of the RF. Rectification can cause several bad things, including pushing DC
>current back out the tuning voltage line, instability, and increased phase
>noise. Having said that, I tried back-to-back diodes a couple times and I
>don't ever recall ending up with it in the final design, so it must not have
>added all that much value. On the negative side, it halves the capacitance.
>One technique to improve the phase noise in wide-band VCO's was shown by
>Ulrich Rhode. He uses several diodes in parallel in order to decrease the RF
>current in each diode, reportedly lowering losses and improving noise. I
>never tried it myself.

Variable-capacitance diodes exhibit that phenomenon only in
reverse-DC-bias connections. In forward-DC-bias connection they
behave generally like ordinary diodes, conducting very little current
until about 0.6 V across the junction.

A single variable-capacitance diode across an RF circuit will conduct
- and thus have an effect on the RF tuned circuit - when the
combination of DC tuning bias and RF voltages are above the
forward-conduction breakpoint.

The purpose of "back-to-back" connection is to keep the (now two)
variable-capacitance diodes always in reverse-conduction...the RF
voltage (peak-to-peak) is not supposed to exceed either the break-
down voltage of the diodes or cause either of them to be forward-
biased during any part of the RF cycle.

With no forward conduction, the variable capacitance diodes remain
just that - variable capacitances.

When forward conduction occurs, it adds more non-linearity to the
RF circuit and tends to decrease the action of the variable capacitance.

When used in low-level RF stages of a receiver input, the RF voltage
hardly ever exceeds 1 V peak-to-peak and thus the variable
capacitance diode never goes into forward conduction. Single diodes
can be used there without doubling-up.

Len Anderson
retired (from regular hours) electronic engineer person

248. Will MOSFETS ever completely replace Bi-Polar Transistors?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 21:52:28 UTC
From: motg@stratos.net
Message-ID: <efd5c18c.0401101352.48bee95a@posting.google.com>
Source record: 29635

Anyone have any thoughts on this? Just a general question. Why or why not

249. Tranciever

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 22:02:55 UTC
From: bhockenberry@verizon.net
Message-ID: <3db4555e.32577571@news.verizon.net>
Source record: 29636

Feom the 1975 Amatueur,s handbook Trying to combine receiver and transmitter into one unit, both use RCA CA3046 IC for VFO, ideas for substitution and for improvements? Watn to combine both into one unit?

250. Need data for Siemens SDA4212 divide by 64 prescaler

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 22:03:05 UTC
From: LA8AK@online.no
Message-ID: <4000669b.61846615@news.online.no>
Source record: 29637

Hi

need to help a mate with a SDA4212 divider which is the only I could
find in my shack, but can't find any good data for it. It seems to be
very popular in Slovenia, but it is sorts of language problems....
Believe we bought them as replacement for U884 or U664 when it was
popular in Germany, but can't find the reference today.

We are experimenting with a PC controlled sweep oscillator and display

73 es hpe bcnu
Jan-Martin
LA8AK, http://home.online.no/~la8ak/

--
Amount of SPAM is so large that MailWasher must delete 99% of the incoming mails
Cannot check every email manually. Please use intelligent title for email.
Mails without titles or using just "hi" is deleted

251. Re: Tranciever

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 22:12:14 UTC
From: bhockenberry@verizon.net
Message-ID: <3db5584b.33326840@news.verizon.net>
Source record: 29638

Seems like it could be a decent QRP rig?

On Sat, 10 Jan 2004 22:02:55 GMT, bhockenberry@verizon.net (Ross Hockenberry) wrote:

>Feom the 1975 Amatueur,s handbook Trying to combine receiver and
>transmitter into one unit, both use RCA CA3046 IC for VFO, ideas for
>substitution and for improvements? Watn to combine both into one
>unit?

252. FS: WWII Radio Parts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-10 22:21:41 UTC
From: ldaniel102@aol.com
Message-ID: <20040110172141.16134.00001461@mb-m22.aol.com>
Source record: 29639

Hi. newsgroup. I have a small box of WWII radio parts. They are all made by Galvin MFG Corp. They are for BC 611 and BC-746. Includes tuning units, circuit strip, battery unit, and ear and mouthpiece covers. Most new in box, 6-8 parts. $10 plus postage. Thanks Larry

253. Re: Tranciever

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 00:18:56 UTC
From: "Dr. A.T. Squeegee" <SpammersArePondScum@Dev.Null>
Message-ID: <MPG.1a6a364c25f8bbe1989bf0@192.168.42.131>
Source record: 29641

In article <3db4555e.32577571@news.verizon.net>,
bhockenberry@verizon.net says...

> Feom the 1975 Amatueur,s handbook Trying to combine receiver and
> transmitter into one unit, both use RCA CA3046 IC for VFO, ideas for
> substitution and for improvements? Watn to combine both into one
> unit?

Getting a spellchecker going on your system might be a good start.
;-)

You may find it a bit of a challenge to get hold of CA3046's. It
appears (from a Google search) that they're now made by Intersil

FWIW, that IC is nothing more than an NPN transistor array. You
may be able to sub discrete components.

--
Dr. Anton Squeegee, Director, Dutch Surrealist Plumbing Institute
(Known to some as Bruce Lane, KC7GR)
kyrrin a/t bluefeathertech d-o=t c&o&m
Motorola Radio Programming & Service Available -
http://www.bluefeathertech.com/rf.html
"Quando Omni Flunkus Moritati" (Red Green)

254. Re: Will MOSFETS ever completely replace Bi-Polar Transistors?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 00:21:41 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <7t2100tu40t924ij40lmdb6c78bvfg2h7g@4ax.com>
Source record: 29640

On 10 Jan 2004 13:52:28 -0800, motg@stratos.net (Frank) wrote:

>Anyone have any thoughts on this? Just a general question. Why or why not

Nope. They both have their strenghts and weaknesses in different
applications.
Certainly I'd say FETs are easier to understand in terms of how they
work; being more 'valve-like' than the BJT. But that's about it.
--

My opinion is worth what you've paid for it.

255. Re: Will MOSFETS ever completely replace Bi-Polar Transistors?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 01:02:17 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <btq7apifi1@freenet9.carleton.ca>
Source record: 29642

Frank (motg@stratos.net) writes:
> Anyone have any thoughts on this? Just a general question. Why or why not

But what makes you ask the question?

When the transistor came along, almost right away they started to
be used in equipment. This despite the fact that those early bipolar
transistors were not all that suitable for some of the applications.
The FET came along in the early sixties, and it was seen as the salvation,
as the way of the future. But to some extent it was an illusion. The FET
was good for some things, and did have better strong signal handling
ability than the bipolars of the day. But, the bipolar and applying
it just hadn't moved far enough along the curve. By 1971, the ham magazines
(and obviously the professional literature) was talking in terms of
strong signal bipolars, using power transistors and biasing them
almost as if they were being used in transmitters despite the application
being for receive. And of course, better bipolars were coming along,
that gave good performance at the higher frequencies.

Somewhere in there, the schottky diode started appearing in practical
circuits, and obviously it made for a good mixer

The MOSFET came along, late sixties or early seventies, and it was seen
as an extension of the FET, in that they were both high input impedance
devices, and were seen as the future. They were seen as the future,
but that was thirty years ago.

Nowadays, MOSFETs for RF are relatively uncommon. You can do what
you need with bipolar transistors, or in the case of mixers (which
was seen as a prime use for dual-gate MOSFETs), passive diode mixers
are seen as the way to go.

If you'd asked this question thirty or even twenty years ago, it would
seem like an opportune question. MOSFETs were still relatively new,
and they seemed like a solution. But their use in RF circuits peaked
more or less. So thirty years later, the question doesn't seem to
be one to ask, since enough time has gone by that we know they will
not take over from bipolar transistors.

Michael VE2BVW

256. Re: Will MOSFETS ever completely replace Bi-Polar Transistors?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 02:12:03 UTC
From: R J Carpenter <rcarpen@erols.com>
Message-ID: <4000b0d1$0$6738$61fed72c@news.rcn.com>
Source record: 29643

"Michael Black" <et472@FreeNet.Carleton.CA> wrote in message
news:btq7apifi1@freenet9.carleton.ca...
>
> Nowadays, MOSFETs for RF are relatively uncommon.

That would be news to manufacturers of broadcast transmitters.

I think that you'll find that the usual solid state AM transmitter is a huge D-to-A converter consisting of lots of MOSFETS. The 50-kW Harris DX-50 uses that technique and is just about the "standard" 50-kW rig. It is used by many stations. The transistors are in modules that can be hot-swapped while the rig is on the air. Distortion is within limits even with a few of the modules missing.

MOSFETs are also used as the output amplifiers in high power FM broadcast 100-MHz transmitters - certainly up to the 10-kW level.

257. Re: Tranciever

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 03:00:31 UTC
From: bhockenberry@verizon.net
Message-ID: <3db69baa.50576350@news.verizon.net>
Source record: 29644

Sorry about any miss spellings, hand injury put the drop on my rapid
typing. (Big bad cat.)

On Sat, 10 Jan 2004 16:18:56 -0800, Dr. A.T. Squeegee
<SpammersArePondScum@Dev.Null> wrote:

>In article <3db4555e.32577571@news.verizon.net>,
>bhockenberry@verizon.net says...
>
>> Feom the 1975 Amatueur,s handbook Trying to combine receiver and
>> transmitter into one unit, both use RCA CA3046 IC for VFO, ideas for
>> substitution and for improvements? Watn to combine both into one
>> unit?
>
> Getting a spellchecker going on your system might be a good start.
>;-)
>
> You may find it a bit of a challenge to get hold of CA3046's. It
>appears (from a Google search) that they're now made by Intersil
>
> FWIW, that IC is nothing more than an NPN transistor array. You
>may be able to sub discrete components.

258. Re: Will MOSFETS ever completely replace Bi-Polar Transistors?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 03:01:52 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <A03Mb.4809$wf1.3648@edtnps89>
Source record: 29645

Besides the reasons already given for RF, in power electronics, the Ron of a BJT is far lower than a MOSFET. There is a melding of the two technologies, called the IGBT (Insulated Gate Bipolar Transistor), but they are only good up to a few dozens of KHz where true power bipolars can switch ealily into the tens of MHz.

For audio and instrument applications where noise levels need to be below 2nV/Hz, MOSFETS can't even go there (without being dunked in cryogenic fluid).

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

259. Re: How to build 50 Mhz (6m) receiver for AM/CW/SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 04:34:30 UTC
From: Circuit Breaker <bagboy6437@shipaol.com>
Message-ID: <pan.2004.01.11.04.34.29.126770@bellsouth.net>
Source record: 29646

Mitar G. Kolac wrote:

> I am interested in building a simple receiver to listen on 6m band. I
> have tried to search the net but without success. Any suggestion? I have
> some experience in building things from kits but do not have deeper
> knowledge in electronics.

Since it's purely for receiving, I assume you don't have a license for it, and are interested in the hobby in more depth than just hearing a bunch of old men talk about the XYLs ;-)

Probably the cheapest way to /build/ one would be to scour the internet for any kind of receiver schematic... I saw some not too long ago - I'll make a note here to try browsing for it again (but it will have to be about a week from now as tomorrow I'll spend most of my time doing work for my dad and homework for college, then next week it's alllll school). I MIGHT get a chance to do some stuff Tuesday, dunno...

Anyway, it's real simple, if you don't care too much about knowing exactly what frequency you're listening to. You find a receiver schematic on the net (I'll try to find one for you if you want), then instead of using the coils described, you experiment with your own - larger diameter, longer length, closer turns, further spread apart, center tapped, etc.

You'll need a variable capacitor. Probably best to go to the Dollar General and pick up one of those cheapie $5 rotary tunable (the kind that use a knob) handheld AM/FM receivers. Then, just steal the variable cap out of it. It will have six leads on it, for 4 possible pairs (the two middle leads are tied together (common). There will be a 20-40 pf pair, and a 20-120 pf pair. The 20-120 will give better frequency spread, but very coarse tuning and maybe a touch of selectivity loss. Still, with the right coils, the 20-40 pf pair should do nicely.

In fact, now that I think about it, you might be able to make do with just one of those by changing the coils (there are usually only 2 or 3 of them).

Wow, a $5 portable 6m receiver that can also pick up low VHF TV channels - excellent!

FWIW, I've built an FM Broadcast band transmitter... only 18 parts, not counting breadboard/wire/antenna/input/LED parts, and I get 1/8 mile range on it. Anywhoo, I have been able to interfere with my TV (only a few feet away) by using different coils and capacitor leads, so it should be fairly easy to get what you want for cheap if you're patient and don't mind fiddling with coils and such. Of course, it's not going to receive beautifully, nor very selectively, but it should be able to pick up ppl in your area.

Let me know if you want help finding a simple schematic - and I'm talking
just like 20 parts or so that you can pick up at the radio smack.

--

__ ____
/ _| | _ \ Unregistered Linux User #18,000,002
| |__ | _ \
__/ |___/ Sink the ship to reply by email.

260. Re: Need info from old Mini-Circuits (MCL) Catalog

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 08:37:44 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <sX7Mb.13715$6y6.375994@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29547

I know how that can be.....parts for older units are hard to
get ahold of. I remember years ago, I called Rockwell for a quote on the
main tuning knob for a 651S-1. The price for tooling, etc was 5000 dollars!
That receiver is no longer supported, and the only way to get ahold of parts
for that unit is from the surplus market.
Same thing goes for the KWM380/HF380.

Pete

Michael A. Terrell <mike.terrell@earthlink.net> wrote in message
news:3FF975C5.A77F0CC0@earthlink.net...
> Pete KE9OA wrote:
> >
> > Hi Michael,
> > I was in the Synthesizer Group, so I didn't have my hand
> > in those projects that you mentioned.
> > Pretty cool, on those microwave parts that you have on hand.
> > I used to find those kinds of cool things when I visited the Rockwell
> > Inventory Disposal store. I need to get out there again.....
> >
> > Pete
>
> I started repairing the Collins/Rockwell receivers in self defense.
> They decided that we had to rent a loaner from them, or they wouldn't
> repair our equipment. They charged $150/month rent, and took over six
> months to fix a receiver. The typical bill was over $1200. I had the
> manual, so I popped one open and found the first LO was fried. Rockwell
> told me the microwave transistor was 1500, minimum ordered of 18 parts
> because it was out of stock. The transistor was a die mounted to a gold
> stud, and covered with a drop of epoxy, and no part number. New
> Microdyne LPR receivers were right at $1000, and worked a lot better so
> I told them to forget it, that we were going to repair what we could,
> and replace them with the LPR units, when we had to. I fixed most of
> them in under one hour bench time, and less than $20 in parts. The
> biggest problem with them was they ran way too hot, and over a five year
> period, the circuit boards developed a large black spot in the center of
> the board as they cooked themselves to death. Still, it was my first
> work with solid state microwave equipment.
>
> I found a VCO board for a Microdyne synthesizer in my junk the other
> day. They had used the design for years, and it was becoming harder for
> the techs to get them to meet the specs. I was asked to work on them for
> while and found a number of problems with the design, and parts that
> were selected to replace obsolete parts. I learned a lot of tricks to
> clean up a PLL circuit fixing a mountain of rejected modules. It was

> harder work convincing both design and manufacturing engineering to
> correct the problems, than it was to find the problems.
>
>
>
> --
> We now return you to our normally scheduled programming.
>
> Michael A. Terrell
> Central Florida

261. Re: test de G4SVV

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 09:57:06 UTC
From: Martin <admin@127.0.0.1>
Message-ID: <btr7lg$3nj$1$8300dec7@news.demon.co.uk>
Source record: 29548

What you testing ?
Martin

"leesautos" <dave@leesautos.demon.co.uk> wrote in message
news:btjm5u$98a$1$830fa795@news.demon.co.uk...
>
>

262. Overvoltage and reverse voltage protection

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 11:44:19 UTC
From: Richard Hosking <zaprichardh@iinet.net.au>
Message-ID: <40013713.30203@iinet.net.au>
Source record: 29549

Dear all
I want to design a power supply for a low power rig with protection for reverse and overvoltage. The requirement would be about 1A at 12-14V. What is the best way of achieving this? I guess a diode would give reverse voltage protection but the 0.6V drop is a problem.

Richard

263. SMPS and noise

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 11:52:46 UTC
From: Richard Hosking <zaprichardh@iinet.net.au>
Message-ID: <4001390E.9050505@iinet.net.au>
Source record: 29550

Dear all
I want to design a power supply for a low power portable HF SSB rig with maximum efficiency from a 12V battery
I will need +1.8V at around 200mA, +5V at low current, and +/-12V, with the +12V at 1A unregulated. I thought of using a MAX1865 SMPS chip which has multiple outputs with good efficiency. However I am conscious that in a quiet analogue environment, the SMPS may be a problem with switching noise. Is this a feasible idea? Should I use several separate chips? What precautions should be taken? (I have read the Maxim app notes on PCB layout and noise reduction, but I am not sure whether this will be sufficient in this environment)

Thanks

Richard

264. Re: Need info from old Mini-Circuits (MCL) Catalog

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 13:32:58 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <J5ydnfc8JbW90pzdRVn-jg@ctc.net>
Source record: 29551

> I know how that can be.....parts for older units are hard to
> get ahold of. I remember years ago, I called Rockwell for a quote on the
> main tuning knob for a 651S-1. The price for tooling, etc was 5000
dollars!
> That receiver is no longer supported, and the only way to get ahold of
parts
> for that unit is from the surplus market.
> Same thing goes for the KWM380/HF380.
>
They can not make any money if they do not sell ney radios. Most companies make and support items for a short period of time. After that they have the next modle ready to go. By pricing the repairs at a very high price many will buy the new stuff. It is difficult to keep up with all the parts of equipment that is years old.

I forgot the price but in the news paper about 10 years ago it cost the military about $ 20 K just to get a diode that should have cost a couple of dollars. The military was out of them and the manufacture had to make a run of a few thousand . You just can not make one simiconductor.

265. Re: Overvoltage and reverse voltage protection

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 14:05:21 UTC
From: mike@corn2.freeserve.co.uk
Message-ID: <40015805.764262144@news.freeserve.net>
Source record: 29552

On Sun, 11 Jan 2004 19:44:19 +0800, Richard Hosking
<zaprichardh@iinet.net.au> wrote:

>Dear all
>I want to design a power supply for a low power rig with protection for
>reverse and overvoltage. The requirement would be about 1A at 12-14V.
>What is the best way of achieving this? I guess a diode would give
>reverse voltage protection but the 0.6V drop is a problem.
>
>Richard
>
Rick,
one way for reverse protection is to include a bridge recifier in the
rigs power line (internally fitted), but this causes a drop in
available volts.

I prefer a diode into a relay coil, with the relay contacts enabling
the power when the relay coil is correctly polarised and powered (
also internally fitted).

This enables full volts to the rig and also gives reverse protection,
however this is at the cost of further (and some may say excessive)
drain of the power source.
Over voltage should be by fuse and a crowbar circuit. Do a search on
crowbar for details.

The diode + relay circuit should be obvious to you, I use a 9v relay
coil with a 1N4001 in the activation side and a DPDT contact,in
parallel, to switch the power. For the power you are talking about a
14pin DIL relay should be adequate.

HTH, Mike W, G8NXD qthr

266. Re: How to build 50 Mhz (6m) receiver for AM/CW/SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 15:21:21 UTC
From: Circuit Breaker <bagboy6437@shipaol.com>
Message-ID: <pan.2004.01.11.15.21.19.580789@bellsouth.net>
Source record: 29553

Mitar G. Kolac wrote:

> Hi!
>
> I I am interested in building a simple receiver to listen on 6m band. I
> have tried to search the net but without success. Any suggestion?

> I have some experience in building things from kits but do not have
> deeper knowledge in electronics.

Mitar

I found some time this morning and decided to go ahead and search for some radios... I don't know what your requirements are, in total, nor do I know what search engine you use, but I used google and found this results page:

http://www.google.com/search?q=schematic+fm+radio+receiver

Of particular interest to me personally was found on the first page, about the sixth result:

http://www.commlinx.com.au/rf.htm

There are many others in the results, and yes, you'll have to sift through some other very distracting (read: Interesting) stuff to find the receivers, but they're there.

HIH, and good luck

73, ke4edd
--
__ ____
/ _| | _ \ Unregistered Linux User #18,000,002
| |__ | _ \
__/ |___/ Sink the ship to reply by email.

267. Re: Overvoltage and reverse voltage protection

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 15:34:12 UTC
From: Doug Smith W9WI <w9wi@invalid.invalid>
Message-ID: <40016CF4.6030500@invalid.invalid>
Source record: 29554

Mike W wrote:
> Over voltage should be by fuse and a crowbar circuit. Do a search on
> crowbar for details.

If you already have a fuse & crowbar circuit for overvoltage, wouldn't the easy way to handle reverse polarity be a diode hooked in the (normally) non-conducting direction across the output?
--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com

268. Re: Russian transistor cross

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 17:01:58 UTC
From: cirip <cirip@NOT_VALID.com>
Message-ID: <akfMb.90882$AJB.2243@news04.bloor.is.net.cable.rogers.com>
Source record: 29555

Hi Rob,

KT315 is npn, KT361 in pnp. Both are 150mW, about 25V, 50mA, low frequency.
Seen from the marking, leads down, left to right: ECB. I guess any Si BJT
would be able to replace them.
You need any other info?

Cirip

"rob34" <rob34@infinet.com> wrote in message
news:vvl6n0211d4465@corp.supernews.com...
> Does anybody know of a site where I can cross russian transistor numbers
> over to american? I can probably guess at a replacement since they are
> small signal transistors. The transistor numbers are KT315 and KT361.
> Thanks, Rob

269. Re: Need info from old Mini-Circuits (MCL) Catalog

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 17:37:25 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <400189CC.D45A398E@earthlink.net>
Source record: 29556

Ralph Mowery wrote:
>
> > I know how that can be.....parts for older units are hard to
> > get ahold of. I remember years ago, I called Rockwell for a quote on the
> > main tuning knob for a 651S-1. The price for tooling, etc was 5000
> dollars!
> > That receiver is no longer supported, and the only way to get ahold of
> parts
> > for that unit is from the surplus market.
> > Same thing goes for the KWM380/HF380.
> >
> They can not make any money if they do not sell ney radios. Most companies
> make and support items for a short period of time. After that they have the
> next modle ready to go. By pricing the repairs at a very high price many
> will buy the new stuff. It is difficult to keep up with all the parts of
> equipment that is years old.

They already had the bare dies, and the mounts. These receivers were barely four years old and had cost close to $5,000 each we had about 100 of them in service. They had a high failure rate and had used up all their spares and wanted us to pay more than the price of a new unit per transistor, so I fixed the units I could, and replaced the others with new Microdyne equipment. It wasn't very long before no one would buy their commercial SAT TV equipment because of poor support. By the time they were out of their hand mounted dies they could have bought a comparable part already assembled for repairs. I worked in that business a few years ago, and the company supported most equipment for 15 years. When they dropped their commercial SAT TV product line, they sold the remaining parts and all rights to one of their techs, and he still supports them from his one man shop.

> I forgot the price but in the news paper about 10 years ago it cost the
> military about $ 20 K just to get a diode that should have cost a couple of
> dollars. The military was out of them and the manufacture had to make a run
> of a few thousand . You just can not make one semiconductor.

There is a good chance that while they were looking for that part, another military installation was pitching it into the scrap bin to be auctioned off for salvage. Today there are companies that specialize in producing short runs of obsolete semiconductors, and others that buy up small stocks of every part they find on the spot market to provide EOL support.

Lansdale is one company that is licensed by Motorola / ON Semi to to manufacture most of their discontinued products.

http://shop.store.yahoo.com/americanmicrosemiconductor/index.html is
a company with a lot of oddball semis for EOL support.
--
We now return you to our normally scheduled programming.

Take a look at this little cutie! ;-)
http://home.earthlink.net/~mike.terrell/photos.html

Michael A. Terrell
Central Florida

270. Re: Overvoltage and reverse voltage protection

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 17:47:25 UTC
From: Jim Weir <jim@rst-engr.com>
Message-ID: <0u2300tds03aif4t5sevbh8la4emv34flj@4ax.com>
Source record: 29557

I'm not understanding something here. You want to design a power supply that protects against reverse voltage and overvoltage. OK. Is this power supply a battery or are you actually building a power supply that runs from the wall outlet?

The requirements are quite different, depending on what you are trying to achieve.

Jim

Richard Hosking <zaprichardh@iinet.net.au>
shared these priceless pearls of wisdom:

->Dear all
->I want to design a power supply for a low power rig with protection for
->reverse and overvoltage.

Jim Weir, VP Eng. RST Eng. WX6RST
A&P, CFI, and other good alphabet soup

271. Re: Overvoltage and reverse voltage protection

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 17:56:07 UTC
From: "Dr. A.T. Squeegee" <SpammersArePondScum@Dev.Null>
Message-ID: <MPG.1a6b2e0fce75ea30989bf2@192.168.42.131>
Source record: 29558

In article <40013713.30203@iinet.net.au>, zaprichardh@iinet.net.au
says...

> Dear all
> I want to design a power supply for a low power rig with protection for
> reverse and overvoltage. The requirement would be about 1A at 12-14V.
> What is the best way of achieving this? I guess a diode would give
> reverse voltage protection but the 0.6V drop is a problem.

Power Schottky diodes are available that have a forward voltage
drop of 0.3 or less. More expensive, yes, but they really do work.

--
Dr. Anton Squeegee, Director, Dutch Surrealist Plumbing Institute
(Known to some as Bruce Lane, KC7GR)
kyrrin a/t bluefeathertech d-o=t c&o&m
Motorola Radio Programming & Service Available -
http://www.bluefeathertech.com/rf.html
"Quando Omni Flunkus Moritati" (Red Green)

272. Re: Tranciever

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 17:58:19 UTC
From: "Dr. A.T. Squeegee" <SpammersArePondScum@Dev.Null>
Message-ID: <MPG.1a6b2e9137482622989bf3@192.168.42.131>
Source record: 29559

In article <3db69baa.50576350@news.verizon.net>,
bhockenberry@verizon.net says...

> Sorry about any miss spellings, hand injury put the drop on my rapid
> typing. (Big bad cat.)

Ooooh! Ouch!! I've had that happen a time or two. Isn't it amazing
how such normally placid critters have such sharp pins built in?

Hope it heals up OK. Keep the peace(es).

--
Dr. Anton Squeegee, Director, Dutch Surrealist Plumbing Institute
(Known to some as Bruce Lane, KC7GR)
kyrrin a/t bluefeathertech d-o=t c&o&m
Motorola Radio Programming & Service Available -
http://www.bluefeathertech.com/rf.html
"Quando Omni Flunkus Moritati" (Red Green)

273. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 18:17:00 UTC
From: LA8AK@online.no
Message-ID: <40018585.135308503@news.online.no>
Source record: 29561

On Sat, 10 Jan 2004 12:50:46 +0200, Paul Keinanen <keinanen@sci.fi>
wrote:

>On Fri, 9 Jan 2004 16:31:56 -0800, "John Moriarity" <k6qq@hdo.net>
>wrote:
>
>>> One technique to improve the phase noise in wide-band VCO's was shown by
>>> Ulrich Rhode. He uses several diodes in parallel in order to decrease the RF
>>> current in each diode, reportedly lowering losses and improving noise. I
>>> never tried it myself.
>
>Or is it simply that when using multiple varactors in parallel, the
>amount of capacitance needed from each varactor is reduced, hence a
>higher tuning voltage must be used with the same inductance ? With a
>high tuning voltage, the capacitance/voltage ratio is smaller, hence
>the capacitance difference would be smaller on the separate RF half
>cycles. This would reduce the phase noise.
>
>>If the diodes are the limiting factor, it can help.
>>The second diode seemed to do the most good,
>>the third, a little more, but any more didn't help
>>(in my designs).
>
>Your observations would support my theory, since adding further
>varactors would only increase the tuning voltage slightly with the
>same inductance.
>
>Paul OH3LWR
>

suppose the anti-paralell configuration could improve it further like
http://home.online.no/~la8ak/images/1et27.gif , first got the idea
from high level PIN switch in Electronics design, but have not seen
the application elsewhere

JM
http://home.online.no/~la8ak/L2.htm
--
Amount of SPAM is so large that MailWasher must delete 99% of the incoming mails
Cannot check every email manually. Please use intelligent title for email.
Mails without titles or using just "hi" is deleted

274. Re: Need info from old Mini-Circuits (MCL) Catalog

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 18:17:00 UTC
From: LA8AK@online.no
Message-ID: <40018055.133980297@news.online.no>
Source record: 29562

On Sun, 11 Jan 2004 08:32:58 -0500, "Ralph Mowery" <rmowery@ctc.net>
wrote:

>
>I forgot the price but in the news paper about 10 years ago it cost the
>military about $ 20 K just to get a diode that should have cost a couple of
>dollars. The military was out of them and the manufacture had to make a run
>of a few thousand . You just can not make one simiconductor.
>
It is not just a question about MAKING, the army must use MIL-SPEC
devices, and how do they go on making such.... They probably cannot
use an ordinary device for any reason - even in non-critical
applications. Take 2N525 , it is MIL-spec'ed, but most of them are
probably defective today and it has been much better devices to find
for the last 40 years

In British Telecom we had to use CV-numbered semiconductors, although
we could use normal types in the IMTR labs, but it should be
equivalent for a CV-numbered device, the only one I remember now - 25
years later is CV7127. Fortunately not so stupid in Norwegian Telecom

-jm
http://home.online.no/~la8ak/L2.htm
--
Amount of SPAM is so large that MailWasher must delete 99% of the incoming mails
Cannot check every email manually. Please use intelligent title for email.
Mails without titles or using just "hi" is deleted

275. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 18:17:00 UTC
From: LA8AK@online.no
Message-ID: <400182b3.134586414@news.online.no>
Source record: 29563
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 6 Jan 2004 17:26:59 -0600, "Steve Nosko"
<suteuve.nosukowicuz@moutouroula.com> wrote:

>Motorola's first solid state 450 car phone, the MK, used a 50 W 150 MHz PA
>followed by a varactor tripler for 10W at 450. Varactor triplers are tricky
>however.
>
>Steve K;9;d/c/i
>
The worst is suppression of 150MHz, it is almost impossible to
suppress it. Bought some UK commercial integrated modules for 432MHz
which was fed from 144MHz 1W, had a 20W amplifier within a very well
screened and silvered box, but radiation on 144MHz were almost
impossible to suppress, the only way out was to place it deep at the
lowest point of the basement with ferrite chokes on the cables

LA8AK
--
Amount of SPAM is so large that MailWasher must delete 99% of the incoming mails
Cannot check every email manually. Please use intelligent title for email.
Mails without titles or using just "hi" is deleted

276. Re: How to build 50 Mhz (6m) receiver for AM/CW/SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 18:17:01 UTC
From: LA8AK@online.no
Message-ID: <400186ad.135603774@news.online.no>
Source record: 29564

On Sat, 10 Jan 2004 17:09:04 GMT, "Pete KE9OA"
<n.gianakopoulos@worldnet.att.net> wrote:

>That would get you started, but you would need to change the front end coils
>in order to make that work. There wouldn't be enough tuning range with the
>current front end components. You might be able to change the padding caps,
>but still........
>
>Pete
>
..and some CB sets use ceramic filters for front-end selectivity, so
it might be a problem.

JM
http://home.online.no/~la8ak/c.htm
--
Amount of SPAM is so large that MailWasher must delete 99% of the incoming mails
Cannot check every email manually. Please use intelligent title for email.
Mails without titles or using just "hi" is deleted

277. Re: How to build 50 Mhz (6m) receiver for AM/CW/SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 18:17:01 UTC
From: LA8AK@online.no
Message-ID: <4001876f.135798297@news.online.no>
Source record: 29565

On 10 Jan 2004 18:28:11 GMT, et472@FreeNet.Carleton.CA (Michael Black)
wrote:

>
>There was an article about doing this in 73 about twenty years ago,
>when conversions of PLL CB sets were alll the rage. It counted on
>the injection frequency being on the high side, so the image frequency
>was in the six meter band. I can't remember whether it worked out
>directly, or if one had to fiddle with something.
>
>Pete's right, the front end would have to be adjusted.
>
It was a series of articles in an English magazine about conversions,
and believe I've seen a book mentioned at RSGB bookshop

Another idea is to use the 27MHz exciter and receiver as original
instead of converting it, OZ7IS Ivan used a 27MHz transceiver with
70cm transverter for a simple solution in his car

73
Jan-Martin
http://home.online.no/~la8ak/d.htm
--
Amount of SPAM is so large that MailWasher must delete 99% of the incoming mails
Cannot check every email manually. Please use intelligent title for email.
Mails without titles or using just "hi" is deleted

278. Re: SMPS and noise

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 18:17:28 UTC
From: fmmck@aol.com
Message-ID: <20040111131728.14277.00003000@mb-m28.aol.com>
Source record: 29560

<< However I am conscious that
in a quiet analogue environment, the SMPS may be a problem with
switching noise. Is this a feasible idea? >>

Richard-

This will probably be a good learning experience for you.

I purchased the Radio Shack switch-mode power supply, and was not surprised when it caused severe interference with my receiver. Then I bought an MFJ 25 ampere supply that had a good reputation, but it also caused i some interference.

When I bought a new Icom rig, it came with their switching supply. Although it is the quietest of the three, there is also an increase in the noise floor when it is in use.

To be fair, I must mention that I'm using a magnet-mount antenna on a nearby clothes dryer. An outdoor antenna would certainly receive less radiation from the power supply. At least you see how easy it is to pick up the switching noise, and how hard it may be to eliminate it!

73, Fred, K4DII

279. Need help to ID this keyer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 18:52:20 UTC
From: Shane <noemail@replygroup.com>
Message-ID: <BXgMb.1100$JL4.7892@newsfep4-glfd.server.ntli.net>
Source record: 29566

I was given this a while back by a friend, unfortunately he had back wired it and ended its life, does anyone know or recognise this kit/circuit? as I really need to get hold of parts list/ schematic.

here are some pics.

http://homepage.ntlworld.com/shane.rea/keyer/1.jpg
http://homepage.ntlworld.com/shane.rea/keyer/2.jpg
http://homepage.ntlworld.com/shane.rea/keyer/3.jpg
http://homepage.ntlworld.com/shane.rea/keyer/4.jpg
http://homepage.ntlworld.com/shane.rea/keyer/5.jpg

Thanks in advance for any info

Shane

280. PIC Basic Programming

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 19:55:30 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <SShMb.8391$TC6.3951@nwrdny03.gnilink.net>
Source record: 29567

Any of you who are interested programming PICs with a Basic compiler might want to take a look at this site:
http://www.oshonsoft.com/

This is a complete Pic Basic Integrated Development Environment (IDE) with some very nice simulation tools included. Time-limited demo version is free. Registered version is only $19! Competitive products sell for many hundreds and aren't nearly as complete.

Joe
W3JDR

281. Re: Need help to ID this keyer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 20:05:30 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1003b3slij80t0a@corp.supernews.com>
Source record: 29568

It was obviously hand-built, so it's probably not from a kit. You'd have a better chance of IDing it if you posted the list of IC's -- that may ring a bell for someone.

Better yet, since all the IC's are socketed and since reversing the power supply probably damaged any that aren't destroyed completely, why not replace them wholesale?

Or keep the nicely made mechanical work in the cabinet and put in brand new keyer guts? This may be the least expensive of all.

"Shane" <noemail@replygroup.com> wrote in message news:BXgMb.1100$JL4.7892@newsfep4-glfd.server.ntli.net...
> I was given this a while back by a friend, unfortunately he had back wired
> it and ended its life, does anyone know or recognise this kit/circuit? as
I
> really need to get hold of parts list/ schematic.
>
> here are some pics.
>
> http://homepage.ntlworld.com/shane.rea/keyer/1.jpg
> http://homepage.ntlworld.com/shane.rea/keyer/2.jpg
> http://homepage.ntlworld.com/shane.rea/keyer/3.jpg
> http://homepage.ntlworld.com/shane.rea/keyer/4.jpg
> http://homepage.ntlworld.com/shane.rea/keyer/5.jpg
>
> Thanks in advance for any info
>
> Shane
>
>

282. Re: Need help to ID this keyer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 20:18:19 UTC
From: Keyboard In The Wilderness <KIYW@zilch.net>
Message-ID: <gciMb.60470$m83.10295@fed1read01>
Source record: 29569

With the perf board wiring -- sure looks like a homebrew project -- not a
kit.

Wiring and panel IDs appear nicely done.

A lot of these homebrew projects used a Curtis keyer chip 8044ABM -- see
URL:
http://www.arrl.org/news/features/2002/02/04/2/?nc=1

Good Luck
--
73 From The Wilderness Keyboard

"Shane" <noemail@replygroup.com> wrote in message
news:BXgMb.1100$JL4.7892@newsfep4-glfd.server.ntli.net...
> I was given this a while back by a friend, unfortunately he had back wired
> it and ended its life, does anyone know or recognise this kit/circuit? as
I
> really need to get hold of parts list/ schematic.
>
> here are some pics.
>
> http://homepage.ntlworld.com/shane.rea/keyer/1.jpg
> http://homepage.ntlworld.com/shane.rea/keyer/2.jpg
> http://homepage.ntlworld.com/shane.rea/keyer/3.jpg
> http://homepage.ntlworld.com/shane.rea/keyer/4.jpg
> http://homepage.ntlworld.com/shane.rea/keyer/5.jpg
>
> Thanks in advance for any info
>
> Shane
>
>

283. Re: Overvoltage and reverse voltage protection

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 20:27:55 UTC
From: LA8AK@online.no
Message-ID: <400198ff.140294700@news.online.no>
Source record: 29570

On Sun, 11 Jan 2004 14:05:21 GMT, mike@corn2.freeserve.co.uk (Mike W)
wrote:

>
>The diode + relay circuit should be obvious to you, I use a 9v relay
>coil with a 1N4001 in the activation side and a DPDT contact,in
>parallel, to switch the power. For the power you are talking about a
>14pin DIL relay should be adequate.
>
>HTH, Mike W, G8NXD qthr

I'd like to call it "the PYE method" since it is generally applied in
those Westminster, Vanguard and Cambridge sets, while other
manufacturers only use a diode. I've copied it for the larger sets
which are often used in different places. The application of relay has
the advantage that nothing happens if you use the wrong polarity -
unless you have shortcircuit between two chassises, then you should
apply a two-pole relay.
Make sure that the relay stays operated under different operation,
check that the relay operates with 9V. Remember to put a diode or
other spark suppression across the coil, too.

73
LA8AK, http://home.online.no/~la8ak/c.htm
--
Amount of SPAM is so large that MailWasher must delete 99% of the incoming mails
Cannot check every email manually. Please use intelligent title for email.
Mails without titles or using just "hi" is deleted

284. Re: Overvoltage and reverse voltage protection

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 21:17:43 UTC
From: dplatt@radagast.org
Message-ID: <1003fbndulh9l99@corp.supernews.com>
Source record: 29571

In article <MPG.1a6b2e0fce75ea30989bf2@192.168.42.131>,
Dr. A.T. Squeegee <SpammersArePondScum@Dev.Null> wrote:

>> I want to design a power supply for a low power rig with protection for
>> reverse and overvoltage. The requirement would be about 1A at 12-14V.
>> What is the best way of achieving this? I guess a diode would give
>> reverse voltage protection but the 0.6V drop is a problem.
>
> Power Schottky diodes are available that have a forward voltage
>drop of 0.3 or less. More expensive, yes, but they really do work.

Another trick I've seen is to use a hefty power MOSFET (one with a low
Rds[on]), with the source and drain leads reversed, in series with the
power. Depending on the voltages involved, you can either connect the
gate directly to the opposite side of the power supply, or (if the
supply voltage may exceed the Vgs limit) to a high-Z resistive divider.

When a power supply of the correct polarity is hooked up, the MOSFET's
intrinsic substrate diode is biased forward (conducting normally) and
the MOSFET is turned on "hard" (giving a low Rds, and thus a very low
forward voltage drop). If the supply is hooked up backwards, the
MOSFET is turned off (the gate is pulled down towards hard depletion)
and the substrate diode is reverse-biased, switching it off.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

285. Re: Overvoltage and reverse voltage protection

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 21:23:21 UTC
From: mike@corn2.freeserve.co.uk
Message-ID: <4001be8d.18852873@news.freeserve.net>
Source record: 29572

On Sun, 11 Jan 2004 21:17:43 -0000, dplatt@radagast.org (Dave Platt)
wrote:

>Another trick I've seen is to use a hefty power MOSFET (one with a low
>Rds[on]), with the source and drain leads reversed, in series with the
>power. Depending on the voltages involved, you can either connect the
>gate directly to the opposite side of the power supply, or (if the
>supply voltage may exceed the Vgs limit) to a high-Z resistive divider.
>
Nice one Dave

286. Re: Why Isn't Anyone Talking About The Jewish Factor? ------ KGYaowZ46hM

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 21:41:08 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <TpjMb.26269$sv6.76957@attbi_s52>
Source record: 29573
Cross-posted to: rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

ANTI-SEMITICISM??

You should be ashamed of yourself!! You won't even list your own name!!

Dave (Rev. Mr.), W1MCE
+ + +

Truth_In_Media@iwazhuh.org.pe wrote:

> Governor Howard Dean is married to a Jewish woman

287. Calibration Cable for a TS-440

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 21:43:26 UTC
From: Valid Email Address <k6372pf02@sneakemail.com>
Message-ID: <ef3909a34b3ba920e5778c1a513a4e3c@news.teranews.com>
Source record: 29574
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Does anyone know of what the calibration cable for a Kenwood TS-440S consists? I'd like to make one, but I can find no information online.

Thanks for any help.

Dan

288. Re: Overvoltage and reverse voltage protection

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 21:56:42 UTC
From: dplatt@radagast.org
Message-ID: <1003hkqobj6pudf@corp.supernews.com>
Source record: 29575

In article <4001be8d.18852873@news.freeserve.net>,
Mike W <mike@corn2.freeserve.co.uk> wrote:

>>Another trick I've seen is to use a hefty power MOSFET (one with a low
>>Rds[on]), with the source and drain leads reversed, in series with the
>>power. Depending on the voltages involved, you can either connect the
>>gate directly to the opposite side of the power supply, or (if the
>>supply voltage may exceed the Vgs limit) to a high-Z resistive divider.

>Nice one Dave

Not my idea originally, by any means. If I recall correctly I first
saw it in Bob Pease's "Troubleshooting Analog Circuits" book - a
text I recommend to anyone who is fiddling around with analog
circuitry in any way.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

289. Re: Why Isn't Anyone Talking About The Jewish Factor? ------ KGYaowZ46hM

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-11 22:12:46 UTC
From: Ken Taylor <ken123@xtra.co.nz>
Message-ID: <btshp1$am9oh$1@ID-76636.news.uni-berlin.de>
Source record: 29576
Cross-posted to: rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

The material in the post was irrelevant to the purpose. The nonsense at the end is (according to reliable 'net urban legend) a crypto key for the real message. Usually these nonsense posts are accompanied by either a low level virus or a racial attack, to distract from the real payload.

Ken

"Dave Shrader" <david.shrader@comcast.net> wrote in message
news:TpjMb.26269$sv6.76957@attbi_s52...
> ANTI-SEMITICISM??
>
> You should be ashamed of yourself!! You won't even list your own name!!
>
> Dave (Rev. Mr.), W1MCE
> + + +
>
> Truth_In_Media@iwazhuh.org.pe wrote:
>
> > Governor Howard Dean is married to a Jewish woman
>

290. Re: Overvoltage and reverse voltage protection

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 00:16:44 UTC
From: Richard Hosking <zaprichardh@iinet.net.au>
Message-ID: <4001E76C.6020103@iinet.net.au>
Source record: 29578

Jim
The rig will be powered from a 12V source eg battery/AC wallwart
/whatever. However, internally the rig needs various voltages, including
1.8V for logic and -12V. I want to ptotect against inadvertent
overvoltage or reverse voltage. I want it to be as efficient as
possible, so I dont want to use a linear regulator. SMPS seems the
obvious choice. I may well shield the PSU section, and isolate the
ground etc to reduce noise. I was seeking advice from the experts here
as to whether the idea is feasible and whether there is a redaymade
solution.

Richard

Jim Weir wrote:
> I'm not understanding something here. You want to design a power supply that
> protects against reverse voltage and overvoltage. OK. Is this power supply a
> battery or are you actually building a power supply that runs from the wall
> outlet?
>
> The requirements are quite different, depending on what you are trying to
> achieve.
>
> Jim
>
>
>
> Richard Hosking <zaprichardh@iinet.net.au>
> shared these priceless pearls of wisdom:
>
> ->Dear all
> ->I want to design a power supply for a low power rig with protection for
> ->reverse and overvoltage.
>
>
> Jim Weir, VP Eng. RST Eng. WX6RST
> A&P, CFI, and other good alphabet soup

291. Re: Overvoltage and reverse voltage protection

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 00:19:20 UTC
From: Richard Hosking <zaprichardh@iinet.net.au>
Message-ID: <4001E808.8050808@iinet.net.au>
Source record: 29577

This sounds like a good solution

Thanks
Richard

Dave Platt wrote:
> In article <MPG.1a6b2e0fce75ea30989bf2@192.168.42.131>,
> Dr. A.T. Squeegee <SpammersArePondScum@Dev.Null> wrote:
>
>
>>>I want to design a power supply for a low power rig with protection for
>>>reverse and overvoltage. The requirement would be about 1A at 12-14V.
>>>What is the best way of achieving this? I guess a diode would give
>>>reverse voltage protection but the 0.6V drop is a problem.
>>
>> Power Schottky diodes are available that have a forward voltage
>>drop of 0.3 or less. More expensive, yes, but they really do work.
>
>
> Another trick I've seen is to use a hefty power MOSFET (one with a low
> Rds[on]), with the source and drain leads reversed, in series with the
> power. Depending on the voltages involved, you can either connect the
> gate directly to the opposite side of the power supply, or (if the
> supply voltage may exceed the Vgs limit) to a high-Z resistive divider.
>
> When a power supply of the correct polarity is hooked up, the MOSFET's
> intrinsic substrate diode is biased forward (conducting normally) and
> the MOSFET is turned on "hard" (giving a low Rds, and thus a very low
> forward voltage drop). If the supply is hooked up backwards, the
> MOSFET is turned off (the gate is pulled down towards hard depletion)
> and the substrate diode is reverse-biased, switching it off.
>

292. Re: Overvoltage and reverse voltage protection

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 00:38:46 UTC
From: LA8AK@online.no
Message-ID: <4001c4d5.151518765@news.online.no>
Source record: 29579

On Sun, 11 Jan 2004 21:23:21 GMT, mike@corn2.freeserve.co.uk (Mike W)
wrote:

>On Sun, 11 Jan 2004 21:17:43 -0000, dplatt@radagast.org (Dave Platt)
>wrote:
>
>>Another trick I've seen is to use a hefty power MOSFET (one with a low
>>Rds[on]), with the source and drain leads reversed, in series with the
>>power. Depending on the voltages involved, you can either connect the
>>gate directly to the opposite side of the power supply, or (if the
>>supply voltage may exceed the Vgs limit) to a high-Z resistive divider.
>>
>Nice one Dave

indeed, if you could tell me about a MOSFET without protexion diode

--
Amount of SPAM is so large that MailWasher must delete 99% of the incoming mails
Cannot check every email manually. Please use intelligent title for email.
Mails without titles or using just "hi" is deleted

293. Re: Why Isn't Anyone Talking About The Jewish Factor? ------ KGYaowZ46hM

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 00:45:18 UTC
From: dplatt@radagast.org
Message-ID: <1003rgunhkcpfa1@corp.supernews.com>
Source record: 29580
Cross-posted to: rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

In article <btshp1$am9oh$1@ID-76636.news.uni-berlin.de>,
Ken Taylor <ken123@xtra.co.nz> wrote:

>The material in the post was irrelevant to the purpose. The nonsense at the
>end is (according to reliable 'net urban legend) a crypto key for the real
>message. Usually these nonsense posts are accompanied by either a low level
>virus or a racial attack, to distract from the real payload.

A more common explanation of the "nonsense at the end" is that it's a
"hashbuster" - a purely random string, different in each individual
copy of the posted or emailed spam. Its goal is to [attempt to]
defeat ISP-based spamfilters, which attempt to identify multi-posted
USENET articles and spam email by looking for identical subjects,
identical contents, etc.

Spammers of all sorts (amtisemitic and otherwise) have been doing this
for years. I believe that some of the better spam-detection software
is now capable of looking for these gibberish words/phrases, and
scoring the articles/email as "probably spam" due to their presence.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

294. Re: Overvoltage and reverse voltage protection

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 03:33:15 UTC
From: dplatt@radagast.org
Message-ID: <10045br72cpttb9@corp.supernews.com>
Source record: 29581

In article <4001c4d5.151518765@news.online.no>,
J M Noeding <LA8AK@Online.NO> wrote:

>>>Another trick I've seen is to use a hefty power MOSFET (one with a low
>>>Rds[on]), with the source and drain leads reversed, in series with the
>>>power. Depending on the voltages involved, you can either connect the
>>>gate directly to the opposite side of the power supply, or (if the
>>>supply voltage may exceed the Vgs limit) to a high-Z resistive divider.
>>>
>>Nice one Dave
>
>indeed, if you could tell me about a MOSFET without protexion diode

That's why I mentioned hooking it up with the source and drain leads
in the reverse of the usual orientation.

In the normal hookup situation, the intrinsic/substrate/protection
diode would prevent the circuit from working as one would want (as you
clearly understand). However, by hooking up the MOSFET "backwards"
(e.g. an NMOSFET with the drain on the negative side), the orientation
of the intrinsic diode is reversed. It'll be forward-biased when the
power supply is hooked up the way you want it, and would be
conductive. It probably won't have a chance to conduct, though, since
you'll be biasing the gate up several volts above either the source or
drain pins, turning on the MOSFET, and the relatively low Rds[on] of
the MOSFET will keep the voltage drop across the MOSFET down below the
substrate diode's voltage drop.

If the supply connections are reversed, the MOSFET itself will be
biased off, and the intrinsic protection diode will be reverse-biased
and will not conduct.

It's an odd trick. Many (most?) JFETs have a highly symmetrical
internal construction - the distinction between source and drain is a
matter of convention rather than construction. A typical MOSFET's
construction is not entirely symmetrical... but, according to the
description I've read of this trick in Pease's book, it _is_
symmetrical enough to allow it to be used with source and drain
reversed, in this particular application. By flipping 'em around, you
make the intrinsic diode work for you rather than against you.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

295. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 05:41:09 UTC
From: James Fenech <james.fenech@xxxnec.com.au>
Message-ID: <1073886069.164414@proxy.nec.com.au>
Source record: 29582

Ok, many of you have suggested rather than just simulation I should actually build something. Joe (W3JDR) has kindly donated a circuit diagram which I started off with.

Best way to get going quickly is dead bug style, soldered straight to the copper side of a PCB. I have never used this style of construction as it looked flimsy, but it looked like a good way to go just for prototyping. Well, the circuit went together fast and the finished product is very steady, so I am now a convert to this construction method! I may need a new iron though, as the basic low power model I have struggled to heat up the large area of board.

Firstly I built the circuit (almost) as directed, slight modifications were made to suit parts I had. Fixed capacitors were used as this allowed evaluation without worrying about the diodes performance. The oscillation voltage across the tank was about 1 vp-p measured with an older 50MHz CRO and a 1:1 probe. Oscillation seemed stable and I liked the result.

Question: I used the ARRL equation for a cylindrical inductor and seemed way off (50%). Should I expect the copper sheet to affect the inductance, and how.

I then replaced the fixed capacitors with BB909 (3-30pF) diodes. The result wasn't so good. Oscillation voltage was less (lower Q tank maybe) and the stablility seemed poor (again poor Q). I will attempt more measurements tonight.

James.

296. Re: Overvoltage and reverse voltage protection

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 07:38:05 UTC
From: Richard Hosking <zaprichardh@iinet.net.au>
Message-ID: <40024EDD.2060008@iinet.net.au>
Source record: 29583

Doing a bit of reading - this device might do the trick

http://www.linear.com/pdf/4411f.pdf

Richard

Richard Hosking wrote:
> Dear all
> I want to design a power supply for a low power rig with protection for
> reverse and overvoltage. The requirement would be about 1A at 12-14V.
> What is the best way of achieving this? I guess a diode would give
> reverse voltage protection but the 0.6V drop is a problem.
>
> Richard
>

297. Re: Overvoltage and reverse voltage protection

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 12:10:41 UTC
From: Sverre Holm <la3za.0junk4me@qsl.net>
Message-ID: <btu2qergi1@maud.ifi.uio.no>
Source record: 29584

Fort hose who want to see schematics, here's a web page with both the MOS
and the relay protection circuits in various versions:

http://www.g4wif.fsnet.co.uk/q_tech12.htm

It comes from the pages of G-QRP club.

--
Sverre Holm, LA3ZA
---
www.qsl.net/la3za

298. Re: Need info from old Mini-Circuits (MCL) Catalog

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 13:32:30 UTC
From: Al <no.spam@here.com>
Message-ID: <no.spam-AA608A.08323112012004@news.verizon.net>
Source record: 29585

In article <40018055.133980297@news.online.no>,
LA8AK@online.no (J M Noeding) wrote:

> On Sun, 11 Jan 2004 08:32:58 -0500, "Ralph Mowery" <rmowery@ctc.net>
> wrote:
>
> >
> >I forgot the price but in the news paper about 10 years ago it cost the
> >military about $ 20 K just to get a diode that should have cost a couple of
> >dollars. The military was out of them and the manufacture had to make a run
> >of a few thousand . You just can not make one simiconductor.
> >
> It is not just a question about MAKING, the army must use MIL-SPEC
> devices, and how do they go on making such.... They probably cannot
> use an ordinary device for any reason - even in non-critical
> applications. Take 2N525 , it is MIL-spec'ed, but most of them are
> probably defective today and it has been much better devices to find
> for the last 40 years
>

The difference between a mil-spec'd part and a commerical part is mainly
one of documentation. A series of tests are then specified for the
completed parts to make sure they meet their specifications. The care
imposed on the manufacturing process ensures that the parts are built
correctly. It says nothing about the robustness of the design though, it
just ensures that the design parameters are met.

Al

--
There's never enough time to do it right the first time.......

299. Re: SMPS and noise

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 13:57:26 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <PfqdnR8sYPKsOp_dRVn-vw@comcast.com>
Source record: 29586

Read Linear Tech www.linear.com 's Application Note 70 -- they have conquered noise by using slew-control switching techniques. Instead of the complete circuit used in the ARRL design you can jump off and use a slew control chip. The prices of the Linear slew control chips are not bad, probably $5 or $6 from Digikey. (and they can be purchased directly from Linear in quantities less than 500.)

The other thing I have pondered is using a regular gate driver and a 2nd order low pass filter to approximate a sine wave. You lose a lot of efficiency going from a square wave to one which is rounded off, and a filter has issues all its own issues, but I would think that "noise" or "hash" would drop tremendously.

Jack

"Richard Hosking" <zaprichardh@iinet.net.au> wrote in message news:4001390E.9050505@iinet.net.au...
> Dear all
> I want to design a power supply for a low power portable HF SSB rig with
> maximum efficiency from a 12V battery
> I will need +1.8V at around 200mA, +5V at low current, and +/-12V, with
> the +12V at 1A unregulated. I thought of using a MAX1865 SMPS chip which
> has multiple outputs with good efficiency. However I am conscious that
> in a quiet analogue environment, the SMPS may be a problem with
> switching noise. Is this a feasible idea? Should I use several separate
> chips? What precautions should be taken? (I have read the Maxim app
> notes on PCB layout and noise reduction, but I am not sure whether this
> will be sufficient in this environment)
>
> Thanks
>
> Richard
>

300. Re: Calibration Cable for a TS-440

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 16:21:13 UTC
From: haf47@juno.com
Message-ID: <f03bf94f.0401120821.3590fd3@posting.google.com>
Source record: 29587
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Valid Email Address <k6372pf02@sneakemail.com> wrote in message
news:<ef3909a34b3ba920e5778c1a513a4e3c@news.teranews.com>...
> Does anyone know of what the calibration cable for a Kenwood TS-440S
> consists? I'd like to make one, but I can find no information online.
>
> Thanks for any help.
>
> Dan

Hi Dan,

Gee, Just when I thought I knew everything about a TS-440, I see/read
something new!!

What exactly is this cable, and what does it calibrate? If you can
tell me more I'll bet I can help you.

I have built a number of interfaces for the TS-440 that connect the
rig to a PC for all kinds of purposes.

73 de WA2AFD

301. Re: Need help to ID this keyer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 16:39:38 UTC
From: Ottar <ok_nothere@online.no>
Message-ID: <4002cec7@news.broadpark.no>
Source record: 29588

Could this be a copy of the Heathkit keyer from the mid seventies ?

It's hard to see the name of the chips and my guess is TTL's.

Just a guess....

ottar

Tim Wescott wrote:

> It was obviously hand-built, so it's probably not from a kit. You'd have
> a better chance of IDing it if you posted the list of IC's -- that may
> ring a bell for someone.
>
> Better yet, since all the IC's are socketed and since reversing the power
> supply probably damaged any that aren't destroyed completely, why not
> replace them wholesale?
>
> Or keep the nicely made mechanical work in the cabinet and put in brand
> new
> keyer guts? This may be the least expensive of all.
>
> "Shane" <noemail@replygroup.com> wrote in message
> news:BXgMb.1100$JL4.7892@newsfep4-glfd.server.ntli.net...
>> I was given this a while back by a friend, unfortunately he had back
>> wired it and ended its life, does anyone know or recognise this
>> kit/circuit? as
> I
>> really need to get hold of parts list/ schematic.
>>
>> here are some pics.
>>
>> http://homepage.ntlworld.com/shane.rea/keyer/1.jpg
>> http://homepage.ntlworld.com/shane.rea/keyer/2.jpg
>> http://homepage.ntlworld.com/shane.rea/keyer/3.jpg
>> http://homepage.ntlworld.com/shane.rea/keyer/4.jpg
>> http://homepage.ntlworld.com/shane.rea/keyer/5.jpg
>>
>> Thanks in advance for any info
>>
>> Shane
>>
>>

302. Re: Need Info on 1 inch CRT

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 16:41:38 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <btuirk$ri7$1@newshost.mot.com>
Source record: 29590

OK This is an all glass, flat-end envelope. Not much larger than a 50C5,
but a bit larger. Coated, can't see inside.
Yikes! they actually used magnetic deflection. I was hoping for
electrostatic, but with 9 pins that may be difficult. Been too long to
remember how many electrodes are needed for grid, focus & any more anodes.
Leseee.
2 fil
1-cathode.
4- dif plates
1-focus
1- accel anode

That's 9......maybe you need more...Oops, forgot the grid. Make the cathode
common with one of the filament lines or make it directly heated.......Oh
well. If it needs coils it'll make a nice conversation piece.

73, Steve

" Uncle Peter" <radioconnectionNO@cox.netSPAM> wrote in message
news:4hWLb.29705$WQ3.6987@lakeread05...
>
> "Michael A. Terrell" <mike.terrell@earthlink.net> wrote in message
> news:3FFB51A4.6BB59D5D@earthlink.net...
> > > If it is from a camcorder, it should have a deflection yoke. How
> > about some pictures? It might trigger someone to recognize it.
> >
> > Suitable newsgroups are:
> > news:alt.binaries.schematics.electronic
> > news:alt.binaries.pictures.radio
> >
> > Also, you can lay small parts on a flatbed scanner, cover them with a
> > sheet of white paper, and put a light over the paper to reduce shadows.
> > Yo can get good close-ups this way. I usually scan at 600 DPI, and
> > reduce image size to what I want. I would post a picture, an ask the
> > guys on news:sci.electronics.repair if anyone there can identify it.
> >
> > --
> > We now return you to our normally scheduled programming.
> >
> > Take a look at this little cutie! ;-)
> > http://home.earthlink.net/~mike.terrell/photos.html
> >
> > Michael A. Terrell
> > Central Florida
>

> Many early systems used separate cameras and a suitcase
> VCR. My RCA camera had a removable viewfinder which
> used a minature CRT with a yoke.
>
> Pete
>
>

303. Re: Calibration Cable for a TS-440

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 16:55:45 UTC
From: Clif Holland <avvidclif@ev1.net>
Message-ID: <1005kcna55tl1cf@corp.supernews.com>
Source record: 29589
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

It's a simple wire that the owners manual on page 24 shows where to hook it
up. Instructions on usage are also there.

--
Clif Holland, KA5IPF
AVVid
Authorized Kenwood and Icom Service Center
816 W Shady Grove Rd
Irving, TX 75060

www.avvid.com

1-800-214-5779
972-870-0630 (Local)
"Howard" <haf47@juno.com> wrote in message
news:f03bf94f.0401120821.3590fd3@posting.google.com...
> Valid Email Address <k6372pf02@sneakemail.com> wrote in message
news:<ef3909a34b3ba920e5778c1a513a4e3c@news.teranews.com>...
> > Does anyone know of what the calibration cable for a Kenwood TS-440S
> > consists? I'd like to make one, but I can find no information online.
> >
> > Thanks for any help.
> >
> > Dan
>
> Hi Dan,
>
> Gee, Just when I thought I knew everything about a TS-440, I see/read
> something new!!
>
> What exactly is this cable, and what does it calibrate? If you can
> tell me more I'll bet I can help you.
>
> I have built a number of interfaces for the TS-440 that connect the
> rig to a PC for all kinds of purposes.
>
> 73 de WA2AFD

304. Re: Need help to ID this keyer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 20:05:03 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <1005vfmlh8g4a0d@corp.supernews.com>
Source record: 29591

"Ottar" <ok_nothere@online.no> wrote in message
news:4002cec7@news.broadpark.no...

> Could this be a copy of the Heathkit keyer from the mid seventies ?

Nope. I think the Heathkit had a lot less parts

> It's hard to see the name of the chips and my guess is TTL's.

I blew up the picture and I *think* I saw 4401 and 4013. For a while there
CMOS parts were all the rage in keyers.

> > Or keep the nicely made mechanical work in the cabinet and put in brand
> > new
> > keyer guts? This may be the least expensive of all.

The mechanical work really is nice, isn't it. These days you can replace
the whole works with a TiCK or any of a hundred TiCK clones, or better yet,
stick in a PIC and roll your own logic so you get the feature set you want.

I think the bottom-end TiCK chip is around ten bucks. All it needs is a
power supply, which can be a watch battery, and a keying transistor, which
is probably already there ... maybe the supply, too. For a few more bucks
you can add all sorts of features, either through higher end TiCK's
(www.bright.net/~kanga/kanga) or Island Keyer (www.morsex.com), or the K1EL
keyer (www.k1el.com), or .. or ... or ...

..

305. AVR C-programming (was Re: PIC Basic Programming)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 21:26:10 UTC
From: Dana Myers <k6jq@arrl.net>
Message-ID: <40030ebf$1@wobble>
Source record: 29593

W3JDR wrote:
> Any of you who are interested programming PICs with a Basic compiler might
> want to take a look at this site:
> http://www.oshonsoft.com/
>
> This is a complete Pic Basic Integrated Development Environment (IDE) with
> some very nice simulation tools included. Time-limited demo version is free.
> Registered version is only $19! Competitive products sell for many hundreds
> and aren't nearly as complete.

I've recently started using the WinAVR toolkit, which
consists of GCC ported to the AVR family, a very
comprehensive avr-libc implementation, and all of
the associated Gnu-based build tools. It's really
quite snazzy and it's the price that hams love: free.

I did spend $80 for the Atmel STK500 programmer kit from
Digi-Key, but that's all I needed.

Overall, the AVR port of GCC seems excellent, really excellent.

Dana K6JQ

306. Re: Need data for Siemens SDA4212 divide by 64 prescaler

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 22:10:08 UTC
From: Herbert Knapp <h_knapp@gmx.net>
Message-ID: <btv2fo$90j$02$1@news.t-online.com>
Source record: 29592

J M Noeding wrote:
>
> Hi
>
> need to help a mate with a SDA4212 divider which is the only I could
> find in my shack, but can't find any good data for it. It seems to be
> very popular in Slovenia, but it is sorts of language problems....
> Believe we bought them as replacement for U884 or U664 when it was
> popular in Germany, but can't find the reference today.
>
Hi,

according to an old issue of UKW-Berichte the pinout is:

1: NC
2: IN
3: /IN
4: GND
5: Divide ratio (0V: divide ratio 256; +5V: divide ratio 64)
6: OUT
7: /OUT
8: +5V

Frequency range 70 MHz to 1300 MHz

I might also have a data sheet but it will take some time to find it.

Herbert

307. Re: AVR C-programming (was Re: PIC Basic Programming)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 22:18:37 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <10067a1djq7f0c8@corp.supernews.com>
Source record: 29594

I feel the AVR instruction set is superior to the PIC. It's a much easier instruction set to program for in assembly, and it is designed with C in mind. This means that the AVR will run the same thing faster, and with less code space. If it were an engineer asking I would recommend that the AVR be given precidence. If you must have BASIC, or if you must have some peripheral that's available on the PIC that's not available on the AVR, then that's the way you'll need to go.

Otherwise learn C and use an AVR.

"Dana Myers" <k6jq@arrl.net> wrote in message news:40030ebf$1@wobble...
> W3JDR wrote:
> > Any of you who are interested programming PICs with a Basic compiler might
> > want to take a look at this site:
> > http://www.oshonsoft.com/
> >
> > This is a complete Pic Basic Integrated Development Environment (IDE) with
> > some very nice simulation tools included. Time-limited demo version is free.
> > Registered version is only $19! Competitive products sell for many hundreds
> > and aren't nearly as complete.
>
> I've recently started using the WinAVR toolkit, which
> consists of GCC ported to the AVR family, a very
> comprehensive avr-libc implementation, and all of
> the associated Gnu-based build tools. It's really
> quite snazzy and it's the price that hams love: free.
>
> I did spend $80 for the Atmel STK500 programmer kit from
> Digi-Key, but that's all I needed.
>
> Overall, the AVR port of GCC seems excellent, really excellent.
>
> Dana K6JQ

308. Re: Need help to ID this keyer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 22:24:45 UTC
From: Skipp <spammenot@yahoo.com>
Message-ID: <btv6rd$gg0$1@woodrow.ucdavis.edu>
Source record: 29595

It's a pretty standard layout, probably a cmos keyer that someone wired on an experimenters board using telephone wire. You can search through the arrl handbooks for information on earlier cmos keyers.

I've seen a few like it, HRO ("hugh rip off")(not really) which is is Ham Radio Outlet put out a pre-built one knob keyer back in the 80's that looks just like this circuit, less the mechanical keys. There were also projects like it in the handbook, based on revisions of the earlier wb4??? designs... which migrated into the Autek Accu Keyer layout.

It took me almost ten years to find one, but I did locate a replacement which included the circuit diagram. I could make it available on the http://sonic.ucdavis.edu server if you're interested.

The small board underneath is probably a 555 timer set up for sidetone. My old World Radio Labs Galaxy III (3) didn't have one, so we'd have to monitor our outbound cw by listening to the power supply hum.

cheers

skipp025 at yahoo.com

: Shane <noemail@replygroup.com> wrote:
: I was given this a while back by a friend, unfortunately he had back wired
: it and ended its life, does anyone know or recognise this kit/circuit? as I
: really need to get hold of parts list/ schematic.

: here are some pics.

: http://homepage.ntlworld.com/shane.rea/keyer/1.jpg
: http://homepage.ntlworld.com/shane.rea/keyer/2.jpg
: http://homepage.ntlworld.com/shane.rea/keyer/3.jpg
: http://homepage.ntlworld.com/shane.rea/keyer/4.jpg
: http://homepage.ntlworld.com/shane.rea/keyer/5.jpg

: Thanks in advance for any info

: Shane

309. Re: AVR C-programming (was Re: PIC Basic Programming)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 22:45:32 UTC
From: Dana Myers <k6jq@arrl.net>
Message-ID: <4003215d$1@wobble>
Source record: 29596

Tim Wescott wrote:

> I feel the AVR instruction set is superior to the PIC. It's a much easier
> instruction set to program for in assembly, and it is designed with C in
> mind. This means that the AVR will run the same thing faster, and with less
> code space. If it were an engineer asking I would recommend that the AVR be
> given precidence. If you must have BASIC, or if you must have some
> peripheral that's available on the PIC that's not available on the AVR, then
> that's the way you'll need to go.

I really wasn't trying to say "AVR is better than PIC", I was just
pointing out an alternative that's totally free (and open-source).

> Otherwise learn C and use an AVR.

But, I must say, I totally agree with you. I'm
quite pleased with the AVR-GCC port and avr-libc.
Sure, if you insist on using the full floating-point
printf, it's like 5k for "hello world", but even that's
not bad really.

Dana K6JQ

310. Re: Overvoltage and reverse voltage protection

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 22:49:06 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <btv8cb$143$1@newshost.mot.com>
Source record: 29498

This may need re-stating. The reverse polarity protection goes IN THE
RADIO, not the power supply. Right fellas?
--
Steve N, K,9;d, c. i My email has no u's.

??? Fort Hose... ??? Cute also:

When the clock gets near 12:00 I stick my head in teh co-workers office &
say
Djeet Jet? If the response is no, then;"Tsqueet!"

"Jim Weir" <jim@rst-engr.com> wrote in message
news:0u2300tds03aif4t5sevbh8la4emv34flj@4ax.com...
>
> I'm not understanding something here. You want to design a power supply
that
> protects against reverse voltage and overvoltage. OK. Is this power
supply a
> battery or are you actually building a power supply that runs from the
wall
> outlet?
>
> The requirements are quite different, depending on what you are trying to
> achieve.
>
> Jim
>
>
>
> Richard Hosking <zaprichardh@iinet.net.au>
> shared these priceless pearls of wisdom:
>
> ->Dear all
> ->I want to design a power supply for a low power rig with protection for
> ->reverse and overvoltage.
>
>
> Jim Weir, VP Eng. RST Eng. WX6RST
> A&P, CFI, and other good alphabet soup

311. R&S SA infos

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-12 23:08:36 UTC
From: Fred Bartoli <fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo>
Message-ID: <4003292f$0$17112$626a54ce@news.free.fr>
Source record: 29497
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design,sci.electronics.equipment

Hello,

I'm sorry for crossposting, but I need fast infos if available.

I've the opportunity to acquire for a good price a not so young
Rohde&Schwartz spectrum analyzer :

Polarad 632C-1

Unfortunately, I can't find any infos about it, except I was told it's a
100KHz-1GHz one, and I've got pics of the front and rear panels. But still I
find these infos somewhat meager.

Of course I've googled, tried R&S site and... not avail.

Any info here, advice from who used one...

Thanks,

Fred.

(fu to see)

312. Re: Calibration Cable for a TS-440

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-13 00:01:31 UTC
From: Valid Email Address <k6372pf02@sneakemail.com>
Message-ID: <9e5c385f7e9ca7dfbc6d81f0ee39f7f3@news.teranews.com>
Source record: 29499
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Yes, that is what it seems to be; however, having purchased my TS-440 secondhand, the cable was not supplied, so I had no knowledge of its existence until reading the manual.

What made me think that it was more than a wire was the wording in the manual. It states that this cable has a one-pin-end and a two-pin-end. I did not know if this cable contained some simple circuit or what.

Thanks for the enlightenment.

Dan

Clif Holland wrote:

> It's a simple wire that the owners manual on page 24 shows where to hook it
> up. Instructions on usage are also there.
>

313. Noise in Ford F-150

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-13 01:38:19 UTC
From: Scott <acepilot@bloomer.net>
Message-ID: <nXHMb.2440$tU6.3548@reggie.win.bright.net>
Source record: 29500

Anybody have any ideas to lower noise in my FT-857 mounted in my F-150 pickup? S7-S9 noise (engine running, with NB ON) on 17M (Only band I've tried on HF yet). Antenna is an Outbacker mounted on a mount I welded up for my receiver hitch and puts the base of the antenna at about roof level. Quiet as a mouse when truck is shut off. Go figure...hard to be "mobile" with the engine off ;)

--
Scott N0EDV
Gotta Fly or Gonna Die
http://corbenflyer.tripod.com
Building RV-4

314. Re: Noise in Ford F-150

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-13 01:40:33 UTC
From: wb4una@aol.com
Message-ID: <20040112204033.15336.00003302@mb-m04.aol.com>
Source record: 29501

>
>Anybody have any ideas to lower noise in my FT-857 mounted in my F-150
>pickup? S7-S9 noise (engine running, with NB ON) on 17M (Only band I've
>tried on HF yet). Antenna is an Outbacker mounted on a mount I welded up
>for my receiver hitch and puts the base of the antenna at about roof level.
>Quiet as a mouse when truck is shut off. Go figure...hard to be "mobile"
>with the engine off ;)
>
>--
>Scott N0EDV
>Gotta Fly or Gonna Die
>http://corbenflyer.tripod.com
>Building RV-4
>
you will find the problem in the fuel pump..Ford had a big porblem with it not being grounded.They have a fix for it but you will have to talk to a Ford tech to find it and buy it from them....

Randy

ARS: WB4UNA
Randy Chavis
247 Goff Court
West Columbia
S.C. 29172

315. The Pickett N-16 ES Slide Rule

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-13 03:49:49 UTC
From: jsavard@ecn.aSBLOKb.caNADA.invalid
Message-ID: <400368ef.321301@news.ecn.ab.ca>
Source record: 29510

In the year 2002, someone posted a message to this group noting that he had forgotten the use of the specialized electronic scales on the rear of his Pickett N-16 ES slide rule.

The thread encompassed a total of 30 posts in its life, but in none of the 29 other posts was his question answered, although many posts contained interesting reminisences of that fascinating mathematical instrument, the slide rule. (One or more of those posts, due to unfamiliarity with this particular slide rule, were written with the assumption he had forgotten to use the log-log scales or other standard slide rule scales, but in fact the use of those scales is obvious in comparison to the use of the electronic scales on the other side, and it seemed to me that these were the only ones with which he had a question.)

I was unsure of the proper way to decode the E-mail address in the message, or whether it was still valid. In hopes that the individual concerned is still an active participant in this newsgroup, I post here now, with an answer to his question.

At the web site

http://sliderule.ozmanor.com/man/man-download.html

there is not one, but rather there are two, versions of the manual provided for this slide rule.

And on my own web site, at

http://home.ecn.ab.ca/~jsavard/other/sr02.htm

among much other information related to slide rules, are the results of a study of the manuals for this slide rule, which yielded to me the meanings of the various scales thereon.

John Savard
http://home.ecn.ab.ca/~jsavard/index.html

316. Legal limit from a FT-817?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-13 05:53:43 UTC
From: Ken Bessler <kg0wxIHATESPAM@yahoo.com>
Message-ID: <bu0152$66g60$1@ID-213023.news.uni-berlin.de>
Source record: 29502

Here is the project idea:

Exiter: Yaesu FT-817 set to 1w
Driver: EB63 amp kit from Communication Concepts
Driver filters: 160/80/40/20/15/10 meter filters from Comm Con.
Final amp: Ameritron AL-1500.....

The cost of the components for the driver is only $182.00 - I'd
have to add a case, bandswitch, etc.

I'm currently building the K5OOR hfpack amp but it will only
put out 35 watts which would not be enough to drive any of
the commercial amps on the market to legal limit, right?

Opinions?

72/73's de Ken KG0WX

317. Binocular ferrite cores

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-13 15:59:27 UTC
From: Lenny Wintfeld <lennyw@comcast.net>
Message-ID: <MPG.1a6ddfe7aa6cb781989688@news.nj.comcast.giganews.com>
Source record: 29503

Anyone know of a ham-friendly source for BN-61-xxxx type binocular
ferrite cores ?

73,
Lenny W2BVH

318. Re: Binocular ferrite cores

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-13 16:11:09 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <40041902.EBA0E9C2@rica.net>
Source record: 29504

Lenny Wintfeld wrote:
>
> Anyone know of a ham-friendly source for BN-61-xxxx type binocular
> ferrite cores ?
>
> 73,
> Lenny W2BVH

http://www.oselectronics.com/ose_p88.htm
http://www.amidoncorp.com/aai_multiaperture.htm

--
John Popelish

319. Re: Binocular ferrite cores

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-13 16:13:29 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1008695he76kcae@corp.supernews.com>
Source record: 29505

Try Amidon: http://www.amidoncorp.com/. I haven't ordered anything from them for years because one of the stores in the area stocks their stuff, but when I was they were a good source.

"Lenny Wintfeld" <lennyw@comcast.net> wrote in message news:MPG.1a6ddfe7aa6cb781989688@news.nj.comcast.giganews.com...
> Anyone know of a ham-friendly source for BN-61-xxxx type binocular
> ferrite cores ?
>
> 73,
> Lenny W2BVH

320. Re: Radio Shack Quitting Parts Business?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-13 17:20:01 UTC
From: Claudia & Reed Park <reedpark@nbnet.nb.ca>
Message-ID: <40042957.535BE581@nbnet.nb.ca>
Source record: 29506

JGBOYLES wrote:

> >Besides, their parts were and always have been complete crap anyways, so not
> >a great loss really...
>
> Larry, I have been buying electronic components from Radio Shack for 40 years,
> and I can't say I got any that were complete c***. They all worked, isn't that
> what you get them for?
> Radio Shack doesn't manufacture any of the parts they sell, they repackage
> OEM parts and resell. They cost more, and the people working there know little
> or nothing about the parts section. But the parts work.
> As another poster pointed out, they are mighty handy for the odd part to meet
> some deadline, or if you are just trying to finish your latest weekend creation
> and need a 1N4007, and a 10k 1/4 watt in a hurry. I would never use them as
> the major parts supplier for anything but the smallest of projects. I would
> consider them getting out of the parts business a loss.
> 73 Gary N4AST

Well.

Here in Canada, they got out of the small parts business years ago. HOWEVER,
the parts can still be bought on-line at RatShack (as they are known here). But
who wants to buy just one IC or transistor or resistor to finish that project on
line.
Now, would you believe, they are finally starting to stock a few small parts once
again ?
I needed two 1N34A diodes last week to repair an antenna tuner for a friend.
My stock was nil, so on the off chance, I called Radio Shack. Sure enough, they
are back on the shelves again, at 10 for about 4 bucks including the 15 % tax.
What I can't find locally is two small dial lamps to replace the ones in a Yaesu
FT-212RH. Radio shack has 12 volt bulbs, Yaesu used 9 volt bulbs. No hobby
type stores here stock anything other than 14 volt bulbs.

In Canada, it's very hard top get small quantities of small parts even when you
can find someone that has what you need. I needed 7 zener diodes to do a project
and had to buy a minimum order of 500. Good thing they were only 7 cents each.

7 3
Reed - VE1NU

Looking for information on Marconi SMR-3 and
Northern Electric R8119A receivers of WW2.

321. Drake TR-3 transceiver synthesizer upgrade

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-13 17:28:35 UTC
From: gene@csl.uiuc.edu
Message-ID: <bu19s3$p03$1@news.ks.uiuc.edu>
Source record: 29507

Date: Sat, 10 Jan 2004 13:43:36 -0600
Subject: drake-mod

LOW BUDGET - HIGH PERFORMANCE
Upgrade for Older Bargain Transceivers.

One of the main reasons that older transceivers were abandoned was the need for strict frequency stability. Most amateurs communicating on SSB today have come to expect transceivers to maintain frequency stability to within 50 Hz of the desired frequency for natural voice intelligibility and uniformity
within a group.
Note: This project was apparently of no interest to one of the Ham magazines so I will submit it for this newsgroup. With such widespread exposure, perhaps a small percentage will find it of interest. It is rather lengthy because it provides some theory of the design so that it can be adapted for other similar equpment.

Several of the older vacuum tube models otherwise provided very good basic performance.....150 to 300 watts PEP with very good band-pass filters providing steep-skirted selectivity. Vacuum tubes normally last many years. At such bargain prices, and with modification, these transceivers can provide a good interim station for younger amateurs who have limited money, but plenty of experimental enthusiasm. Many older amateurs who already have modern transceivers sometimes enjoy working on side projects as a creative extension of the hobby.

The Drake-TR3 transceiver is described in this article. It is frequently available on E-bay, and at Hamfests for surprisingly low cost. It (and probably
Drake-TR4) seem ideal for this project: The same VFO range (4.9 to 5.5 MHz) is used on all bands, and is quite stable even before modification. It has two high quality sideband filters (USB&LSB), so that no frequencies have to be changed when switching sidebands. The second requirement is an old CB transceiver. It does not have to be working, except for features which are probably still useful: the internal 10.240 MHz crystal oscillator, the progammable divider-phase-locking synthesizer IC (such as a PLL02A, and several others) and the 5.4 volt regulator. Either a 23 or 40 channel, and AM or SSB models can be used. The 40 channel provides more channels if you choose the simpler limited option. Many channels provide suitable divisor numbers, while others will not without
modification.
The more interesting and more useful option however, is to use nine-positions of miniature switches to fully control the PLL

counter-lines
for the maximum divider numbers from 1 to 512.
Since several types of transceivers may be of interest, and a variety of junk box crystals from World War 2 are often available, more detail of the design
theory will be described.
The fundamental theory of the original CB is this: The internal 10.240 MHz crystal oscillator (10,240 kHz) is internally divided by 1024 in the PLL IC, which results in a 10 kHz reference. Then the VFO is mixed with a crystal oscillator to yield a difference frequency, in the 2 to 3 MHz range. This 2000 to 3000 kHz is divided by 200 to 300 (depending on which of the CB channels the selector switch is on) to yield 10 kHz. This is compared to the reference 10 kHz in the phase-detector and produces a DC control voltage out which changes direction according to whether the VFO is slightly high, or
slightly low in frequency. This is connected to a vari-cap diode in the VFO to force it to lock to the correct frequency. A note of interest at this point: To avoid confusion later when using the Truth Charts associated with the channel selector and the programming logic, there are five gaps in the CB frequency range where it advances 20 kHz instead of 10 kHz. Also channels 24 and 25 are inserted ahead (frequency-wise) between channel 22 and 23 per the EIA numbering plan. Knowing these exceptions will help avoid confusion when writing down a TRUTH-TABLE for your model, i.e. following the trend of binary numbers advancing by one for each channel number, except for those noted above.
Power for the CB and additional components can be conveniently supplied by half-wave rectifying the 12.6 AC filament supply in the Drake TR-3. This yields about +17 vdc unloaded with a large filter capacitor. A series dropping resistor of about 22 ohms (2W) was used to drop the voltage down to about 12 volts. It is probably wise to get the +12 volts for the the additional transistors from the load side of the CB power switch to avoid the +17.5 surge stored in the capacitor.

Getting to the design theory of this Drake TR-3 upgrade: The original CB 10.240 MHz crystal oscillator and its circuits to the PLL-02A synthesizer are left intact to provide the 10kHz reference. The requirement now is to take the output of the DrakeVFO (4.9 to 5.5 MHz) and divide it down to 10kHz. These frequencies are too high to divide down directly and are mixed with a separate crystal oscillator to translate them down to the 2 or 3 MHz range. The CB channel selector switch provides 40 divider values by switching binary lines HI or LOW. Fundamentally, the PLL02A is capable of division N=1 to 512, but only 40 divisions are customized for the original CB requirements and will be modified for use on the transceiver as perceived by utilizing the Truth Charts of binary logic. Usually the 64 bit (pin 9) is isolated from the channel switch and tied HI for more options on this model (Kraco KCB-4020).
Pins 7,8,9,10,11,12,13,14,15 (when +5.4v HI), respectively represent 256,128,64,32,16,8,4,2,1 divisors. The effective division is the sum of all the HI
pins. The 256 and 128 are often wired HI or LOW and the remainder are

switched by the channel selector.

The theory is best explained by taking the three cases used in the Drake TR-3. It uses an I.F. frequency of 9 MHz. On 80 M, an incoming frequency of 3875 kHz gets mixed with a VFO frequency required to provide an I.F. frequency of 9 MHz. Thus 9000 minus 3875 requires the VFO to be at 5125 kHz. This is too high to divide directly, so a rather arbitrary crystal frequency oscillator of 7425 kHz (a good choice because it allows coverage of the five older phone bands and has a last digit of 5). It is mixed with the Drake VFO which has a small coax appearing near an optional connector at the bottom cover. This yields a difference of 2300 kHz which is divisible by 10 and is sent to the PLL02A. It is programmed to divide by 230 yielding 10 kHz internally to be phase-compared to the internal reference 10 kHz. The phase detector provides a positive (but directional) DC out which connects to a vari-cap or varactor which changes its capacity according to the DC reverse-bias applied. In this project, an ordinary Power MosFet was used in a special configuration to provide better capacitance control. The TR-3 offers an exposed bare wire going from a tap on the VFO inductor, to pin 7 on V-2. A 47 Pf coupling capacitor is added from there to the MosFet device as seen in the schematic.

A second case on 20 Meters is an incoming frequency of 14.320 MHz which is higher than the I.F. and is mixed with the VFO to provide 9 Mhz.14,320 minus 9000 requires the VFO to be to be 5320 kHz. An alternate crystal in the vicinity of the first is used, but this time having a last digit of zero to assure that the mixer output is divisible by ten. 7370 kHz was used and 7370 minus 5320 yields 2050 kHz. The program pins are set to divide by 205 to yield the required 10 kHz. Note that alternating between these two crystals provides lock-in every 5 kHz. Any other favorite frequency could be accommodated with a different crystal with the appropriate last digit to provide division by 10. Substituting a good VXO circuit might be a substitute for changing crystals. It should be noted that a few PLL-02A's already include the option of grounding pin #4 which causes it to divide the 10.240 MHz xtal by 2048 and provides an internal reference of 5 kHz. In this case, either of the added crystal options above would provide lock every 5 kHz. If your PLL-02A does not have the 5 kHz option (the NTE-1167 does not), it can be done with one section of a SN74LS74 flip-flop by tying pins 1,4,14 to +5, tie pin 2 to 6, trigger IN on pin 3, 5120 kHz out from pin 5, and of course pin 7 is ground. A +5 voltage regulator supplied from +12 volts will provide power. The trigger input to CK, pin 3 may require an NPN 5 volt emitter follower with a 200 ohm emitter resistor to trigger the flip-flop.

The third cases of 40, 15, and 10 M all use the Drake mixer crystal appropriate for that band. It is mixed with the VFO and the difference frequency can be considered the "virtual" VFO. On 15 Meters Drake uses a 35.5 MHz crystal. For an incoming frequency of 21.300 MHz, 21,300 plus 9,000 requires a "virtual" VFO of 30,300. The 35,500 crystal minus actual VFO = "virtual" 30,300, or actual VFO=5200 kHz.
Select the 7370 kHz mixer crystal again, and 7370 minus 5200 yields 2170.

Dividing by 217 yields 10 kHz in the PLL.

It may be preferable for some to have more direct control of the programming pins on the PLL:
Physically separate pins 9 thru 15 of the PLL from their circuits....by cuttng the trace to the selector switch with a razor blade. Pins 7 and 8 are more difficult. Then mount a 9-section miniature switch(often found on old computer boards) within 3 or 4 inches and wire the nine pins 7 through 15 directly to the switches, left to right respectively. One side of the switches go to +5.4 volts, and the others to the individual pins. They are SPST that only supply +5.4 for logic HI's. The PLL pins pull themselves LOW internally.
It is easy to program a divisor number by starting at the most significant bit (256 on the left-hand switch) and progressively take the biggest bite permitted toward the desired number...noting the running tally and the remaining counts required. It's almost fun, and you have full easy control of counts N= 1 to 512. The final divisor count is simply the sum of all the HI pins and their values. If you choose this option, a 23 channel CB has the same benefits as the 40 Channel.
The PLL also has the nice feature that pin 6 goes HI when the phase-control is locked on (or prevents CB transmitting if it was not HI). This is wired to an additional small transistor to make an LED glow when the frequency is in locked on.
The output of the additional mixer is tuned to resonance (2 to 3 MHz range) and will probably require switching an additional switched-in capacitor to provide suitable resonance for the entire range (or re-tuning of a slug). This project used a SPST (center open) to provide three options: adding no additional capacitance, or two other values for low, mid, and upper range of the 2 to 3 MHz i.f. range. A test point on the DC bias of the MosFet variable capacitor gives a useful indication of the changing DC required to prevent VCO drift, and provides a voltage reading that allows you to set it to the center of its dynamic range using a low-cost LCD voltmeter. These voltmeters are usually available at Hamfests for $10.
There are some CB models that have PLL's not suitable for this project approach (TC9105P in a Motorola 500 series for example), except that its 10.240 MHz crystal oscillator could be used if a substitute PLL is used. NTE-1167 seems to be about the only substitute available along with its data sheet (www.nteinc.com) but at a rather substantial price of $21.(www.mcmelectronics.com).
This modifcation was tested with the bottom of the TR-3 off and the CB circuit board and oscillator/mixer circuitry fully exposed. It drove a kW amplifier with open-wire antenna feeders in the same room, and performs with the same frequency stablity as modern equipment.
Of course the external crystal oscillator (s) must be exactly on frequency. Usually small parallel capacitance, or small series capacitance or inductance, can tweak these on frequency. On 80M and 20M the only other thing than affects the result is the Drake 9 MHz oscillator (C-130), but it can only be moved very slightly, because it must remain centered midway between the two USB-LSB bandpass filters.

(Also
tweaking the trim capacitor in the CB 10.240 MHz crystal has a small effect). But
40M,15M, and the 3 sections of 10M offer a better option by tweaking those crystal oscillators L1, L5, and L2 respectively.

Note that when the VFO is not frequency- locked, or if the CB is turned off, the
TR-3 continues to perform as it did originally except that the dial accuracy will not track as well. The calibrator and the sliding cursor pretty much compensate for this problem. The plastic dial scale can be rotated (to aid calibration) without loosening any set screw as described in the manual. It is secured only by compression, and can be slipped like a clutch.

This project could also be an interesting approach to the five new SSB channels on 60 Meters if the VFO is shunted with capacitance to tune lower (e.g. 3669.5 MHz vfo added to 5330.5 60M channel yields 9 MHz i.f frequency). But 3669.5 vfo is too high for the divider to count. A readily available 6.000MHz (5999.5) crystal can be mixed with the VFO to yield 2330 MHz which is divided by 233 to yield the 10 KHz reference frequency required at the phase detector.
Hopefully, the power amplifier tuned circuits are broad enough, without modification to provide the 50 watts output allowed on 60 meters.

---

322. Re: Calibration Cable for a TS-440

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-13 17:29:05 UTC
From: Bob <balbert@access1.net>
Message-ID: <3IydnRKbK9S9tpndRVn2iA@ecrii.com>
Source record: 29508
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

I think it's just a jumper.

Bob

323. Re: Radio Shack Quitting Parts Business?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-13 18:05:54 UTC
From: Claudia & Reed Park <reedpark@nbnet.nb.ca>
Message-ID: <4004341B.626D82E@nbnet.nb.ca>
Source record: 29509

Bill Turner wrote:

> On Tue, 13 Jan 2004 17:20:01 GMT, Claudia & Reed Park
> <reedpark@nbnet.nb.ca> wrote:
>
> >In Canada, it's very hard top get small quantities of small parts even when you
> >can find someone that has what you need. I needed 7 zener diodes to do a project
> >and had to buy a minimum order of 500. Good thing they were only 7 cents each.
>
> ____
>
> Can you buy from Mouser in the US? Last time I checked they had no
> minimum order and FAR more parts than Radio Shack. You do have to pay
> shipping, but by the time you order about $25.00 or so, the saving in
> parts cost will pay for the shipping.
>
> www.mouser.com
>
> No affiliation, just a satisfied customer.
>
> --
> Bill, W6WRT

Not sure as of this writing Bill. Fewer and fewer places in the US of A
are willing to ship to Canada. One place I checked before Christmas
had increased the minimum order to Canada to $ 150.00 in US funds.
Some places have no minimum order if the address is American. I
should start polling companies and create a data base of who will and who
will not. We used to have a super supplier in town, but that was
decades ago and was known as CamGuard Supply. You could walk in
and buy one 1/8 watt resistor if you wanted from a fella behind the counter
who knew what you were talking about. No blister packs back then.
Now it takes me days of searching the internet, and days to unwrap the
darned thing when I do get it. No wonder so few new people are interested
in electronics, it's just to hard to find parts.

Ham of 38 years who loves to build things.
Reed - VE1NU

It's easier to get tubes for 70 year old radios than parts for 15 year old radios.

324. new rf amp yahoo group

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-13 19:10:11 UTC
From: I found it <skippNOSPAMPLEASE025@yahoo.com>
Message-ID: <bu1fqj$k1d$1@woodrow.ucdavis.edu>
Source record: 29511
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.swap,rec.radio.swap

Found a new yahoo group for rf amplifier information.

http://groups.yahoo.com/group/rfamplifiers/

325. Re: Radio Shack Quitting Parts Business?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-13 19:37:53 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <1008i89anq6bhcb@corp.supernews.com>
Source record: 29512

"Claudia & Reed Park" <reedpark@nbnet.nb.ca> wrote in message
news:4004341B.626D82E@nbnet.nb.ca...

> No wonder so few new people are interested
> in electronics, it's just to hard to find parts.

Wow - my experience sure is different! The Internet has made parts FAR more available. Used to be you would pour through the Allied catalog making up the list, go down to the Post Office to get a money order, send off the order which included some outrageous shipping charge, then wait one or two months for the parts to arrive. I was fortunate in that I lived across the river from Radio Row, so if I couldn't find it in the catalog, I would organize an expedition into the city. Still, collecting parts for any reasonable sized project was a complex, time-consuming affair.

Today you go online to see what DigiKey has in stock at this moment, order online or over the phone, and wait until tomorrow, or if you're cheap like me, the day after tomorrow, for the parts to arrive. No sirrrreeeee, I'll take today over the bad old days.

Gotta admit, it can be a little frustrating until you've lined up your favorite list of suppliers. But whatever you want is out there.

My list:

DigiKey (www.digikey.com) is generally my first choice. They are not always cheapest, but their prices aren't bad, and their customer service is second to none. (I only learned recently that they were started by a ham, too!) They have an amazing number of parts, although they are pretty weak in the RF department. They also have the best catalog. They do have a $25 minimum order, but that is never my problem .... they have too many goodies I can't live without. Their default shipping is by air, though, so if you're cheap you need to specify ground shipping.

B.G. Micro (www.bgmicro.com) has a lot of unusual stuff. Some of their things are very inexpensive, some pretty high, so you need to know what you are looking for. I like them for cases and LCDs, although sometimes they have deals on something you need, like a pile of zeners or 1000 2N2222's.

W8DIZ (http://partsandkits.com) is THE source for toroids. His prices are amazing and he ships priority mail, so shipping is only three-something. He has a few other assorted parts, and when he does, they are cheap. He sells toroids in big bunches, but even if you need only a few, you can typically get a couple dozen from him for less money you would pay to Amidon for three.

Dan's Small Parts and Kits (www.danssmallpartsandkits.net) has more RF stuff than most. His collection is a little odd, but if he has it, his price will generally be on the low end. He only takes orders by snail mail, though, so it's typically a two week wait or more.

R.F. Parts (www.rfparts.com) has, well, RF stuff. If I can't find it anywhere else, I go to them. They are definitely the high-priced spread, but if you need an exotic transistor, you need it.

Mendelson's (www.meci.com) is the weirdest. They have a varying inventory of oddball stuff like BG Micro, but their strength tends to be more along the lines of connectors and hardware. They usually have a lot of really weird stuff, though, so sometimes you discover something you can't live without!

Someone mentioned www.radioshack.com. They used to be a good source, actually. But recently they have cut back to only what is in the stores, and at the same prices, so they are off my list.

I have found that copperclad, hookup wire, knobs and tools are best left for the hamfests. You can get them, but they tend to be pricey online.

We have two Radio Shack stores here in town, and both of them seem to be carrying more parts than they used to. They have hidden most of them in those little drawers, but there seem to be more there than there used to be. At least they are easier to find.

Still, because of the price, they are my supplier of last resort!

No affiliation with any of these guys, of course.

..

326. Re: Radio Shack Quitting Parts Business?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-13 22:10:27 UTC
From: Scanman <scanman@scanman.com>
Message-ID: <r1_Mb.5280$5M.127131@dfw-read.news.verio.net>
Source record: 29513

Look up Hosfelt Electronics. They carry those small lamps I believe. I bought some for my 212RH and I believe it was them I bought them from. You want the "Microwheat" bulbs.. I think that is what they are called. Or maybe mini wheat as the wheats are small in their own right. They are out there to be found though from regular parts places. SM.
"Claudia & Reed Park" <reedpark@nbnet.nb.ca> wrote in message news:40042957.535BE581@nbnet.nb.ca...

JGBOYLES wrote:

>Besides, their parts were and always have been complete crap anyways, so not
>a great loss really...
Larry, I have been buying electronic components from Radio Shack for 40 years, and I can't say I got any that were complete c***. They all worked, isn't that what you get them for?
Radio Shack doesn't manufacture any of the parts they sell, they repackage OEM parts and resell. They cost more, and the people working there know little or nothing about the parts section. But the parts work.
As another poster pointed out, they are mighty handy for the odd part to meet some deadline, or if you are just trying to finish your latest weekend creation and need a 1N4007, and a 10k 1/4 watt in a hurry. I would never use them as the major parts supplier for anything but the smallest of projects. I would consider them getting out of the parts business a loss.
73 Gary N4AST

Well.
Here in Canada, they got out of the small parts business years ago. HOWEVER, the parts can still be bought on-line at RatShack (as they are known here). But who wants to buy just one IC or transistor or resistor to finish that project on line.
Now, would you believe, they are finally starting to stock a few small parts once again ?
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What I can't find locally is two small dial lamps to replace the ones in a Yaesu FT-212RH. Radio shack has 12 volt bulbs, Yaesu used 9 volt bulbs. No hobby type stores here stock anything other than 14 volt bulbs.

In Canada, it's very hard top get small quantities of small parts even when you can find someone that has what you need. I needed 7 zener diodes to do a project and had to buy a minimum order of 500. Good thing they were only 7 cents each.

7 3
Reed - VE1NU

Looking for information on Marconi SMR-3 and
Northern Electric R8119A receivers of WW2.

327. Re: Noise in Ford F-150

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-13 22:22:43 UTC
From: Phillip Jockell <philjXXX@spearnet.net>
Message-ID: <Xns946FB0C8650B2pj12345pjpj@216.196.97.132>
Source record: 29514

I have similar high noise in a '93 Astro minivan. Is the
fix the same?

phil - N4GWV

wb4una@aol.com (Randy Chavis) wrote

>>Anybody have any ideas to lower noise in my FT-857 mounted in my F-150
>>pickup? S7-S9 noise (engine running, with NB ON) on 17M (Only band
>>I've tried on HF yet). Antenna is an Outbacker mounted on a mount I
>>welded up for my receiver hitch and puts the base of the antenna at
>>about roof level. Quiet as a mouse when truck is shut off. Go
>>figure...hard to be "mobile" with the engine off ;)

>>Scott N0EDV
> you will find the problem in the fuel pump..Ford had a big porblem
> with it not
> being grounded.They have a fix for it but you will have to talk to a
> Ford tech to find it and buy it from them....

328. Re: Varactor tuning diodes.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-13 23:21:40 UTC
From: ON5MJ <my_call_sign@skynet.be>
Message-ID: <40047cb0$0$1805$ba620e4c@news.skynet.be>
Source record: 29515

Hi there,

Your varactors probably entered in the conductive domain because of the 1V pp voltage, so reducing the oscillator voltage to less than 0.5 V pp would improve the Q factor and the results (shape, stability, etc).

73 de ON5MJ - Jacques.

329. Re: How to build 50 Mhz (6m) receiver for AM/CW/SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-13 23:29:49 UTC
From: ON5MJ <my_call_sign@skynet.be>
Message-ID: <40047e98$0$16666$ba620e4c@news.skynet.be>
Source record: 29516

Hi,

This could be usefull. This is a converter for 50 MHz designed by ON1DHT (now ON6MU).

73 de ON5MJ - Jacques

330. Re: Noise in Ford F-150

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-14 00:07:15 UTC
From: w4pqw@cox.net
Message-ID: <84b5ffd4.0401131607.5b57bcab@posting.google.com>
Source record: 29517

wb4una@aol.com (Randy Chavis) wrote in message
news:<20040112204033.15336.00003302@mb-m04.aol.com>...
>
> >Anybody have any ideas to lower noise in my FT-857 mounted in my F-150
> >pickup? S7-S9 noise (engine running, with NB ON) on 17M (Only band I've
> >tried on HF yet). Antenna is an Outbacker mounted on a mount I welded up
> >for my receiver hitch and puts the base of the antenna at about roof level.
> >Quiet as a mouse when truck is shut off. Go figure...hard to be "mobile"
> >with the engine off ;)
> >
> >--
> >Scott N0EDV
> >Gotta Fly or Gonna Die
> >http://corbenflyer.tripod.com
> >Building RV-4
> >
> you will find the problem in the fuel pump..Ford had a big porblem with it not
> being grounded.They have a fix for it but you will have to talk to a Ford tech
> to find it and buy it from them....
>
> Randy
>
>
>
>
> ARS: WB4UNA
> Randy Chavis
> 247 Goff Court
> West Columbia
> S.C. 29172 Get ready to remove the tank,pump is inside..run the pump power through a pair of coax caps (about .1 to .25 OK) mount them directly at the pump terminals on the tank..that will get about 90% of the noise..ground the tail pipe at the back bumper ,good braid ground. None of the Ford dealers that I contacted wanted to talk about the problem,never heard of it .. Good luck W4PQW

331. Re: Noise in Ford F-150

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-14 00:21:28 UTC
From: wb4una@aol.com
Message-ID: <20040113192128.15459.00003463@mb-m03.aol.com>
Source record: 29518

>
>wb4una@aol.com (Randy Chavis) wrote in message
>news:<20040112204033.15336.00003302@mb-m04.aol.com>...
>>
>> >Anybody have any ideas to lower noise in my FT-857 mounted in my F-150
>> >pickup? S7-S9 noise (engine running, with NB ON) on 17M (Only band I've
>> >tried on HF yet). Antenna is an Outbacker mounted on a mount I welded up
>> >for my receiver hitch and puts the base of the antenna at about roof
>level.
>> >Quiet as a mouse when truck is shut off. Go figure...hard to be "mobile"
>> >with the engine off ;)
>> >
>> >--
>> >Scott N0EDV
>> >Gotta Fly or Gonna Die
>> >http://corbenflyer.tripod.com
>> >Building RV-4
>> >
>> you will find the problem in the fuel pump..Ford had a big porblem with it
>not
>> being grounded.They have a fix for it but you will have to talk to a Ford
>tech
>> to find it and buy it from them....
>>
>> Randy
>>
>>
>>
>>
>> ARS: WB4UNA
>> Randy Chavis
>> 247 Goff Court
>> West Columbia
>> S.C. 29172 Get ready to remove the tank,pump is inside..run the pump
>power through a pair of coax caps (about .1 to .25 OK) mount them directly
>at the pump terminals on the tank..that will get about 90% of the
>noise..ground the tail pipe at the back bumper ,good braid ground. None of
>the Ford dealers that I contacted wanted to talk about the problem,never
>heard of it .. Good luck W4PQW
>

Well, I guess it is who you know..all the ones that I know that have been fixed here have bought thier cars or trucks new and Ford was glad to help them. They also knew ahead of time that the buyes were hams and planed on installing

radios in the cars or trucks.....

Randy

ARS: WB4UNA
Randy Chavis
247 Goff Court
West Columbia
S.C. 29172

332. Re: Noise in Ford F-150

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-14 00:52:38 UTC
From: dplatt@radagast.org
Message-ID: <10094mmc5fipq67@corp.supernews.com>
Source record: 29519

In article <84b5ffd4.0401131607.5b57bcab@posting.google.com>,
<w4pqw@cox.net> wrote:

> Get ready to remove the tank,pump is inside..run the
>pump power through a pair of coax caps (about .1 to .25 OK) mount them
>directly at the pump terminals on the tank..that will get about 90% of
>the noise..ground the tail pipe at the back bumper ,good braid ground.
>None of the Ford dealers that I contacted wanted to talk about the
>problem,never heard of it .. Good luck W4PQW

Tell the dealer to look up Ford's technical service bulletin
TSB 93-15-6 and/or TSB 95-11-3 (I believe the latter is an updated
version of the former). This describes the problem, identifies the
Ford filter part which is to be installed inside the fuel tank on the
pump wiring, and describes the procedure.

This is reportedly _not_ a customer-installable fix. As it involves
removing the fuel pump from the tank itself, and modifying wiring in
this area, I'm not too surprised that Ford would be very reluctant to
encourage vehicle owners to attempt this on their own.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

333. Re: Noise in Ford F-150

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-14 01:03:20 UTC
From: "Gary P. Fiber" <g.fiber@verizon.net>
Message-ID: <q8390097uradpdqoda5vk063pf68l43h7b@4ax.com>
Source record: 29520

On 13 Jan 2004 16:07:15 -0800, w4pqw@cox.net wrote:

>wb4una@aol.com (Randy Chavis) wrote in message
news:<20040112204033.15336.00003302@mb-m04.aol.com>...
>>
>> >Anybody have any ideas to lower noise in my FT-857 mounted in my F-150
>> >pickup? S7-S9 noise (engine running, with NB ON) on 17M (Only band I've
>> >tried on HF yet). Antenna is an Outbacker mounted on a mount I welded up
>> >for my receiver hitch and puts the base of the antenna at about roof level.
>> >Quiet as a mouse when truck is shut off. Go figure...hard to be "mobile"
>> >with the engine off ;)
>> >
>> >--
>> >Scott N0EDV
>> >Gotta Fly or Gonna Die
>> >http://corbenflyer.tripod.com
>> >Building RV-4
>> >
>> you will find the problem in the fuel pump..Ford had a big porblem with it not
>> being grounded.They have a fix for it but you will have to talk to a Ford tech
>> to find it and buy it from them....
>>
>> Randy
>>
>>
>>
>>
>> ARS: WB4UNA
>> Randy Chavis
>> 247 Goff Court
>> West Columbia
>> S.C. 29172 Get ready to remove the tank,pump is inside..run the pump power through a
pair of coax caps (about .1 to .25 OK) mount them directly at the pump terminals on the
tank..that will get about 90% of the noise..ground the tail pipe at the back bumper ,good
braid ground. None of the Ford dealers that I contacted wanted to talk about the
problem,never heard of it .. Good luck W4PQW

Randy,

Ford has had a service bulletin out for several models about the fuel
pump noise. http://www.arrl.org/tis/info/pdf/W1MG.pdf have a look at
the url, it tells about your fuel pump noise even gives diagrams and
suggested time to install the filter for a qualfied mechanic.
I found out about it when my 1996 Ford Ranger was still under
original factory warranty. The ford dealer added a fuel pump

electrical filter to the fuel pump in the fuel tank. Can't say it did
a whole lot of good though, but is better than it was before they
added the filter.

Who makes the coaxial caps you used ?

Gary K8IZ
Washington State Resident
Registered Linux User # 312991

334. Would it be worthwhile starting an on-line parts ordering house?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-14 02:00:29 UTC
From: Greysky <greyskynospam@sbcglobal.net>
Message-ID: <1p1Nb.10235$ID2.8111@newssvr25.news.prodigy.com>
Source record: 29521

I have been pondering this idea on and off, but can't tell if it would be worth the effort to do something like this. Can you make a decent living selling small quantities of parts - passives, crystals, oscillators, solid state, IC's , even exotic things like back diodes and mmic's - via mail order. Or, do the large parts houses like Digi Key have the field sewn up?

335. Re: Radio Shack Quitting Parts Business?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-14 03:08:30 UTC
From: Howard Eisenhauer <howarde@REMOVECAPShfx.eastlink.ca>
Message-ID: <l6c900tjn9rol1qoqbd43jf30koqp8p9du@4ax.com>
Source record: 29522

Reed, Digikey has a warehouse in Winnapeg that they service Canada
from, also a catalog with Canadian pricing on line.

http://dkc1.digikey.com/ca/digihome.html

There is a $6.50 handling charge on orders less than $32 something
bucks, plus shipping of course. I've used them a few times, they ship
purolater, it arrives within a few days. of course, you could drive
down to Dartmouth & give your buisness to RAE or Jentronics but they
probably won't have the stuff you want in stock anyhow.

Not the perfect solution but this is the world we live in -

On Tue, 13 Jan 2004 17:20:01 GMT, Claudia & Reed Park
<reedpark@nbnet.nb.ca> wrote:

Snip

>In Canada, it's very hard top get small quantities of small parts even when you
>can find someone that has what you need. I needed 7 zener diodes to do a project
>and had to buy a minimum order of 500. Good thing they were only 7 cents each.
>
>7 3
>Reed - VE1NU
>
>---
>
>Looking for information on Marconi SMR-3 and
>Northern Electric R8119A receivers of WW2.

336. Re: Binocular ferrite cores

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-14 03:27:07 UTC
From: Lenny Wintfeld <lennyw@comcast.net>
Message-ID: <MPG.1a6e8118f9ddafed989689@news.nj.comcast.giganews.com>
Source record: 29523

Thanks guys, just what I was looking for, it helped a lot!

73,
Lenny W2BVH

337. Re: Would it be worthwhile starting an on-line parts ordering house?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-14 04:56:23 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <4004cbf9$0$18041$cc9e4d1f@news.dial.pipex.com>
Source record: 29524

Greysky wrote:

> I have been pondering this idea on and off, but can't tell if it would be
> worth the effort to do something like this. Can you make a decent living
> selling small quantities of parts - passives, crystals, oscillators, solid
> state, IC's , even exotic things like back diodes and mmic's - via mail
> order. Or, do the large parts houses like Digi Key have the field sewn up?

We have a few companies like that here in the UK. They have been going
for years so they must be doing reasonably well.

They don't have very extensive stocks, but they are very useful for
small quantities of standard parts as they don't charge much for postage.

73, Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

338. Re: Would it be worthwhile starting an on-line parts ordering house?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-14 12:49:14 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <40053acb$0$27803$cc9e4d1f@news.dial.pipex.com>
Source record: 29525

Leon Heller wrote:

>
>
> Greysky wrote:
>
>> I have been pondering this idea on and off, but can't tell if it would be
>> worth the effort to do something like this. Can you make a decent living
>> selling small quantities of parts - passives, crystals, oscillators,
>> solid
>> state, IC's , even exotic things like back diodes and mmic's - via mail
>> order. Or, do the large parts houses like Digi Key have the field sewn
>> up?
>
>
> We have a few companies like that here in the UK. They have been going
> for years so they must be doing reasonably well.
>
> They don't have very extensive stocks, but they are very useful for
> small quantities of standard parts as they don't charge much for postage.
>
> 73, Leon

Further to the above, here is the web site of one of those suppliers I use:

http://www.esr.co.uk

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

339. Re: Would it be worthwhile starting an on-line parts ordering house?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-14 13:41:42 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <u6ha00hha6daakb5thj572ppu2gucu9aus@4ax.com>
Source record: 29526

On Wed, 14 Jan 2004 12:49:14 +0000, Leon Heller <aqzf13@dsl.pipex.com>
wrote:

>Further to the above, here is the web site of one of those suppliers I use:
>
>http://www.esr.co.uk

I used this lot once. The first (and last) time I ordered they
charged me double. Since I ordered by credit card and had to deal with
both parties, it took several months to sort the mess out. Never
again.
--

My opinion is worth what you've paid for it.

340. Re: How to build 50 Mhz (6m) receiver for AM/CW/SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-14 17:56:57 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <100b0n3b52c7ade@corp.supernews.com>
Source record: 29527

This is exactly what I was thinking of in my earlier post, and close to what I'd design if I were doing it.

If your recevier covers 26-30MHz then you might want to use a 24MHz crystal -- your LO frequency will be closer to your output frequency (which is bad), but (a) you cover the whole band and (b) you can get a cheap microprocessor crystal. You could also use a 32MHz crystal for output from 18-22MHz, or just dig around in your junkbox for whatever crystal you have on hand.

"ON5MJ" <my_call_sign@skynet.be> wrote in message news:40047e98$0$16666$ba620e4c@news.skynet.be...
> Hi,
>
> This could be usefull. This is a converter for 50 MHz designed by ON1DHT
> (now ON6MU).
>
> 73 de ON5MJ - Jacques
>
>

341. Re: Would it be worthwhile starting an on-line parts ordering house?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-14 18:47:20 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <40058eb9$0$2439$cc9e4d1f@news.dial.pipex.com>
Source record: 29528

Paul Burridge wrote:
> On Wed, 14 Jan 2004 12:49:14 +0000, Leon Heller <aqzf13@dsl.pipex.com>
> wrote:
>
>
>
>>Further to the above, here is the web site of one of those suppliers I use:
>>
>>http://www.esr.co.uk
>
>
> I used this lot once. The first (and last) time I ordered they
> charged me double. Since I ordered by credit card and had to deal with
> both parties, it took several months to sort the mess out. Never
> again.

I've been using them for about 5 years without any problems.

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

342. Re: Would it be worthwhile starting an on-line parts ordering house?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-14 18:55:37 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <100b45cdajvvbb5@corp.supernews.com>
Source record: 29529

There are several small outfits out there, Dan's Small Parts and Kits and KitsAndParts.com come to mind. I've chatted with the owner of KitsAndParts.com from time to time, and I get the impression that you need to buy huge quantities (and obviously sell them) to make it worthwhile. I'm sure that for more "normal" things, it's going to be hard to compete with DigiKey and Mouser. But there are a lot of things that are hard to find, and I could imagine there is a niche there if you could find it.

KitsAndParts tends to specialize in toroids, and whatever he can get a deal on. Dan's favors popular RF things that QRPers need. The trick, I suppose, is to find something that DigiKey doesn't supply that is in demand, and that you can become known for. Face it, for any project that I can't stock out of my junk box, I'm probably going to write an order to DigiKey. If they have something, you are going to have to be a whole bunch cheaper to justify my writing ANOTHER order and another shipping charge. Probably you can't do that, so your only hope is to have something that they don't have.

Once you have decided what they don't have, now you have the problem of being in my face so that I think of you. The way to do that is to have some category of stuff that you become known for. Dan's tends to have RF transistors, varactors, etc. In addition, he has lots of stuff I could get at DigiKey, but it's cheaper at Dan's. Once I figure out that I need a varactor and I'm going to have to order stuff from Dan's, now I'll order all sorts of stuff there because he's going to be cheaper than DigiKey. He's not enough cheaper to get me to order something I could get from DigiKey if that was the only thing I needed, but once he has hooked me with something that I can't get, then he gets orders for a bunch of other stuff, too. KitsAndParts is pretty much the same.

So what's hard? Medium power RF transistors come to mind, as do MMICs, mixers, variable caps. Seems to me there *should* be a cheaper place to get cases and knobs, but that is mostly a price thing. But I wouldn't spend a lot of energy with stuff you can already get easily. You are going to have to be a LOT cheaper, and that is probably hard.

..

"Greysky" <greyskynospam@sbcglobal.net> wrote in message
news:1p1Nb.10235$ID2.8111@newssvr25.news.prodigy.com...
> I have been pondering this idea on and off, but can't tell if it would be
> worth the effort to do something like this. Can you make a decent living
> selling small quantities of parts - passives, crystals, oscillators,
solid
> state, IC's , even exotic things like back diodes and mmic's - via mail
> order. Or, do the large parts houses like Digi Key have the field sewn up?
>

>

343. Re: Would it be worthwhile starting an on-line parts ordering house?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-14 19:37:55 UTC
From: Dick <dick@langwang.demon.co.uk>
Message-ID: <4JlW6KATqZBAFwk4@langwang.demon.co.uk>
Source record: 29530

In message <1p1Nb.10235$ID2.8111@newssvr25.news.prodigy.com>, Greysky
<greyskynospam@sbcglobal.net> writes
>I have been pondering this idea on and off, but can't tell if it would be
>worth the effort to do something like this. Can you make a decent living
>selling small quantities of parts - passives, crystals, oscillators, solid
>state, IC's , even exotic things like back diodes and mmic's - via mail
>order. Or, do the large parts houses like Digi Key have the field sewn up?
Don't know if it's of any help but I buy items on-line, by phone &
locally and what I look for in all suppliers are:

1. Useful stock
2. Good price to me at SIT (soldering iron tip)
3. Someone at the other end who knows what they are talking about, the
help full suggestion of a suitable alternative that is in stock, or even
an alternative supplier for the really tricky one would always earns a
return visit in my book. If I get good service I don't keep it to
myself.

Good Luck (and don't forget your potential overseas customers !!).
--
Dick
GM0MNL

344. Re: How to build 50 Mhz (6m) receiver for AM/CW/SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-14 21:36:27 UTC
From: ON5MJ <my_call_sign@skynet.be>
Message-ID: <4005b586$0$291$ba620e4c@news.skynet.be>
Source record: 29531

Hi Tim,

I afterwards observed I forgot to place the URL on my post. It seems that you found it by yourself. But for others this finally the link ... beter late than never.

http://users.skynet.be/on1dht/homebrew.htm

Sorry for the mistake.

73 de ON5MJ - Jacques

345. Re: Noise in Ford F-150

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-14 22:43:31 UTC
From: James W <change-to-jw22-at-trlp-dot-com@trlp.com>
Message-ID: <100bhgkcjbhnfab@corp.supernews.com>
Source record: 29532

Do you know if Ford has addressed this in newer trucks... or is it STILL
a problem?

Randy Chavis wrote:
>>wb4una@aol.com (Randy Chavis) wrote in message
>>news:<20040112204033.15336.00003302@mb-m04.aol.com>...
>>
>>>>Anybody have any ideas to lower noise in my FT-857 mounted in my F-150
>>>>pickup? S7-S9 noise (engine running, with NB ON) on 17M (Only band I've
>>>>tried on HF yet). Antenna is an Outbacker mounted on a mount I welded up
>>>>for my receiver hitch and puts the base of the antenna at about roof
>>
>>level.
>>
>>>>Quiet as a mouse when truck is shut off. Go figure...hard to be "mobile"
>>>>with the engine off ;)
>>>>
>>>>--
>>>>Scott N0EDV
>>>>Gotta Fly or Gonna Die
>>>>http://corbenflyer.tripod.com
>>>>Building RV-4
>>>>
>>>
>>> you will find the problem in the fuel pump..Ford had a big porblem with it
>>
>>not
>>
>>>being grounded.They have a fix for it but you will have to talk to a Ford
>>
>>tech
>>
>>>to find it and buy it from them....
>>>
>>>Randy
>>>
>>>
>>>
>>>
>>> ARS: WB4UNA
>>> Randy Chavis
>>> 247 Goff Court
>>> West Columbia
>>> S.C. 29172 Get ready to remove the tank,pump is inside..run the pump

>>
>>power through a pair of coax caps (about .1 to .25 OK) mount them directly
>>at the pump terminals on the tank..that will get about 90% of the
>>noise..ground the tail pipe at the back bumper ,good braid ground. None of
>>the Ford dealers that I contacted wanted to talk about the problem,never
>>heard of it .. Good luck W4PQW
>>
>
>
> Well, I guess it is who you know..all the ones that I know that have been fixed
> here have bought thier cars or trucks new and Ford was glad to help them. They
> also knew ahead of time that the buyes were hams and planed on installing
> radios in the cars or trucks.....
>
> Randy
>
>
> ARS: WB4UNA
> Randy Chavis
> 247 Goff Court
> West Columbia
> S.C. 29172
>

346. Re: Drake TR-3 transceiver synthesizer upgrade

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 02:17:03 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <100bu19pc6mnbf4@corp.supernews.com>
Source record: 29533

Gene
Thanks for taking the time to write it up. I'm going to study it and see if
I want and can mod my TR-4CW with RIT..
73
hank wd5jfr
"Gene Gardner" <gene@csl.uiuc.edu> wrote in message
news:bu19s3$p03$1@news.ks.uiuc.edu...
>
> Date: Sat, 10 Jan 2004 13:43:36 -0600
> Subject: drake-mod
>
> LOW BUDGET - HIGH PERFORMANCE
> Upgrade for Older Bargain Transceivers.
>
> One of the main reasons that older transceivers were abandoned was the
> need for strict frequency stability. Most amateurs communicating on SSB
> today have come to expect transceivers to maintain frequency stability to
> within 50 Hz of the desired frequency for natural voice intelligibility
> and uniformity
> within a group.
> Note: This project was apparently of no interest to one of the Ham
> magazines so I will submit it for this newsgroup. With such widespread
> exposure, perhaps a small percentage will find it of interest. It is
> rather lengthy because it provides some theory of the design so that it
> can be adapted for other similar equpment.
>
> Several of the older vacuum tube models otherwise provided very good
> basic performance.....150 to 300 watts PEP with very good band-pass
> filters providing steep-skirted selectivity. Vacuum tubes normally last
> many years. At such bargain prices, and with modification, these
> transceivers can provide a good interim station for younger amateurs who
> have limited money, but plenty of experimental enthusiasm. Many older
> amateurs who already have modern transceivers sometimes enjoy working on
> side projects as a creative extension of the hobby.
>
> The Drake-TR3 transceiver is described in this article. It is frequently
> available on E-bay, and at Hamfests for surprisingly low cost. It (and
> probably
> Drake-TR4) seem ideal for this project: The same VFO range (4.9 to 5.5
> MHz) is used on all bands, and is quite stable even before modification.
> It has two high quality sideband filters (USB&LSB), so that no
> frequencies have to be changed when switching sidebands. The second
> requirement is an old CB transceiver. It does not have to be working,
> except for features which are probably still useful: the internal 10.240

> MHz crystal oscillator, the progammable divider-phase-locking synthesizer
> IC (such as a PLL02A, and several others) and the 5.4 volt regulator.
> Either a 23 or 40 channel, and AM or SSB models can be used. The 40
> channel provides more channels if you choose the simpler limited option.
> Many channels provide suitable divisor numbers, while others will not
> without
> modification.
> The more interesting and more useful option however, is to
> use nine-positions of miniature switches to fully control the PLL
> counter-lines
> for the maximum divider numbers from 1 to 512.
> Since several types of transceivers may be of interest, and a variety of
> junk box crystals from World War 2 are often available, more detail of
> the design
> theory will be described.
> The fundamental theory of the original CB is this: The internal 10.240
> MHz crystal oscillator (10,240 kHz) is internally divided by 1024 in the
> PLL IC, which results in a 10 kHz reference. Then the VFO is mixed with a
> crystal oscillator to yield a difference frequency, in the 2 to 3 MHz
> range. This 2000 to 3000 kHz is divided by 200 to 300 (depending on which
> of the CB channels the selector switch is on) to yield 10 kHz. This is
> compared to the reference 10 kHz in the phase-detector and produces a DC
> control voltage out which changes direction according to whether the VFO
> is slightly high, or
> slightly low in frequency. This is connected to a vari-cap diode in the
> VFO to force it to lock to the correct frequency. A note of interest at
> this point: To avoid confusion later when using the Truth Charts
> associated with the channel selector and the programming logic, there are
> five gaps in the CB frequency range where it advances 20 kHz instead of
> 10 kHz. Also channels 24 and 25 are inserted ahead (frequency-wise)
> between channel 22 and 23 per the EIA numbering plan. Knowing these
> exceptions will help avoid confusion when writing down a TRUTH-TABLE for
> your model, i.e. following the trend of binary numbers advancing by one
> for each channel number, except for those noted above.
> Power for the CB and additional components can be conveniently supplied
> by half-wave rectifying the 12.6 AC filament supply in the Drake
> TR-3. This yields about +17 vdc unloaded with a large filter capacitor. A
> series dropping resistor of about 22 ohms (2W) was used to drop the
> voltage down to about 12 volts. It is probably wise to get the +12 volts
> for the the additional transistors from the load side of the CB power
> switch to avoid the +17.5 surge stored in the capacitor.
>
> Getting to the design theory of this Drake TR-3 upgrade: The original CB
> 10.240 MHz crystal oscillator and its circuits to the PLL-02A synthesizer
> are left intact to provide the 10kHz reference. The requirement now is to
> take the output of the DrakeVFO (4.9 to 5.5 MHz) and divide it down to
> 10kHz. These frequencies are too high to divide down directly and are
> mixed with a separate crystal oscillator to translate them down to the 2
> or 3 MHz range. The CB channel selector switch provides 40 divider values
> by switching binary lines HI or LOW. Fundamentally, the PLL02A is capable

> of division N=1 to 512, but only 40 divisions are customized for the
> original CB requirements and will be modified for use on the transceiver
> as perceived by utilizing the Truth Charts of binary logic. Usually the
> 64 bit (pin 9) is isolated from the channel switch and tied HI for more
> options on this model (Kraco KCB-4020).
> Pins 7,8,9,10,11,12,13,14,15 (when +5.4v HI), respectively represent
> 256,128,64,32,16,8,4,2,1 divisors. The effective division is the sum of
> all the HI
> pins. The 256 and 128 are often wired HI or LOW and the remainder are
> switched by the channel selector.
>
> The theory is best explained by taking the three cases used in the Drake
> TR-3. It uses an I.F. frequency of 9 MHz. On 80 M, an incoming frequency
> of 3875 kHz gets mixed with a VFO frequency required to provide an I.F.
> frequency of 9 MHz. Thus 9000 minus 3875 requires the VFO to be at 5125
> kHz. This is too high to divide directly, so a rather arbitrary crystal
> frequency oscillator of 7425 kHz (a good choice because it allows
> coverage of the five older phone bands and has a last digit of 5). It is
> mixed with the Drake VFO which has a small coax appearing near an
> optional connector at the bottom cover. This yields a difference of 2300
> kHz which is divisible by 10 and is sent to the PLL02A. It is programmed
> to divide by 230 yielding 10 kHz internally to be phase-compared to the
> internal reference 10 kHz. The phase detector provides a positive (but
> directional) DC out which connects to a vari-cap or varactor which
> changes its capacity according to the DC reverse-bias applied. In this
> project, an ordinary Power MosFet was used in a special configuration to
> provide better capacitance control. The TR-3 offers an exposed bare wire
> going from a tap on the VFO inductor, to pin 7 on V-2. A 47 Pf coupling
> capacitor is added from there to the MosFet device as seen in the
> schematic.
>
> A second case on 20 Meters is an incoming frequency of 14.320 MHz which
> is higher than the I.F. and is mixed with the VFO to provide 9 Mhz.14,320
> minus 9000 requires the VFO to be to be 5320 kHz. An alternate crystal in
> the vicinity of the first is used, but this time having a last digit of
> zero to assure that the mixer output is divisible by ten. 7370 kHz was
> used and 7370 minus 5320 yields 2050 kHz. The program pins are set to
> divide by 205 to yield the required 10 kHz. Note that alternating between
> these two crystals provides lock-in every 5 kHz. Any other favorite
> frequency could be accommodated with a different crystal with the
> appropriate last digit to provide division by 10. Substituting a good VXO
> circuit might be a substitute for changing crystals. It should be noted
> that a few PLL-02A's already include the option of grounding pin #4 which
> causes it to divide the 10.240 MHz xtal by 2048 and provides an internal
> reference of 5 kHz. In this case, either of the added crystal options
> above would provide lock every 5 kHz. If your PLL-02A does not have the 5
> kHz option (the NTE-1167 does not), it can be done with one section of a
> SN74LS74 flip-flop by tying pins 1,4,14 to +5, tie pin 2 to 6, trigger IN
> on pin 3, 5120 kHz out from pin 5, and of course pin 7 is ground. A +5
> voltage regulator supplied from +12 volts will provide power. The trigger

> input to CK, pin 3 may require an NPN 5 volt emitter follower with a 200
> ohm emitter resistor to trigger the flip-flop.
>
> The third cases of 40, 15, and 10 M all use the Drake mixer crystal
> appropriate for that band. It is mixed with the VFO and the difference
> frequency can be considered the "virtual" VFO. On 15 Meters Drake uses a
> 35.5 MHz crystal. For an incoming frequency of 21.300 MHz, 21,300 plus
> 9,000 requires a "virtual" VFO of 30,300. The 35,500 crystal minus actual
> VFO = "virtual" 30,300, or actual VFO=5200 kHz.
> Select the 7370 kHz mixer crystal again, and 7370 minus 5200 yields 2170.
> Dividing by 217 yields 10 kHz in the PLL.
>
> It may be preferable for some to have more direct control of the
> programming pins on the PLL:
> Physically separate pins 9 thru 15 of the PLL from their circuits....by
> cuttng the trace to the selector switch with a razor blade. Pins 7 and 8
> are more difficult. Then mount a 9-section miniature switch(often found
> on old computer boards) within 3 or 4 inches and wire the nine pins 7
> through 15 directly to the switches, left to right respectively. One side
> of the switches go to +5.4 volts, and the others to the individual pins.
> They are SPST that only supply +5.4 for logic HI's. The PLL pins pull
> themselves LOW internally.
> It is easy to program a divisor number by starting at the most
> significant bit (256 on the left-hand switch) and progressively take the
> biggest bite permitted toward the desired number...noting the running
> tally and the remaining counts required. It's almost fun, and you have
> full easy control of counts N= 1 to 512. The final divisor count is
> simply the sum of all the HI pins and their values. If you choose this
> option, a 23 channel CB has the same benefits as the 40 Channel.
> The PLL also has the nice feature that pin 6 goes HI when the
> phase-control is locked on (or prevents CB transmitting if it was not
> HI). This is wired to an additional small transistor to make an LED glow
> when the frequency is in locked on.
> The output of the additional mixer is tuned to resonance (2 to 3 MHz
> range) and will probably require switching an additional switched-in
> capacitor to provide suitable resonance for the entire range (or
> re-tuning of a slug). This project used a SPST (center open) to provide
> three options: adding no additional capacitance, or two other values for
> low, mid, and upper range of the 2 to 3 MHz i.f. range. A test point on
> the DC bias of the MosFet variable capacitor gives a useful indication of
> the changing DC required to prevent VCO drift, and provides a voltage
> reading that allows you to set it to the center of its dynamic range
> using a low-cost LCD voltmeter. These voltmeters are usually available at
> Hamfests for $10.
> There are some CB models that have PLL's not suitable for this project
> approach (TC9105P in a Motorola 500 series for example), except that its
> 10.240 MHz crystal oscillator could be used if a substitute PLL is used.
> NTE-1167 seems to be about the only substitute available along with its
> data sheet (www.nteinc.com) but at a rather substantial price of
> $21.(www.mcmelectronics.com).

> This modifcation was tested with the bottom of the TR-3 off and the CB
> circuit board and oscillator/mixer circuitry fully exposed. It drove a kW
> amplifier with open-wire antenna feeders in the same room, and performs
> with the same frequency stablity as modern equipment.
> Of course the external crystal oscillator (s) must be exactly on
> frequency. Usually small parallel capacitance, or small series
> capacitance or inductance, can tweak these on frequency. On 80M and 20M
> the only other thing than affects the result is the Drake 9 MHz
> oscillator (C-130), but it can only be moved very slightly, because it
> must remain centered midway between the two USB-LSB bandpass filters.
> (Also
> tweaking the trim capacitor in the CB 10.240 MHz crystal has a small
> effect). But
> 40M,15M, and the 3 sections of 10M offer a better option by tweaking
> those crystal oscillators L1, L5, and L2 respectively.
>
> Note that when the VFO is not frequency- locked, or if the CB is turned
> off, the
> TR-3 continues to perform as it did originally except that the dial
> accuracy will not track as well. The calibrator and the sliding cursor
> pretty much compensate for this problem. The plastic dial scale can be
> rotated (to aid calibration) without loosening any set screw as described
> in the manual. It is secured only by compression, and can be slipped like
> a clutch.
>
> This project could also be an interesting approach to the five new SSB
> channels on 60 Meters if the VFO is shunted with capacitance to tune
> lower (e.g. 3669.5 MHz vfo added to 5330.5 60M channel yields 9 MHz i.f
> frequency). But 3669.5 vfo is too high for the divider to count. A
> readily available 6.000MHz (5999.5) crystal can be mixed with the VFO to
> yield 2330 MHz which is divided by 233 to yield the 10 KHz reference
> frequency required at the phase detector.
> Hopefully, the power amplifier tuned circuits are broad enough, without
> modification to provide the 50 watts output allowed on 60 meters.
>
> ----------
>

347. Re: Would it be worthwhile starting an on-line parts ordering house?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 06:00:30 UTC
From: Dana Myers <k6jq@arrl.net>
Message-ID: <40062a4e$1@wobble>
Source record: 29534

Paul Burridge wrote:

> I used this lot once. The first (and last) time I ordered they
> charged me double. Since I ordered by credit card and had to deal with
> both parties, it took several months to sort the mess out. Never
> again.

Really? That's quite odd. I've never had a problem with any
disputed charge on any of my cards. They've always been settled
to my satisfaction basically with one call to the credit-card
company.

Dana

348. Good Receiver for a 10-year Old

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 06:22:04 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <100ccc8lbuot37b@corp.supernews.com>
Source record: 29535
Body handling: Inline uuencoded payload not displayed: Tim Wescott.vcf

Does anyone out there have recommendations for a good, simple receiver kit for a 10-year old budding ham? My son just fell in love with the Neophyte receiver from ARRL's "QRP Classics", but chasing down parts is going to be a bit of a bother (the coils _are_ still available from Mouser, and FAR circuits has the board, but it looks like I'm going to have to donate a couple of my precious tuning caps). If it were me I'd just start building and accept the necessary futzing around; with him I'd prefer something where all the parts fall out of the box and go together quick before he loses patience.

Ideally there's someone out there that makes an improved Neophyte kit. If I have to I'll buy one of the new kits that are mostly pre-made surface mount with a bit of through-hole soldering of the tuning pots and whatnot, but I'm not sure he'll get the feeling of accomplishment that we're looking for.

Any suggestions?

Thanks.

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

[Inline uuencoded payload not displayed: Tim Wescott.vcf]

349. Re: Good Receiver for a 10-year Old

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 15:05:37 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <5%xNb.17199$Eq.12466@clgrps12>
Source record: 29536

Hi Tim,

Good to hear another lad getting into the electronics hobby :-)

In the ARRL Radio Amateur's Handbooks that I have, there is a little
direct-conversion receiver in their. Simple to build and is quite the
performer :-)

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

350. Re: Good Receiver for a 10-year Old

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 16:31:53 UTC
From: ON5MJ <my_call_sign@skynet.be>
Message-ID: <4006bfa3$0$284$ba620e4c@news.skynet.be>
Source record: 29537

Hi Tim,

Here are some URL

http://www.hobbytron.net/amateur_index.html
http://www.bgmicro.com/catalog.asp
http://www.pan-tex.net/usr/r/receivers/ra01000.htm
http://my.integritynet.com.au/purdic/index.html

73 de ON5MJ - Jacques

351. Re: Good Receiver for a 10-year Old

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 16:57:04 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <100dhiogvt16o5e@corp.supernews.com>
Source record: 29538

Thanks Jacques and Gregg. The Hobbytron receiver is a Ramsey Electronics kit that (from the parts list) looks like a knock-off of the Neophyte. While it may not be the best RX in the world it'll be complete and he can probably learn to solder _and_ have a radio when he's done.

"ON5MJ" <my_call_sign@skynet.be> wrote in message news:4006bfa3$0$284$ba620e4c@news.skynet.be...
> Hi Tim,
>
> Here are some URL
>
> http://www.hobbytron.net/amateur_index.html
> http://www.bgmicro.com/catalog.asp
> http://www.pan-tex.net/usr/r/receivers/ra01000.htm
> http://my.integritynet.com.au/purdic/index.html
>
> 73 de ON5MJ - Jacques
>
>

352. Re: Good Receiver for a 10-year Old

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 17:24:14 UTC
From: Keyboard In The Wilderness <KIYW@zilch.net>
Message-ID: <21ANb.23933$zs4.10105@fed1read01>
Source record: 29539

```
Lots of kits and projects at URL:
http://ac6v.com/kits.htm

--
73 From The Wilderness Keyboard
---------------------
```

353. Re: Radio Shack Quitting Parts Business?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 18:14:50 UTC
From: Claudia & Reed Park <reedpark@nbnet.nb.ca>
Message-ID: <4006D93B.3117C465@nbnet.nb.ca>
Source record: 29540

Scanman wrote:

> Look up Hosfelt Electronics. They carry those small lamps I believe. I bought
> some for my 212RH and I believe it was them I bought them from. You want the
> "Microwheat" bulbs.. I think that is what they are called. Or maybe mini wheat
> as the wheats are small in their own right. They are out there to be found
> though from regular parts places. SM.

Just got back inside form the minus 42 (wind chill temperature) degree outside.
Tried a local electronic repair place in town and found the lamps I was looking
for.
Also found that they sell other electronic stuff. Nothing on display, one has to
ask
at the front counter, but what the heck. At least I now know they have parts
and will sell in lots of one, or more. :-)

Hard to believe just how small some lamps can get. Grain of wheat, grain
of rice and grain of sand. The one in my digital watch is so small it looks like

a swollen spot on a piece of human hair.

7 3 to all
Reed - VE1NU

Looking for information on Marconi SMR-3 and
Northern Electric R8119A receivers of WW2.

354. power transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 18:22:18 UTC
From: larry <larya@rogers.com>
Message-ID: <uTANb.36607$ZuL1.10837@twister01.bloor.is.net.cable.rogers.com>
Source record: 29541

Way back, when I was 7 or 8 years old, (I am 55 now), my dad got me an electric train set....During that Christmas we were at my Grandparents place and they were on 25 hz power....At home we were on 60 hz power...

We had to be at home for me to try out my new train set.

What has that got to do with this question?...

This....

I have a number of transformers and would like to experiement using then at a higher frequency....let say 500 hz and / or higher.....

Would they still work?...I am assuming so...

Would they run cooler?....

Could anyone foresee any negative effects?....

Larry ve3fxq
ve3fxq@rogers.com

355. Re: Zener Diode

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 18:26:23 UTC
From: larry <larya@rogers.com>
Message-ID: <jXANb.36653$ZuL1.22880@twister01.bloor.is.net.cable.rogers.com>
Source record: 29542

Greetings

Unfortunately I can only read 2 or the responces...

May I ask what the zener diode is regulating voltage for....?

"DOUGLAS SNOWDEN" <SNOWDEN@peoplepc.com> wrote in message
news:vv0dkt19p13a76@corp.supernews.com...
> I think I remember seeing something about this at AG6K
> web site. I built a 3-1000Z amp once and strung 1N5400 series diodes
> together. Of course the bias was lower.
>
>
> Doug N4IJ
>
> <rick1_nospam@ultranet.com> wrote in message
> news:3feb9d8f.6066667@news.rcn.com...
> > Skip <Skip@none.co> wrote:
> >
> > >Hello List,
> > >
> > >I am looking for a source for a Zener Diode. I am building an HF
> > >Amplifier using a GS-35b and the schematic I'm using to build the amp
> > >calls for a 36v 50w zoner diode for bias. Here in New Zealand there
> > >does not seem to be anyone with anythings close to what I need.
> > >
> > > Also, would it be possible to string a few lower volt watt zeners
> > >together to come up with a close value to what is needed?
> > >
> > >Thanks for the help
> > >
> > >Skip..
> >
> > 36V Zeners are available from www.bgmicro.com. I'm not sure about the
> > power rating though. You might have to use it with a transistor to
> > handle the current.
> >
> > Rick
> >
>
>

356. Re: power transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 18:29:25 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <9_ANb.16349$wf1.13504@edtnps89>
Source record: 29543

Behold, larry signalled from keyed 4-1000A filament:

> Would they still work?...I am assuming so...

Yes.

> Would they run cooler?....

Depends. If the core is of good quality then they'll run cooler. Eddy
current effects are more pronounced at higher frequencies.

> Could anyone foresee any negative effects?....

You may get higher than anticipated secondary voltage.

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

357. Re: Radio Shack Quitting Parts Business?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 18:42:01 UTC
From: Scanman <scanman@scanman.com>
Message-ID: <daBNb.5310$5M.129859@dfw-read.news.verio.net>
Source record: 29544

Yes, it is amazing - the sizes - isn't it. It had been a while since I ordered those bulbs and I only needed them that one time, so I couldn't recall the exact name. Matter of fact, because they had burned out so soon, I think I bought 3 sets. I figured that would be about the life of the radio - which I had won at a Hamfest. It seems to me, that must be an inherent defect with the 212 RH or at least some of the models. I know several who had to replace them after a short period of ownership. I don't think my radio was 2 years old. And certainly, when I was away at work or whatever, it wasn't on all that time. So it "seems" to me, the run of bulbs they had were apparently defective. Mine that I installed have been in there since. I feel bad for a friend of mine, he sent his to Yaesu to have them replaced. Ouch! Before someone may say mobile abuse, mine was used on a desk. They still burned out probably far faster than they should have. I'm not aware of any "life" of those as compared to say lights for your home with say a 1000 hour life. Glad you were able to find a parts source nearby, it sure helps! SM
"Claudia & Reed Park" <reedpark@nbnet.nb.ca> wrote in message
news:4006D93B.3117C465@nbnet.nb.ca...

Scanman wrote:

Look up Hosfelt Electronics. They carry those small lamps I believe. I bought some for my 212RH and I believe it was them I bought them from. You want the "Microwheat" bulbs.. I think that is what they are called. Or maybe mini wheat as the wheats are small in their own right. They are out there to be found though from regular parts places. SM.
Just got back inside form the minus 42 (wind chill temperature) degree outside.
Tried a local electronic repair place in town and found the lamps I was looking for.
Also found that they sell other electronic stuff. Nothing on display, one has to ask
at the front counter, but what the heck. At least I now know they have parts
and will sell in lots of one, or more. :-)
Hard to believe just how small some lamps can get. Grain of wheat, grain
of rice and grain of sand. The one in my digital watch is so small it looks like
a swollen spot on a piece of human hair.

7 3 to all
Reed - VE1NU

Looking for information on Marconi SMR-3 and
Northern Electric R8119A receivers of WW2.

358. Re: Sound card installed?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 18:45:30 UTC
From: "Mike M." <notme@invalid.email.net>
Message-ID: <9qnd00ljl9mntouea860sf19h5c8sb3ad9@4ax.com>
Source record: 29546

On 07 Jan 2004 18:12:12 GMT, fazamy@aol.com (FAZAMY) wrotF:

>On a vintage 1994 PC with a Windows 95 upgrade, where do you look to see if a
>sound card is installed? Inside the cpu or somewhere in the control panel?
>Both?
>If you just have to check in the control panel (Hardware Profile?) what would
>be the designation for it?
>
>Thanks,
>KB2AMY

If you want to determine if a soundcard is physically installed, look
at the back panel and look for line-in, line-out/speaker and mic
jacks. Looking in Windows control panel, device manager will tell you
if the drivers are installed and allegedly operational.

359. Re: power transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 18:47:28 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <100do1or1m0j17f@corp.supernews.com>
Source record: 29545

I'd try them, but cautiously. Running a 60Hz transformer at 500Hz will mean that you have a higher unloaded inductance (good), a higher leakage inductance (bad), lower peak flux in the core (good), higher eddy current losses (bad), etc., etc. The eddy current losses are what will get you in theory, but in practice the smaller power transformers have laminations that seem to be thinner than necessary as a matter of constructional convenience.

Hook it up, try it out, look for sparks, smell for smoke, and after a while put one of your less-valuable fingers on the core and see if it's getting hot.

Back in the days of tubes it was common to see a moderate-power line transformer used as an output or a modulation transformer. If that's what you're thinking then search around on the web -- I recall a pretty comprehensive article about converting a power transformer to an output or modulation transformer (I can't remember which). I'm too young to have actually done this, but if this is what you're trying maybe you can find the article.

"larry" <larya@rogers.com> wrote in message
news:uTANb.36607$ZuL1.10837@twister01.bloor.is.net.cable.rogers.com...
> Way back, when I was 7 or 8 years old, (I am 55 now), my dad got me an
> electric train set....During that Christmas we were at my Grandparents
place
> and they were on 25 hz power....At home we were on 60 hz power...
>
> We had to be at home for me to try out my new train set.
>
> What has that got to do with this question?...
>
> This....
>
> I have a number of transformers and would like to experiement using then
at
> a higher frequency....let say 500 hz and / or higher.....
>
> Would they still work?...I am assuming so...
>
> Would they run cooler?....
>
> Could anyone foresee any negative effects?....
>
> Larry ve3fxq
> ve3fxq@rogers.com
>

>

360. Re: power transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 19:11:05 UTC
From: larry <larya@rogers.com>
Message-ID: <dBBNb.37235$ZuL1.33916@twister01.bloor.is.net.cable.rogers.com>
Source record: 29447

First: thanks for the replys....
Second: Sometimes I feel like I must be very dense....what does the
following line mean...?
> Behold, larry signalled from keyed 4-1000A filament
I am still trying to figure out the meaning...sorry...
Larry

"Gregg" <nospam@unknown.org> wrote in message
news:9_ANb.16349$wf1.13504@edtnps89...
> Behold, larry signalled from keyed 4-1000A filament:
>
>
> > Would they still work?...I am assuming so...
>
> Yes.
>
> > Would they run cooler?....
>
> Depends. If the core is of good quality then they'll run cooler. Eddy
> current effects are more pronounced at higher frequencies.
>
> > Could anyone foresee any negative effects?....
>
> You may get higher than anticipated secondary voltage.
>
> --
> Gregg
> *It's probably useful, even if it can't be SPICE'd*
> http://geek.scorpiorising.ca

361. Re: Overvoltage and reverse voltage protection

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 19:28:18 UTC
From: Eamon Skelton <Xnospam@oceanfree.net>
Message-ID: <pan.2004.01.15.19.28.17.916684@oceanfree.net>
Source record: 29461

On Sun, 11 Jan 2004 19:44:19 +0800, Richard Hosking wrote:

> Dear all
> I want to design a power supply for a low power rig with protection for
> reverse and overvoltage. The requirement would be about 1A at 12-14V.
> What is the best way of achieving this? I guess a diode would give
> reverse voltage protection but the 0.6V drop is a problem.
>
> Richard

Hi Richard.

If you do decide to use a switching supply, the diode
or diodes in the output of the switching circuit may
me be all the reverse voltage protection you need.
Make sure that the output smoothing capacitor can
handle any voltage it is likely to encounter.

A crowbar and fuse will protect against overvoltage.
A hefty Thyristor (SCR or whatever they call them now)
or triac makes a good crowbar.

73, Ed. EI9GQ.

--
Remove 'X' to reply by E-mail.
Linux 2.4.23

362. Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 20:05:16 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <100dsk7hvh9hi0f@corp.supernews.com>
Source record: 29448
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

Sometime ago I think I recall someone posted or wrote an article on a neat way to isolate a shorted component on a pcb using common test eqpt but I can't recall the methodology. I'm trying to find a shorted component on a Wavetek 188-S-1257 signal generator. The B+ line reads about 0.4 ohms and I'm not having much luck disconnecting componets. I don't have a schematic and my eyes ain't what they used to be for tracing and I want to minimize the unsoldering. Does anyone recall the article or have a good way?
tnx
hank wd5jfr

363. Re: power transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 20:11:25 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <100dsvo6qr8sc47@corp.supernews.com>
Source record: 29449

If you look on the back of military equipment and some better test
equipment you'll see that much of it is rated from 50Hz to 400Hz.
hank wd5jfr
"larry" <larya@rogers.com> wrote in message
news:uTANb.36607$ZuL1.10837@twister01.bloor.is.net.cable.rogers.com...
> Way back, when I was 7 or 8 years old, (I am 55 now), my dad got me an
> electric train set....During that Christmas we were at my Grandparents
place
> and they were on 25 hz power....At home we were on 60 hz power...
>
> We had to be at home for me to try out my new train set.
>
> What has that got to do with this question?...
>
> This....
>
> I have a number of transformers and would like to experiement using then
at
> a higher frequency....let say 500 hz and / or higher.....
>
> Would they still work?...I am assuming so...
>
> Would they run cooler?....
>
> Could anyone foresee any negative effects?....
>
> Larry ve3fxq
> ve3fxq@rogers.com
>
>

364. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 20:26:16 UTC
From: Andy Cuffe <baltimora@psu.edu>
Message-ID: <4006F7F9.6A6D@psu.edu>
Source record: 29450
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

Henry Kolesnik wrote:
>
> Sometime ago I think I recall someone posted or wrote an article on a neat
> way to isolate a shorted component on a pcb using common test eqpt but I
> can't recall the methodology. I'm trying to find a shorted component on a
> Wavetek 188-S-1257 signal generator. The B+ line reads about 0.4 ohms and
> I'm not having much luck disconnecting componets. I don't have a schematic
> and my eyes ain't what they used to be for tracing and I want to minimize
> the unsoldering. Does anyone recall the article or have a good way?
> tnx
> hank wd5jfr

I've used an ESR meter to find shorts on circuit boards. The have
enough resolution below an ohm to tell when you're getting closer to the
short.
--
Andy Cuffe
baltimora@psu.edu

365. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 20:36:47 UTC
From: Bob Shuman <reshuman@removethis.lucent.com>
Message-ID: <bu6tl2$mmk@netnews.proxy.lucent.com>
Source record: 29451
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

When I worked as a circuit test engineer that produced fairly complex multi-layer PCBs many years ago, there were three primary methods we used to find shorts across the power rails.

1. Use a calibrated micro-ohm meter, fixing one lead to the PCB ground and taking various resistance readings by moving the other lead from the board edge connector along the traces to locate the point where the meter provided the lowest resistance reading. You could then fix the lead to that point and then take readings by moving the other (previously fixed) lead along the grounds to again find the minimal reading. This usually led you to the area of the board where the short or defective component was located. If you had sensitive enough equipment and some good test leads, this procedure usually worked pretty well when there was an actual hard short.

2. Apply a current limited, voltage limited (lower than the nominal design voltage, for instance 5V DC) power source across the power rail at the PCB edge connector. Start with a fairly low current limit and increase this as needed, but keeping the current reasonable (you don't want a defective component to explode - been there done that). We then used either a thermal sensitive plastic sheet (material it contained was like the stuff used in "mood rings" from the 1970's) or an infra-red camera to find the "hot spot" on the PCB. This technique had the advantage of working for soft shorts, such as were created by defective components (transistors, other semiconductors, ICs, capacitors, etc.) or even resistive type shorts that were created by contamination from foreign materials (conductive growths, moisture, salt water contamination, etc.) We were even able to "see" internal shorts on 8 layer circuit boards using the camera.

3. Visual observation and path tracing coupled with selective unsoldering of legs of suspect components (assumes through hole mounting, not surface mounting) and use of isolation rings (small plastic rings that slid over the unsoldered leg of an IC isolating it from the multi-layer solder pad/circuit. This technique was generally used as a last resort and usually in combination with procedures 1 and 2 above, prior to scrapping "difficult", but costly product that had been diagnosed with a power rail short.

The above techniques are what I used about 20+ years back when I had engineering responsibility in a large electronics factory. I'd imagine that there are likely better approaches today due to improvements in technology so would be interested to hear what others recommend.

Good luck!

Bob

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:100dsk7hvh9hi0f@corp.supernews.com...
> Sometime ago I think I recall someone posted or wrote an article on a neat
> way to isolate a shorted component on a pcb using common test eqpt but I
> can't recall the methodology. I'm trying to find a shorted component on
a
> Wavetek 188-S-1257 signal generator. The B+ line reads about 0.4 ohms and
> I'm not having much luck disconnecting componets. I don't have a
schematic
> and my eyes ain't what they used to be for tracing and I want to minimize
> the unsoldering. Does anyone recall the article or have a good way?
> tnx
> hank wd5jfr
>
>

366. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 21:08:25 UTC
From: dplatt@radagast.org
Message-ID: <100e0a9fqjrjq4b@corp.supernews.com>
Source record: 29452
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

>Sometime ago I think I recall someone posted or wrote an article on a neat
>way to isolate a shorted component on a pcb using common test eqpt but I
>can't recall the methodology. I'm trying to find a shorted component on a
>Wavetek 188-S-1257 signal generator. The B+ line reads about 0.4 ohms and
>I'm not having much luck disconnecting componets. I don't have a schematic
>and my eyes ain't what they used to be for tracing and I want to minimize
>the unsoldering. Does anyone recall the article or have a good way?

Bob Pease gives a schematic for a short-circuit detector on page 21 of his "Troubleshooting Analog Circuits". It uses an LM10 op amp and an LM331 voltage-to-frequency converter, plus one transistor and some passives. You feed some low-voltage, current-limited power into one end of the shorted trace, slide the probe along the PCB trace starting from the power injection point, and listen to the tone. When you go along portions of the trace which aren't carrying the short-circuit current to ground, the tone remains stable. When you go along portions which _are_ carrying short-circuit current to ground, the tone rises (lower voltage present on the trace) as you move towards the short, and falls as you move away from it. When you pass the shorted point, the tone rises to its highest frequency and stays there.

Pease points out that you can use this same basic technique with nothing more than a current-limited voltage supply and a sensitive voltmeter (VTVM or FET-input DVM)... but that listening to tones is a good deal easier.

At .4 ohms, if you feed in 100 milliamps you'll get around 40 millivolts at the injection point, falling to zero at the point of the short. A good 3.5-digit voltmeter with a 2-volt scale ought to give you enough resolution to get quite close to where the short circuit is.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

367. FRG-100 What power connector ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 21:46:25 UTC
From: mike@corn2.freeserve.co.uk
Message-ID: <40070944.337399478@news.freeserve.net>
Source record: 29453

Hi Everyone,
I'm trying to identify the power connector used in the Yaesu FRG-100.
It appears, at first glance to be a standard 2.1mm tubular power
connector but it is actually somewhat different looking a little like
a shrouded coaxial connector.
Does anyone know what its called and where, preferably in UK, I can
obtain one.
There is no mention in either the Users Manual or the Service Manual.
thanks, Mike W, G8NXD qthr

368. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 21:54:48 UTC
From: kenneth l wright <wklw@cox.net>
Message-ID: <40070C28.FF6C97B3@cox.net>
Source record: 29454
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

Change all those little tear drop bypass caps connected to the shorted line.
Won't hurt to replace them all, might save a future short. Ken

Henry Kolesnik wrote:

> Sometime ago I think I recall someone posted or wrote an article on a neat
> way to isolate a shorted component on a pcb using common test eqpt but I
> can't recall the methodology. I'm trying to find a shorted component on a
> Wavetek 188-S-1257 signal generator. The B+ line reads about 0.4 ohms and
> I'm not having much luck disconnecting componets. I don't have a schematic
> and my eyes ain't what they used to be for tracing and I want to minimize
> the unsoldering. Does anyone recall the article or have a good way?
> tnx
> hank wd5jfr

369. Re: FRG-100 What power connector ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 21:58:01 UTC
From: mikea@mikea.ath.cx
Message-ID: <bu72d9ogv3@puck.litech.org>
Source record: 29455

Mike W <mike@corn2.freeserve.co.uk> wrote:
> Hi Everyone,
> I'm trying to identify the power connector used in the Yaesu FRG-100.
> It appears, at first glance to be a standard 2.1mm tubular power
> connector but it is actually somewhat different looking a little like
> a shrouded coaxial connector.
> Does anyone know what its called and where, preferably in UK, I can
> obtain one.
> There is no mention in either the Users Manual or the Service Manual.
> thanks, Mike W, G8NXD qthr

I'm using a bog-standard power connector, bought at Radio Shack, to
supply power to my FRG-100. I took it in and ran through the sample
connectors until I found one that fit, then bought it, a heavy-duty
12V power supply, a female cigarette lighter connector, and a cord to
go from cigarette lighter to the universal connector that the coaxial
power connector plugs into. Works _fine_

--
There was an actual St. Chad. He was an early English abbot, whose claim to
fame was that he was elected bishop of York but his election was nullified
by the archbishop of Canterbury. In other words, we have the perfect patron
of disputed elections. -- Arval d'Espas Nord, in rec.org.sca

370. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 22:07:54 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <100e3puk17cm2fe@corp.supernews.com>
Source record: 29456
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

Right now it looks like 2 might be the problem marked AVX 103 and AVX 849.
I'm guessing that they're tantalums but not sure. The Wavetake was mfg in
1989. I need help on the values and voltages. There's too many to just
start changing.
tnx
hank
"kenneth l wright" <wklw@cox.net> wrote in message
news:40070C28.FF6C97B3@cox.net...
> Change all those little tear drop bypass caps connected to the shorted
line.
> Won't hurt to replace them all, might save a future short. Ken
>
> Henry Kolesnik wrote:
>
> > Sometime ago I think I recall someone posted or wrote an article on a
neat
> > way to isolate a shorted component on a pcb using common test eqpt but I
> > can't recall the methodology. I'm trying to find a shorted component on
a
> > Wavetek 188-S-1257 signal generator. The B+ line reads about 0.4 ohms
and
> > I'm not having much luck disconnecting componets. I don't have a
schematic
> > and my eyes ain't what they used to be for tracing and I want to
minimize
> > the unsoldering. Does anyone recall the article or have a good way?
> > tnx
> > hank wd5jfr
>

371. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 22:11:13 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <40070FF9.6BAD534A@earthlink.net>
Source record: 29457
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

Henry Kolesnik wrote:
>
> Sometime ago I think I recall someone posted or wrote an article on a neat
> way to isolate a shorted component on a pcb using common test eqpt but I
> can't recall the methodology. I'm trying to find a shorted component on a
> Wavetek 188-S-1257 signal generator. The B+ line reads about 0.4 ohms and
> I'm not having much luck disconnecting componets. I don't have a schematic
> and my eyes ain't what they used to be for tracing and I want to minimize
> the unsoldering. Does anyone recall the article or have a good way?
> tnx
> hank wd5jfr

Use an adjustable DC power supply to feed the shorted power rail. Use
16 gauge, or larger wire to minimize the voltage drop. Make sure to
connect the meter negative to ground at the same point you connect the
adjustable power supply to the bad board. Set the adjustable DC power
supply to about a half amp, and use a DC voltmeter to read the voltage
drops across the traces. You will find a point where they level off.
Back up one part to the last linear voltage drop and you have found your
bad part. I prefer to use a 4ï¿½ digit voltmeter, or better to read minor
variations. Also, check the voltage on the ground buss if the board
isn't bolted to a chassis to find which part of the board has the
problem. I have fixed hundreds of shorted boards this way.

--
We now return you to our normally scheduled programming.

Take a look at this little cutie! ;-)
http://home.earthlink.net/~mike.terrell/photos.html

Michael A. Terrell
Central Florida

372. Re: Radio Shack Quitting Parts Business?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 22:19:58 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <40071206.172CC70D@earthlink.net>
Source record: 29458

(Your post is in HTML, and my browser won't allow me to quote your message so I had to copy and paste it)

Scanman wrote

Yes, it is amazing - the sizes - isn't it. It had been a while since I ordered those bulbs and I only needed them that one time, so I couldn't recall the exact
name. Matter of fact, because they had burned out so soon, I think I bought 3 sets. I figured that would be about the life of the radio - which I had won at
a Hamfest. It seems to me, that must be an inherent defect with the 212 RH or at least some of the models. I know several who had to replace them after
a short period of ownership. I don't think my radio was 2 years old. And certainly, when I was away at work or whatever, it wasn't on all that time. So it
"seems" to me, the run of bulbs they had were apparently defective. Mine that I installed have been in there since. I feel bad for a friend of mine, he sent
his to Yaesu to have them replaced. Ouch! Before someone may say mobile abuse, mine was used on a desk. They still burned out probably far faster
than they should have. I'm not aware of any "life" of those as compared to say lights for your home with say a 1000 hour life. Glad you were able to find
a parts source nearby, it sure helps! SM

Did you ever think about adding a resistor, or a couple diodes to reduce the voltage a little? It will extend the life of the bulb without a big change in brightness.
--
We now return you to our normally scheduled programming.

Take a look at this little cutie! ;-)
http://home.earthlink.net/~mike.terrell/photos.html

Michael A. Terrell
Central Florida

373. Re: power transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 22:22:59 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <400712BD.CDD61580@earthlink.net>
Source record: 29459

larry wrote:
>
> First: thanks for the replys....
> Second: Sometimes I feel like I must be very dense....what does the
> following line mean...?
> > Behold, larry signalled from keyed 4-1000A filament
> I am still trying to figure out the meaning...sorry...
> Larry

It is a nonsense phrase his browser tacks on to every message. It
takes the name from the previous message and adds the rest. Some people
think it is cute, or witty. Others just find it childish.

--
We now return you to our normally scheduled programming.

Take a look at this little cutie! ;-)
http://home.earthlink.net/~mike.terrell/photos.html

Michael A. Terrell
Central Florida

374. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 22:44:35 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <bu757rgmo1@newshost.mot.com>
Source record: 29460
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

Seems to me there's a way to use a moderate current and sense the _magnetic_ field. Follow the field around the board along the runners. However, I don't remember what was used to sense the field.

I'd probably try an audio sig gen to get an AC current and an old tape recorder magnetic head...and an audio amp...or let me see. What else is in the basement that can pick up a mag field. Hey! I have a stash of Hall sensors... Probably just about any high micro-henry or mili-henry inductor will do. I'll bet even a toroid will be a good "close-in" sensor. If it is laid right on the runner with the current, it'll probably pick it up. Seems like it would have a short range therefore accurate locating ability.

I was recently playing with a Simpson 60Hz AC current probe (5-100 amps) (made for a 260) and compared it with a small toroid I had lying about. To have something to sense other than 60Hz. I took the output leads of a 600 ohm AF generator and ran one through the toroid then just clipped them together (shorted output generator).and was able to sense it with the toroid (about 1/2 inch dia. about 40 turns on it). Using an o-scope. The higher freqs were better.

However, this has the current going through the toroid center. the best case. Have to see what I can induce with he wire right up against the outside.

--
Steve N, K,9;d, c. i My email has no u's.

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message news:100dsk7hvh9hi0f@corp.supernews.com...
> Sometime ago I think I recall someone posted or wrote an article on a neat
> way to isolate a shorted component on a pcb using common test eqpt but I
> can't recall the methodology. I'm trying to find a shorted component on
a
> Wavetek 188-S-1257 signal generator. The B+ line reads about 0.4 ohms and
> I'm not having much luck disconnecting componets. I don't have a
schematic
> and my eyes ain't what they used to be for tracing and I want to minimize
> the unsoldering. Does anyone recall the article or have a good way?
> tnx
> hank wd5jfr
>
>

375. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 22:54:04 UTC
From: Robert Mozeleski <moz@ncx.com>
Message-ID: <100e9njj2akaibb@corp.supernews.com>
Source record: 29462
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

Power it up on a variac, spray the board with freeze spray. The shorted components will defrost first!

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:100dsk7hvh9hi0f@corp.supernews.com...
> Sometime ago I think I recall someone posted or wrote an article on a neat
> way to isolate a shorted component on a pcb using common test eqpt but I
> can't recall the methodology. I'm trying to find a shorted component on a
> Wavetek 188-S-1257 signal generator. The B+ line reads about 0.4 ohms and
> I'm not having much luck disconnecting componets. I don't have a schematic
> and my eyes ain't what they used to be for tracing and I want to minimize
> the unsoldering. Does anyone recall the article or have a good way?
> tnx
> hank wd5jfr
>
>

376. Re: Radio Shack Quitting Parts Business?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-15 23:59:34 UTC
From: Scanman <scanman@scanman.com>
Message-ID: <WPFNb.5322$5M.129857@dfw-read.news.verio.net>
Source record: 29463

If you were asking me, I believe I checked the voltage and found it to be reasonable. It has been a long time since I've changed them out. As I said, the new ones have been in there since! But I know what you're talking about, I've done likewise in a few other types of radios! I can't speak for the others' whose radios I've heard of with the same problem. SM

"Michael A. Terrell" <mike.terrell@earthlink.net> wrote in message news:40071206.172CC70D@earthlink.net...
> (Your post is in HTML, and my browser won't allow me to quote your
> message so I had to copy and paste it)
>
> Scanman wrote
>
> Yes, it is amazing - the sizes - isn't it. It had been a while since I
> ordered those bulbs and I only needed them that one time, so I couldn't
> recall the exact
> name. Matter of fact, because they had burned out so soon, I think I
> bought 3 sets. I figured that would be about the life of the radio -
> which I had won at
> a Hamfest. It seems to me, that must be an inherent defect with the 212
> RH or at least some of the models. I know several who had to replace
> them after
> a short period of ownership. I don't think my radio was 2 years old. And
> certainly, when I was away at work or whatever, it wasn't on all that
> time. So it
> "seems" to me, the run of bulbs they had were apparently defective. Mine
> that I installed have been in there since. I feel bad for a friend of
> mine, he sent
> his to Yaesu to have them replaced. Ouch! Before someone may say mobile
> abuse, mine was used on a desk. They still burned out probably far
> faster
> than they should have. I'm not aware of any "life" of those as compared
> to say lights for your home with say a 1000 hour life. Glad you were
> able to find
> a parts source nearby, it sure helps! SM
>
>
>
> Did you ever think about adding a resistor, or a couple diodes to
> reduce the voltage a little? It will extend the life of the bulb without
> a big change in brightness.
> --
> We now return you to our normally scheduled programming.
>

> Take a look at this little cutie! ;-)
> http://home.earthlink.net/~mike.terrell/photos.html
>
> Michael A. Terrell
> Central Florida

377. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 00:11:41 UTC
From: kenneth l wright <wklw@cox.net>
Message-ID: <40072C3D.C96E5C2F@cox.net>
Source record: 29464
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

Just change the ones across the B+ line, shouldn't be that many. Ken

Henry Kolesnik wrote:

> Right now it looks like 2 might be the problem marked AVX 103 and AVX 849.
> I'm guessing that they're tantalums but not sure. The Wavetake was mfg in
> 1989. I need help on the values and voltages. There's too many to just
> start changing.
> tnx
> hank
> "kenneth l wright" <wklw@cox.net> wrote in message
> news:40070C28.FF6C97B3@cox.net...
> > Change all those little tear drop bypass caps connected to the shorted
> line.
> > Won't hurt to replace them all, might save a future short. Ken
> >
> > Henry Kolesnik wrote:
> >
> > > Sometime ago I think I recall someone posted or wrote an article on a
> neat
> > > way to isolate a shorted component on a pcb using common test eqpt but I
> > > can't recall the methodology. I'm trying to find a shorted component on
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> > > Wavetek 188-S-1257 signal generator. The B+ line reads about 0.4 ohms
> and
> > > I'm not having much luck disconnecting componets. I don't have a
> schematic
> > > and my eyes ain't what they used to be for tracing and I want to
> minimize
> > > the unsoldering. Does anyone recall the article or have a good way?
> > > tnx
> > > hank wd5jfr
> >

378. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 00:53:49 UTC
From: budgie <me@privacy.net>
Message-ID: <2fde00dcb8l97aaeh9v0no3b1jv8td0poc@4ax.com>
Source record: 29465
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

On Thu, 15 Jan 2004 16:44:35 -0600, "Steve Nosko"
<suteuve.nosukowicuz@moutouroula.com> wrote:

> Seems to me there's a way to use a moderate current and sense the
>_magnetic_ field. Follow the field around the board along the runners.
>However, I don't remember what was used to sense the field.

HP used to make a hall effect (IIRC) probe for current tracing. One of their
Bench Briefs technotes described the probe and the process.

379. Re: How to build 50 Mhz (6m) receiver for AM/CW/SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 01:16:56 UTC
From: LA8AK@online.no
Message-ID: <400722c2.12423037@news.online.no>
Source record: 29466

On Wed, 14 Jan 2004 22:36:27 +0100, "ON5MJ" <my_call_sign@skynet.be>
wrote:

>Hi Tim,
>
>I afterwards observed I forgot to place the URL on my post. It seems that
>you found it by yourself. But for others this finally the link ... beter
>late than never.
>
>http://users.skynet.be/on1dht/homebrew.htm
>
>Sorry for the mistake.
>
>73 de ON5MJ - Jacques
>
>
I wouldn't choose an exciter in this frequency range for use with 6m,
it is already known problems with using 28MHz, so I chose 14MHz for my
6m transverter, and it seems to have been a good reason for choosing
14MHz for 2m converters earlier

SM6DJH once described a way using double conversion for the
transmitter and single for receiver to avoid such problems

73
Jan-Martin
VHF techniques http://home.online.no/~la8ak/d.htm
--
Amount of SPAM is so large that MailWasher must delete 99% of the incoming mails
Cannot check every email manually. Please use intelligent title for email.
Mails without titles or using just "hi" is deleted

380. Re: Radio Shack Quitting Parts Business?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 01:30:29 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <40073EA9.51DD154B@earthlink.net>
Source record: 29467

Scanman wrote:
>
> If you were asking me, I believe I checked the voltage and found it to be
> reasonable. It has been a long time since I've changed them out. As I said,
> the new ones have been in there since! But I know what you're talking about,
> I've done likewise in a few other types of radios! I can't speak for the
> others' whose radios I've heard of with the same problem. SM

30 years ago I was a broadcast engineer at a B&W TV station. The
projector bulbs in the RCA film chain were rated for a 20 hour life at
120 volts, and they were pretty close to that figure. I couldn't depend
on a steady supply, so I adjusted the Variac in each project to run them
at 100 volts, and got over 300 hours out of every bulb after that. The
color temperature was out of spec, but you couldn't tell, because
everything was B&W.

--
We now return you to our normally scheduled programming.

Take a look at this little cutie! ;-)
http://home.earthlink.net/~mike.terrell/photos.html

Michael A. Terrell
Central Florida

381. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 01:37:25 UTC
From: DRGrok@munged.net
Message-ID: <40073fc6$0$6093$61fed72c@news.rcn.com>
Source record: 29468

I had good success with a variant of #2 on a very large digital board that had a short between the +5V and ground -- both of which were planes due to the high current and multiple loads.

I energized the +5V bus with a supply set for 1 V and current limited to 10 A. Then went around the board measuring between adjacent +5 and ground points [like across a bypass cap or an IC]. Where I found the lowest drop was the short.

Dr. G.

In article <bu6tl2$mmk@netnews.proxy.lucent.com>, "Bob Shuman" <reshuman@removethis.lucent.com> wrote:
>When I worked as a circuit test engineer that produced fairly complex
>multi-layer PCBs many years ago, there were three primary methods we used to
>find shorts across the power rails.
>
>1. Use a calibrated micro-ohm meter, fixing one lead to the PCB ground and
>taking various resistance readings by moving the other lead from the board
>edge connector along the traces to locate the point where the meter provided
>the lowest resistance reading. You could then fix the lead to that point
>and then take readings by moving the other (previously fixed) lead along the
>grounds to again find the minimal reading. This usually led you to the area
>of the board where the short or defective component was located. If you had
>sensitive enough equipment and some good test leads, this procedure usually
>worked pretty well when there was an actual hard short.
>
>2. Apply a current limited, voltage limited (lower than the nominal design
>voltage, for instance 5V DC) power source across the power rail at the PCB
>edge connector. Start with a fairly low current limit and increase this as
>needed, but keeping the current reasonable (you don't want a defective
>component to explode - been there done that). We then used either a thermal
>sensitive plastic sheet (material it contained was like the stuff used in
>"mood rings" from the 1970's) or an infra-red camera to find the "hot spot"
>on the PCB. This technique had the advantage of working for soft shorts,
>such as were created by defective components (transistors, other
>semiconductors, ICs, capacitors, etc.) or even resistive type shorts that
>were created by contamination from foreign materials (conductive growths,
>moisture, salt water contamination, etc.) We were even able to "see"
>internal shorts on 8 layer circuit boards using the camera.
>
>3. Visual observation and path tracing coupled with selective unsoldering of
>legs of suspect components (assumes through hole mounting, not surface
>mounting) and use of isolation rings (small plastic rings that slid over the
>unsoldered leg of an IC isolating it from the multi-layer solder

>pad/circuit. This technique was generally used as a last resort and usually
>in combination with procedures 1 and 2 above, prior to scrapping
>"difficult", but costly product that had been diagnosed with a power rail
>short.
>
>The above techniques are what I used about 20+ years back when I had
>engineering responsibility in a large electronics factory. I'd imagine that
>there are likely better approaches today due to improvements in technology
>so would be interested to hear what others recommend.
>
>Good luck!
>
> Bob
>
>"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
>news:100dsk7hvh9hi0f@corp.supernews.com...
>> Sometime ago I think I recall someone posted or wrote an article on a neat
>> way to isolate a shorted component on a pcb using common test eqpt but I
>> can't recall the methodology. I'm trying to find a shorted component on
>a
>> Wavetek 188-S-1257 signal generator. The B+ line reads about 0.4 ohms and
>> I'm not having much luck disconnecting componets. I don't have a
>schematic
>> and my eyes ain't what they used to be for tracing and I want to minimize
>> the unsoldering. Does anyone recall the article or have a good way?
>> tnx
>> hank wd5jfr
>>
>>
>
>

382. Re: Good Receiver for a 10-year Old

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 01:43:22 UTC
From: haf47@juno.com
Message-ID: <f03bf94f.0401151743.5cdd4e32@posting.google.com>
Source record: 29469

"Keyboard In The Wilderness" <KIYW@zilch.net> wrote in message
news:<21ANb.23933$zs4.10105@fed1read01>...
> Lots of kits and projects at URL:
> http://ac6v.com/kits.htm

Here is some info that may be of interest:

IMPROVED NEOPHYTE RECEIVER

This receiver was featured in the spring 1994 issue of Ham Brew
Magazine
Designed by Wes Baden, K6EIL

This is a nice 40 meter receiver and uses a NE602AN OR NE612AN mixer
chip
and incorporating an AF pre-amplifier and bandpass audio filter
will drive a 2 1/2" to 3" speaker to room level volume.
Kit includes etched circuit board and all board mount components
included is a very nice 20pf air vairable capactior..double bearing
type
has built in 8:1 reduction and 1/4" shaft
copy if artical included with kit...price of this kit is...$32.95

You can find the site where this is offered by doing a Google search
of "Dans Small Parts and Kits."

Ten-Tec also has a kit in their T-Kit series that sells for $29.95 and
comes with all of the parts to put it on any band from 80 thru 10, and
this also has an audio filter that works quite well. The Ten-Tec also
has a very fine instruction manual, so that would seem to be a better
kit for a kid.

Hope this is of some help.

73 de WA2AFD

383. Re: Good Receiver for a 10-year Old

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 01:52:27 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <100egumjlj3rkd7@corp.supernews.com>
Source record: 29470

Do you know where I could find a copy of the Ham Brew article? Is it on the
web someplace, or does Dan's include instructions?

I didn't think of Ten-Tec -- when I hear Ten-Tec I think "really expensive
American made radio", not "good cheap kit". That is my problem and no one
else's, of course.

"Howard" <haf47@juno.com> wrote in message
news:f03bf94f.0401151743.5cdd4e32@posting.google.com...
> "Keyboard In The Wilderness" <KIYW@zilch.net> wrote in message
news:<21ANb.23933$zs4.10105@fed1read01>...
> > Lots of kits and projects at URL:
> > http://ac6v.com/kits.htm
>
> Here is some info that may be of interest:
>
> IMPROVED NEOPHYTE RECEIVER
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> This receiver was featured in the spring 1994 issue of Ham Brew
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> This is a nice 40 meter receiver and uses a NE602AN OR NE612AN mixer
> chip
> and incorporating an AF pre-amplifier and bandpass audio filter
> will drive a 2 1/2" to 3" speaker to room level volume.
> Kit includes etched circuit board and all board mount components
> included is a very nice 20pf air vairable capactior..double bearing
> type
> has built in 8:1 reduction and 1/4" shaft
> copy if artical included with kit...price of this kit is...$32.95
>
> You can find the site where this is offered by doing a Google search
> of "Dans Small Parts and Kits."
>
> Ten-Tec also has a kit in their T-Kit series that sells for $29.95 and
> comes with all of the parts to put it on any band from 80 thru 10, and
> this also has an audio filter that works quite well. The Ten-Tec also
> has a very fine instruction manual, so that would seem to be a better
> kit for a kid.
>
> Hope this is of some help.
>
> 73 de WA2AFD

384. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 01:54:55 UTC
From: Uncle Peter <radioconnectionNO@cox.netSPAM>
Message-ID: <RvHNb.9859$ct4.9378@lakeread05>
Source record: 29471
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:100e3puk17cm2fe@corp.supernews.com...
> Right now it looks like 2 might be the problem marked AVX 103 and AVX 849.
> I'm guessing that they're tantalums but not sure. The Wavetake was mfg in
> 1989. I need help on the values and voltages. There's too many to just
> start changing.
> tnx
> hank

The tantalums in WaveTeks were the weak links. I was continually chasing
shorted tantalum bypasses when I owned two WaveTek 3000 signal
generators.

Pete

385. Re: Good Receiver for a 10-year Old

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 02:08:44 UTC
From: Scanman <scanman@scanman.com>
Message-ID: <0JHNb.5326$5M.130327@dfw-read.news.verio.net>
Source record: 29472

"Howard" <haf47@juno.com> wrote in message
news:f03bf94f.0401151743.5cdd4e32@posting.google.com...
> "Keyboard In The Wilderness" <KIYW@zilch.net> wrote in message
news:<21ANb.23933$zs4.10105@fed1read01>...
> > Lots of kits and projects at URL:
> > http://ac6v.com/kits.htm
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> Here is some info that may be of interest:
>
> IMPROVED NEOPHYTE RECEIVER
>
> This receiver was featured in the spring 1994 issue of Ham Brew
> Magazine
> Designed by Wes Baden, K6EIL
>
> This is a nice 40 meter receiver and uses a NE602AN OR NE612AN mixer
> chip
> and incorporating an AF pre-amplifier and bandpass audio filter
> will drive a 2 1/2" to 3" speaker to room level volume.

<snipped>

I have a question, has anyone built the above and had success with it? A friend of mine built a kit once from Ramsey - it used a NE6XX chip and the receiver was the biggest piece of garbage I had ever seen. He built it right, I and another person checked his work and tried to get it to work for him, that thing had NO EARS! A WASTE. It had some audio, but it sucked for volume and that wasn't counting the static when "trying" to receive. He called Ramsey to complain, they wanted a bit of change to correct it for him.. The kit was about $30 to start with. In the end, he would have had about $80 or so tied into a crappo receiver. I'd hate like hell for that kid to be disappointed when he is done. I know I've been down that road and it sucks. That can sure suck the interest right out of a newbie real fast. I'm not saying the above mentioned design or circuit is bad. I don't know, I've never tried one. All I'm doing is comparing the similar - even if only in the chip used - design basis. I don't want to see the kid crushed by a non working unit. Even with the Heath Kits, some times, there were defective components or so on. Eico too. I hope the father or whoever - is prepared to help the boy along and EXPLAIN any problems up front so the kid isn't blown away to the point of saying to hell with it and quitting if the item doesn't work. Some soldering practice would be good too, if he's not done any as yet. SM.

386. Re: power transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 03:42:22 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <wJOdne3beI6sd5rd4p2dnA@ctc.net>
Source record: 29477

> Way back, when I was 7 or 8 years old, (I am 55 now), my dad got me an
> electric train set....During that Christmas we were at my Grandparents
place
> and they were on 25 hz power....At home we were on 60 hz power...
>
> We had to be at home for me to try out my new train set.
>
> What has that got to do with this question?...
>
> This....
>
> I have a number of transformers and would like to experiement using then
at
> a higher frequency....let say 500 hz and / or higher.....
>
> Would they still work?...I am assuming so...
>
> Would they run cooler?....

Usually if the transformer was designed for a low frequency it will work at a higher one tuil the frequency is so high you run into core losses. If a transformer is designed for a higher frequcncy it will overheat if ran on a much lower frequency.
The military used to use about 400 hz AC in the planes so they could save weight on the transformer cores for one reason.

387. Re: Good Receiver for a 10-year Old

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 03:47:10 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <wJOdnezbeI6vd5rd4p2dnA@ctc.net>
Source record: 29478

> I didn't think of Ten-Tec -- when I hear Ten-Tec I think "really expensive
> American made radio", not "good cheap kit". That is my problem and no one
> else's, of course.
>

That is what I usually think also. I did put together their 6 to 20 meter transverter several years ago and it seemed to work fine for me. Receiver converter part was very sensitive and I received good audio reports from it using a Yaesu 757 lowband rig.

388. Re: power transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 03:53:33 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <1fJNb.19650$Eq.12159@clgrps12>
Source record: 29473

Behold, Michael A. Terrell signalled from keyed 4-1000A filament:

> larry wrote:
>>
>> First: thanks for the replys....
>> Second: Sometimes I feel like I must be very dense....what does the
>> following line mean...?
>> > Behold, larry signalled from keyed 4-1000A filament
>> I am still trying to figure out the meaning...sorry... Larry
>
> It is a nonsense phrase his browser tacks on to every message. It
> takes the name from the previous message and adds the rest. Some people
> think it is cute, or witty. Others just find it childish.
>

Yeah, I just found the default soooooo boring ;-)

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

389. fs andros 3 gas analyzer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 05:22:08 UTC
From: bobinphx <rbelisle1@cox.net>
Message-ID: <7uKNb.3519$AA6.2296@fed1read03>
Source record: 29474

andros 3 gas analyzer. Pulled from a Sun Bear II automotive engine analyzer (was working fine) Gas chamber has two inlets, one exhaust. Measures gases via infrared diffraction. Uses a rotating mirror, IR source and receiver. Here is a link to the MFGR http://www.andros.com

Lots of good parts for the homebrewer.....

$20.00 you pay for shipping
bob in phx

390. Space-Related Ham Activities

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 05:26:12 UTC
From: Brian Webb <kd6nrp@earthlink.net>
Message-ID: <UBKNb.11587$1e.5021@newsread2.news.pas.earthlink.net>
Source record: 29475

Hi All:

This is KD6NRP in southern California. I maintain a web site (www.spacearchive.info) that covers astronomy and space news for California, Arizona, Nevada, Utah, and New Mexico.

Besides publishing stories about what NASA and universities are up to, I'd like to begin adding news stories about space-related amateur radio activities and events in the Southwest.

Here are some of the activities I'm interested in:

- High altitude balloon flights

- High altitude rocket launches

- Amateur satellite construction/prelaunch preparations

- Meteorscatter comms during meteor showers

- Extensive VHF openings due to aurorae, etc.

Please let me know if you learn of any such events.

73

Brian, KD6NRP

391. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 12:26:53 UTC
From: Wild Bill <kwag98@usachoice.net>
Message-ID: <4007d64a_2@127.0.0.1>
Source record: 29476
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

I haven't tried one, but floppy disk drive heads are sensitive. I was
reminded of a circuit in a magazine (many years ago) that used a floppy head
for a pickup.

WB
....

"Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote in message
news:bu757rgmo1@newshost.mot.com...
> Seems to me there's a way to use a moderate current and sense the
> _magnetic_ field. Follow the field around the board along the runners.
> However, I don't remember what was used to sense the field.
>
>
>
> I'd probably try an audio sig gen to get an AC current and an old tape
> recorder magnetic head...and an audio amp...or let me see. What else is
in
> the basement that can pick up a mag field. Hey! I have a stash of Hall
> sensors... Probably just about any high micro-henry or mili-henry
inductor
> will do. I'll bet even a toroid will be a good "close-in" sensor. If it
is
> laid right on the runner with the current, it'll probably pick it up.
Seems
> like it would have a short range therefore accurate locating ability.
>
> I was recently playing with a Simpson 60Hz AC current probe (5-100
amps)
> (made for a 260) and compared it with a small toroid I had lying about.
To
> have something to sense other than 60Hz. I took the output leads of a 600
> ohm AF generator and ran one through the toroid then just clipped them
> together (shorted output generator).and was able to sense it with the
toroid
> (about 1/2 inch dia. about 40 turns on it). Using an o-scope. The higher
> freqs were better.
>
>
>
> However, this has the current going through the toroid center. the
best
> case. Have to see what I can induce with he wire right up against the
> outside.

>
>
>
> --
> Steve N, K,9;d, c. i My email has no u's.
>
>
> "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
> news:100dsk7hvh9hi0f@corp.supernews.com...
> > Sometime ago I think I recall someone posted or wrote an article on a
neat
> > way to isolate a shorted component on a pcb using common test eqpt but I
> > can't recall the methodology. I'm trying to find a shorted component on
> a
> > Wavetek 188-S-1257 signal generator. The B+ line reads about 0.4 ohms
and
> > I'm not having much luck disconnecting componets. I don't have a
> schematic
> > and my eyes ain't what they used to be for tracing and I want to
minimize
> > the unsoldering. Does anyone recall the article or have a good way?
> > tnx
> > hank wd5jfr
> >
> >
>
>

392. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 14:24:49 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <4007F428.136C22A5@earthlink.net>
Source record: 29479
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

Wild Bill wrote:
>
> I haven't tried one, but floppy disk drive heads are sensitive. I was
> reminded of a circuit in a magazine (many years ago) that used a floppy head
> for a pickup.

Some questions. How are you going to position it against the trace
accurately? What about double sided, or multilayer boards?

The problems with using AC to find shorts is that you get false peaks
and dips from the inductance of the traces, and the characteristics of
the components. Another problem is that some parts self destruct with
only a small reverse voltage so you can damage a lot of parts while
troubleshooting the board.

I used the DC voltage drop & sensitive digital meter method on boards
that people couldn't fix with AC, then had to find the parts they
damaged. The whole idea is to find and fix a problem quickly, and
reliably.

--
We now return you to our normally scheduled programming.

Take a look at this little cutie! ;-)
http://home.earthlink.net/~mike.terrell/photos.html

Michael A. Terrell
Central Florida

393. Re: Good Receiver for a 10-year Old

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 15:10:53 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <lbUNb.93$Nu2.55@newsfep1-gui.server.ntli.net>
Source record: 29480

> That is what I usually think also. I did put together their 6 to 20
meter
> transverter several years ago and it seemed to work fine for me. Receiver
> converter part was very sensitive and I received good audio reports from
it
> using a Yaesu 757 lowband rig.
==========
Question : Is the Ten-Tec 6m transverter also available for 28 MHz e.g.
RX : 50 --> 28 MHz ; TX : 28 ---> 50 MHz
or can the 14 to 50 MHz transverter be readily modified for operation
from a 28 MHz base unit ?

Reason for the above question : I have an old (but almost unused) Yaesu
FT901DM HF transceiver with a FTV901R transverter with 2m and 70cms
modules but without a 6 m module.
The system works through the HF transceiver's 28 - 30 MHz band . In
Europe the 6m band is from 50 - 52 MHz.

TIA for any advice.

Frank GM0CSZ / KN6WH based in Scotland.

394. Re: Radio Shack Quitting Parts Business?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 15:17:50 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <mbUNb.94$Nu2.24@newsfep1-gui.server.ntli.net>
Source record: 29482

Hard to believe just how small some lamps can get. Grain of wheat, grain
of rice and grain of sand. The one in my digital watch is so small it looks like
a swollen spot on a piece of human hair.
==========
When having to replace 'tiny bulbs' consider conversion to LEDs . These are readily
available (also the high intensity ones).
Although you might have to add a resistor ,they will last forever .....or at least a
lifetime.

Frank GM0CSZ / KN6WH

395. Re: power transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 15:55:40 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <nbUNb.95$Nu2.17@newsfep1-gui.server.ntli.net>
Source record: 29481

> I have a number of transformers and would like to experiement using then
at
> a higher frequency....let say 500 hz and / or higher.....
>
> Would they still work?...I am assuming so...
>
> Would they run cooler?....
>
> Could anyone foresee any negative effects?....
==========
Running transformers on a higher freq is fine provided the core can manage
the higher freq.

During the valve era ,aeronautical radio equipment ran on 400 Hz resulting
in smaller and hence lower weight transformers.

However running power supply transformers at an AC frequency lower than the
one they are designed for might cause the laminated core to overheat.

In practice : 50 Hz transformers meant for use in Europe and elsewhere can
be readily used in the US and Canada.
However transformers designed for 60 Hz having 'marginal cores' could
overheat when used on a 50 Hz supply.
So equipment with 'wallwarts' purchased in the US ,(apart from being
suitable for 117 V only) I never use on a 50 Hz supply system.

Nowadays with much equipment having a switch mode power supply , the
frequency / voltage problem no longer exists.

Frank GM0CSZ / KN6WH

396. Re: Radio Shack Quitting Parts Business?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 16:46:47 UTC
From: Claudia & Reed Park <reedpark@nbnet.nb.ca>
Message-ID: <40081617.D1683C00@nbnet.nb.ca>
Source record: 29484

Howard Eisenhauer wrote:

> Reed, Digikey has a warehouse in Winnapeg that they service Canada
> from, also a catalog with Canadian pricing on line.
>
> http://dkc1.digikey.com/ca/digihome.html

Thanks Howard.

> There is a $6.50 handling charge on orders less than $32 something
> bucks, plus shipping of course. I've used them a few times, they ship
> purolater, it arrives within a few days.

Purolator is most acceptable. Have always had good experiences with
both Purolator and the Post Office. Now, UPS is something else.

> of course, you could drive
> down to Dartmouth & give your buisness to RAE or Jentronics but they
> probably won't have the stuff you want in stock anyhow.

They are also 3 hours away from here. Hard to believe, that at one time,
CamGuard and RAE were both in Moncton which is only about 10 minutes
from where I live (at rush hour).

> Not the perfect solution but this is the world we live in -

You are so right.

>
> 7 3
> Reed - VE1NU
>
> ---
>
> Looking for information on Marconi SMR-3 and
> Northern Electric R8119A receivers of WW2.

Thanks to all that have made comments and replies. Your input
has been appreciated.

397. Free Roland XY Plotter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 17:18:45 UTC
From: Jim Weir <jim@rst-engr.com>
Message-ID: <7k6g0018bnjmh5fk8spih0ctg5n1qcp80c@4ax.com>
Source record: 29485
Cross-posted to: rec.aviation.homebuilt,sci.electronics.cad,rec.radio.amateur.homebrew

I have a relatively ancient Roland single-pen XY plotter (B-size, or 11" x 17") that has been sitting in the hangar wrapped in plastic for at least 15 years. It was at one time the top of the line and is accurate as you can make the pen line. It uses india-ink pens, and as I recall, you can use a regular KohInOor pen in the holder. The language is either Roland or HPGL. As I recall, it used the parallel port and also had an RS-232 interface, but I'm not sure about the serial port part. It sits flat on a desktop.

When I packed it up it worked perfectly and I believe all the documentation that came with the unit is still with the unit. I'm not saying that 15 years in a hot/cold hangar hasn't taken its toll, but you can't beat the price.

It is free with one caveat: You have to pick it up at Grass Valley CA airport over this weekend. No shipping. If I have to ship it, I'll list it on ebay come Monday morning and make a few bucks on the deal for the hassle of packaging it up. Free until then.

I'm headed out right now and won't be back until this afternoon, but if you want it, or can have one of your friends from the Sacramento area pick it up for you, email me jim@rstengineering.com and I'll email you back -- first postmark, first served. Please don't call -- the person answering the phone will have absolutely no idea what you are talking about.

Jim

Jim Weir (A&P/IA, CFI, & other good alphabet soup)
VP Eng RST Pres. Cyberchapter EAA Tech. Counselor
http://www.rst-engr.com jim@rst-engr.com

398. Re: Good Receiver for a 10-year Old

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 17:33:23 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <100g82t4vd1te6d@corp.supernews.com>
Source record: 29486

The father is an electronics engineer who has experience with receiver design and construction, so debugging isn't a problem. We _do_ need something that's going to go together easily without a bunch of futzing around (and without dad doing "minor" redesigns that "only" add a month to the construction time).

If it lives up to it's spec sheet the '602 should make a good receiver, I know it's in a lot of designs. It has a reputation that matches it's spec sheet -- it has good noise performance, lots of gain (which is nice in a DC receiver), and a mediocre 3IP (which is to be expected for a low-power device with high RF impedances).

We could probably throw something together from parts that I have in my shop, which would be fun for me. Unfortunately new designs never work right the first time, and you don't develop the joy of a good debugging session until you've been primed with some easy successes. I can see him watching me have fun for about 15 minutes then wandering off to play on the computor.

So the Neophyte has everything I want: It's simple, so it'll go together quick; it's through-hole, so he can solder it without use of a microscope; and it should actually be useful. The Ten-Tec has even more, because it has RX muting, which will come in handy if I loan him one of my QRP transmitters.

"Scanman" <scanman@scanman.com> wrote in message
news:0JHNb.5326$5M.130327@dfw-read.news.verio.net...
>
> "Howard" <haf47@juno.com> wrote in message
> news:f03bf94f.0401151743.5cdd4e32@posting.google.com...
> > "Keyboard In The Wilderness" <KIYW@zilch.net> wrote in message
> news:<21ANb.23933$zs4.10105@fed1read01>...
> > > Lots of kits and projects at URL:
> > > http://ac6v.com/kits.htm
> >
> > Here is some info that may be of interest:
> >
> > IMPROVED NEOPHYTE RECEIVER
> >
> > This receiver was featured in the spring 1994 issue of Ham Brew
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> > Designed by Wes Baden, K6EIL
> >
> > This is a nice 40 meter receiver and uses a NE602AN OR NE612AN mixer
> > chip
> > and incorporating an AF pre-amplifier and bandpass audio filter

> > will drive a 2 1/2" to 3" speaker to room level volume.
>
> <snipped>
>
> I have a question, has anyone built the above and had success with it? A
> friend of mine built a kit once from Ramsey - it used a NE6XX chip and the
> receiver was the biggest piece of garbage I had ever seen. He built it
> right, I and another person checked his work and tried to get it to work
for
> him, that thing had NO EARS! A WASTE. It had some audio, but it sucked for
> volume and that wasn't counting the static when "trying" to receive. He
> called Ramsey to complain, they wanted a bit of change to correct it for
> him.. The kit was about $30 to start with. In the end, he would have had
> about $80 or so tied into a crappo receiver. I'd hate like hell for that
kid
> to be disappointed when he is done. I know I've been down that road and it
> sucks. That can sure suck the interest right out of a newbie real fast.
I'm
> not saying the above mentioned design or circuit is bad. I don't know,
I've
> never tried one. All I'm doing is comparing the similar - even if only in
> the chip used - design basis. I don't want to see the kid crushed by a non
> working unit. Even with the Heath Kits, some times, there were defective
> components or so on. Eico too. I hope the father or whoever - is prepared
> to help the boy along and EXPLAIN any problems up front so the kid isn't
> blown away to the point of saying to hell with it and quitting if the item
> doesn't work. Some soldering practice would be good too, if he's not done
> any as yet. SM.
>
>

399. Re: Good Receiver for a 10-year Old

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 17:33:51 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <o8WdnY2EF45kj5Xd4p2dnA@ctc.net>
Source record: 29483

> Question : Is the Ten-Tec 6m transverter also available for 28 MHz e.g.
> RX : 50 --> 28 MHz ; TX : 28 ---> 50 MHz
> or can the 14 to 50 MHz transverter be readily modified for operation
> from a 28 MHz base unit ?
>
> Reason for the above question : I have an old (but almost unused) Yaesu
> FT901DM HF transceiver with a FTV901R transverter with 2m and 70cms
> modules but without a 6 m module.
> The system works through the HF transceiver's 28 - 30 MHz band . In
> Europe the 6m band is from 50 - 52 MHz.

The 20 to 6 meter converter is made to operate in the low end of 6 meters.
The US band is 50 to 54 mhz but TT does not recommend operating much above
52 mhz with their transverter.
They do make a 2 meter to 6 meter transverter so you could run you equipment
and feed it to the trtansverter to get on 6 that way.

Converting from 10 meters to 6 meters is not done very often as it is
difficult to keep the 2nd harmonic of 10 meters out of the 6 meter output.
By changing crystals and a few tuned circuits I don;t see why you could not
make the converter work with a 10 meter rig. It might be difficult to
filter out the 10 meter signal.

Go here and look at their products.

http://www.tentec.com/

I was having trouble reducing the lowband rig output to 5 to 10 watts needed
by the transverter. I finally designed a hard keying circuit and also
bypassed part of the transverter padding and fed the low level (milliwat)
signal into the transverter. It worked fine by doing that and no worries
about blowing out the backend of the transverter.

73 de ku4pt

400. Re: Noise in Ford F-150

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 17:38:45 UTC
From: ehsjr@bellatlantic.net
Message-ID: <4008201D.F46BB9E6@bellatlantic.net>
Source record: 29487

Scott wrote:
>
> Anybody have any ideas to lower noise in my FT-857 mounted in my F-150
> pickup? S7-S9 noise (engine running, with NB ON) on 17M (Only band I've
> tried on HF yet). Antenna is an Outbacker mounted on a mount I welded up
> for my receiver hitch and puts the base of the antenna at about roof level.
> Quiet as a mouse when truck is shut off. Go figure...hard to be "mobile"
> with the engine off ;)
>
> --
> Scott N0EDV
> Gotta Fly or Gonna Die
> http://corbenflyer.tripod.com
> Building RV-4

Excellent answers from others. I'll add that I faced and
fixed fuel pump the problem on my '91 Marquis - but that
was on 2 meters. Dunno if my fix would have prevented
the noise on HF as I didn't run HF mobile.

Anyway, I installed a BIG (physically) feed through
cap in the trunk in the + line to the pump. I also
installed a couple of .1 uf (as I recall they were
.1) caps - one across the power leads at the rig,
and one in the blower circuit. I was getting noise
from that too. That one was easy to isolate, as the
noise was there with the engine off and the vent/AC/heater
blower on.

My experience is not representative, and it was to
solve hash on my 2m/440 rig. A cap *in* the tank
should be more effective, in my view. But I figure
the more you know about these *()$%# noise problems,
the better off you are.

401. Re: Radio Shack Quitting Parts Business?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 17:45:21 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <4008232C.AE3797B6@earthlink.net>
Source record: 29488

Claudia & Reed Park posted in HTML that my browser won't quote:

Hard to believe just how small some lamps can get. Grain of wheat, grain
of rice and grain of sand. The one in my digital watch is so small it
looks like
a swollen spot on a piece of human hair.

Would that be a "Mustard seed"? ;-)

--
We now return you to our normally scheduled programming.

Take a look at this little cutie! ;-)
http://home.earthlink.net/~mike.terrell/photos.html

Michael A. Terrell
Central Florida

402. 50 MHz transverter (was : rx for a 10 year old)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 18:04:59 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <wJVNb.68$cm4.280087@newsfep2-gui.server.ntli.net>
Source record: 29494

Ralph , Tnx vy much for your prompt response.

The said Yaesu FTV901R transverter has a slot for a 6m module.

From the manual ,it works with a 22 MHz crystal for the 50 - 52 MHz portion of the band.

The manual states that the transverter includes a 'selective passband filter which effectively eliminates spurious signals', probably including the 2nd harmonics of 10 m you referred to.

I found another 28 to 50 MHz transverter design in a rather authoritative book : 'The VHF/UHF DX Book' edited by Ian White ,G3SEK

What I would prefer doing is to build a 50 MHz transverter to work with the FTV901R ,making it a neat 3 band package.

Another advantage is that the matching HF transceiver has a separate low power output to suit the transverter with the one I have already having the 144 -146 and 430 - 440 MHz band modules,which are the bands allocated to amateur radio in ITU Zone 1 ,which includes Europe.

Again , tnx for your response . As always I find the amateur radio homebrew NG a stimulating forum for enthousiasts.

Frank GM0CSZ / KN6WH based in Scotland UK

> > Question : Is the Ten-Tec 6m transverter also available for 28 MHz e.g.

> > RX : 50 --> 28 MHz ; TX : 28 ---> 50 MHz

> > or can the 14 to 50 MHz transverter be readily modified for

> > operation from a 28 MHz base unit ?

> >

> > Reason for the above question : I have an old (but almost unused)

> > Yaesu FT901DM HF transceiver with a FTV901R transverter with 2m

> > and 70cms modules but without a 6 m module.

> > The system works through the HF transceiver's 28 - 30 MHz band . In

> > Europe the 6m band is from 50 - 52 MHz.

>

> The 20 to 6 meter converter is made to operate in the low end of 6 meters.

> The US band is 50 to 54 mhz but TT does not recommend operating much

> above

> 52 mhz with their transverter.

> They do make a 2 meter to 6 meter transverter so you could run you

> equipment and feed it to the trtansverter to get on 6 that way.

>

> Converting from 10 meters to 6 meters is not done very often as it is

> difficult to keep the 2nd harmonic of 10 meters out of the 6 meter output.

> By changing crystals and a few tuned circuits I don;t see why you

> could not make the converter work with a 10 meter rig. It might be

> difficult to filter out the 10 meter signal.

>

> Go here and look at their products.

>

> http://www.tentec.com/

>

> I was having trouble reducing the lowband rig output to 5 to 10 watts

> needed by the transverter. I finally designed a hard keying circuit

> and also bypassed part of the transverter padding and fed the low

> level (milliwat) signal into the transverter. It worked fine by doing

> that and no worries about blowing out the backend of the transverter.

>

> 73 de ku4pt

403. Re: Good Receiver for a 10-year Old

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 18:58:46 UTC
From: ehsjr@bellatlantic.net
Message-ID: <400832BC.F2941337@bellatlantic.net>
Source record: 29489

Frank Dinger wrote:
>
> > That is what I usually think also. I did put together their 6 to 20
> meter
> > transverter several years ago and it seemed to work fine for me. Receiver
> > converter part was very sensitive and I received good audio reports from
> it
> > using a Yaesu 757 lowband rig.
> ================================
> Question : Is the Ten-Tec 6m transverter also available for 28 MHz e.g.
> RX : 50 --> 28 MHz ; TX : 28 ---> 50 MHz
> or can the 14 to 50 MHz transverter be readily modified for operation
> from a 28 MHz base unit ?
>
> Reason for the above question : I have an old (but almost unused) Yaesu
> FT901DM HF transceiver with a FTV901R transverter with 2m and 70cms
> modules but without a 6 m module.
> The system works through the HF transceiver's 28 - 30 MHz band . In
> Europe the 6m band is from 50 - 52 MHz.
>
> TIA for any advice.
>
> Frank GM0CSZ / KN6WH based in Scotland.

The Ten-Tec 20M-->6M converter can be easily modified
to 10M-->6M. I have done that and it works fine.
Essentially, you change the LO in the transverter
to 2 selectable LO's - one at 22 MHz, the second at 24
22 + 28 = 50; 22 + 29 = 51
24 + 28 = 52; 24 + 29 = 53

You need 2 xtals and a few components to change the
bandpass filter after the LO to 22-24 MHz
The xtals can be selected via relay or diode
switching. With a simple homebrew outboard filter,
the thing is pretty clean, according to a friend.
I never used the filter or put mine on a spectrum
analyzer, so the cleanness of the signal is hearsay.

404. Your pocket portable PLL non-DX AM/FM radio these days

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 19:25:26 UTC
From: Richard <nearlynews_email@ntlworld.com>
Message-ID: <bu9dpv$fk230$1@ID-150848.news.uni-berlin.de>
Source record: 29490

Went into a shop today and tried a small (5" x 3"x 3/4") PLL AM/FM portable. Tuned to a local AM station. Audio excellent for the size of speaker. Tuned up 9Khz and station still there, very much audible, with a bit of splatter. Tuned up18Khz from station, station still audible, but much slatter. Gosh, they make the AM filters wide these days don't they in your pocket portable!

I suppose that in practical use as a non DX radio, the wide bandwith has little significance. Not likely that another favourite station is going to be within 18Khz. Audio quality over selectivity obviously. You feel that the radio you are listening to is a peice of junk because of the wide bandwidth, but I guess not, if it gives such good audio quality for such a small size.

405. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 20:23:15 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <100gi1ql6j34v36@corp.supernews.com>
Source record: 29491
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

I found the bad tant cap, it was a 22 ufd, 20 volt, not any AVX but a yellowish tan blob with a big L. I replaced it with an electrolytic. I found it using my Fluke 87 that measures to the nearest tenth of an ohm and only the suspect cap would flicker between 0.3 and 0.2 ohms, all the rest were 0.4 or 0.3. Now I'm kicking myself for not buying an HP meter that could read 1/100ths maybe 1/1000ths because I could see no use for it. Now I can see a use and one is on my list but nevertheless my Fluke saved a lot of desoldering. The Wavetek still doesn't work as something else is keeping the voltage low and I think it might be a regulator. Now I wish I could find a schematic for the Wavetek 188-S-1257, as it would keep me from wasting so much time.
Thanks for all the tips. guys.
73
hank wd5jfr
"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:100dsk7hvh9hi0f@corp.supernews.com...
> Sometime ago I think I recall someone posted or wrote an article on a neat
> way to isolate a shorted component on a pcb using common test eqpt but I
> can't recall the methodology. I'm trying to find a shorted component on
a
> Wavetek 188-S-1257 signal generator. The B+ line reads about 0.4 ohms and
> I'm not having much luck disconnecting componets. I don't have a
schematic
> and my eyes ain't what they used to be for tracing and I want to minimize
> the unsoldering. Does anyone recall the article or have a good way?
> tnx
> hank wd5jfr
>
>

406. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 21:01:18 UTC
From: Franc Zabkar <fzabkar@optussnet.com.au>
Message-ID: <v7cf00pa192qo0ohdc22ubq1u62vsppq3s@4ax.com>
Source record: 29492
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

On Thu, 15 Jan 2004 16:54:48 -0500, kenneth l wright <wklw@cox.net>
put finger to keyboard and composed:

>Change all those little tear drop bypass caps connected to the shorted line.
>Won't hurt to replace them all, might save a future short. Ken

I agree. I saw a *lot* of shorted tantalums when I was troubleshooting
multilayer minicomputer PCBs during the 80s.

>Henry Kolesnik wrote:
>
>> Sometime ago I think I recall someone posted or wrote an article on a neat
>> way to isolate a shorted component on a pcb using common test eqpt but I
>> can't recall the methodology. I'm trying to find a shorted component on a
>> Wavetek 188-S-1257 signal generator. The B+ line reads about 0.4 ohms and
>> I'm not having much luck disconnecting componets. I don't have a schematic
>> and my eyes ain't what they used to be for tracing and I want to minimize
>> the unsoldering. Does anyone recall the article or have a good way?
>> tnx
>> hank wd5jfr

- Franc Zabkar
--
Please remove one 's' from my address when replying by email.

407. Re: Good Receiver for a 10-year Old

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 21:26:53 UTC
From: m <m@tek.com>
Message-ID: <xGYNb.56$6%6.23@news.level3.com>
Source record: 29493

I purchased the Ramsey $30 NE602 receiver for my son when he was about 15 years old about half a dozen years ago. It took him about 2 days, without my help (he had a couple simple digital projects under his belt.) It worked perfectly on applying power. Not as sensitive or selective as my Drake, but it was a good teaching kit for $30. Still works and every once and while I take it camping, since it's so light and receives the BBC (African service, since they gave up on North America.) He got his license the next year and has since moved up the food chain (although as with most kids, he's more into the digital than the magic of analog.)

Later I bought the Ramsey 30 meter CW QRP transmitter for myself and I use it when backpacking. I thought this also was a nifty kit. Put this in a tackle box the size of a VHS tape case and also later hopped it up so it puts out about 5 watts.

I don't know if I would try to use either of these for a neophyte ham though, for fear of frustrating someone who also has to deal with operating procedure, antennas, power, band plans, propagation and people on the band who seem to be sending at the speed of light. Your mileage may vary and since every kid is different, I would monitor closely, but not too closely (especially if you're the parent.)

Russ
N7QR
russm at ieee.org

"Scanman" <scanman@scanman.com> wrote in message
news:0JHNb.5326$5M.130327@dfw-read.news.verio.net...
>
> "Howard" <haf47@juno.com> wrote in message
> news:f03bf94f.0401151743.5cdd4e32@posting.google.com...
> > "Keyboard In The Wilderness" <KIYW@zilch.net> wrote in message
> news:<21ANb.23933$zs4.10105@fed1read01>...
> > > Lots of kits and projects at URL:
> > > http://ac6v.com/kits.htm
> >
> > Here is some info that may be of interest:
> >
> > IMPROVED NEOPHYTE RECEIVER
> >
> > This receiver was featured in the spring 1994 issue of Ham Brew
> > Magazine
> > Designed by Wes Baden, K6EIL
> >
> > This is a nice 40 meter receiver and uses a NE602AN OR NE612AN mixer

> > chip
> > and incorporating an AF pre-amplifier and bandpass audio filter
> > will drive a 2 1/2" to 3" speaker to room level volume.
>
> <snipped>
>
> I have a question, has anyone built the above and had success with it? A
> friend of mine built a kit once from Ramsey - it used a NE6XX chip and the
> receiver was the biggest piece of garbage I had ever seen. He built it
> right, I and another person checked his work and tried to get it to work
for
> him, that thing had NO EARS! A WASTE. It had some audio, but it sucked for
> volume and that wasn't counting the static when "trying" to receive. He
> called Ramsey to complain, they wanted a bit of change to correct it for
> him.. The kit was about $30 to start with. In the end, he would have had
> about $80 or so tied into a crappo receiver. I'd hate like hell for that
kid
> to be disappointed when he is done. I know I've been down that road and it
> sucks. That can sure suck the interest right out of a newbie real fast.
I'm
> not saying the above mentioned design or circuit is bad. I don't know,
I've
> never tried one. All I'm doing is comparing the similar - even if only in
> the chip used - design basis. I don't want to see the kid crushed by a non
> working unit. Even with the Heath Kits, some times, there were defective
> components or so on. Eico too. I hope the father or whoever - is prepared
> to help the boy along and EXPLAIN any problems up front so the kid isn't
> blown away to the point of saying to hell with it and quitting if the item
> doesn't work. Some soldering practice would be good too, if he's not done
> any as yet. SM.
>
>

408. Re: Your pocket portable PLL non-DX AM/FM radio these days

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 22:54:22 UTC
From: Dale Parfitt <par@parelectronics.com>
Message-ID: <yYZNb.3490$ko5.845@nwrddc01.gnilink.net>
Source record: 29495

"Richard" <nearlynews_email@ntlworld.com> wrote in message
news:bu9dpv$fk230$1@ID-150848.news.uni-berlin.de...
> Went into a shop today and tried a small (5" x 3"x 3/4") PLL AM/FM
portable.
> Tuned to a local AM station. Audio excellent for the size of speaker.
Tuned
> up 9Khz and station still there, very much audible, with a bit of
splatter.
> Tuned up18Khz from station, station still audible, but much slatter. Gosh,
> they make the AM filters wide these days don't they in your pocket
> portable!
>
What leads you to believe there are ANY filters in the radio? Sounds like
the BW obtainable easily within the IF and no lumped filters at all.

Dale W4OP

409. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 22:58:34 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <bu9qe0$6od$1@newshost.mot.com>
Source record: 29496
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

Well, I tried the toroid and absolutely zip when trying to tightly couple to the outside. They really are well contained fields. It did sense 60KHz well when through the center (It appeared to be resonant since it also picked up capacitively).

Hafta go looking for that mag tape head. I'll bet any ole' multi-turn non-toroid coil could work. Like those used in tube rigs ot older solid state. No shield. 1/8 or 1/2 diameter.

--
Steve N, K,9;d, c. i My email has no u's.

"Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote in message news:bu757rgmo1@newshost.mot.com...
> Seems to me there's a way to use a moderate current and sense the
> _magnetic_ field. Follow the field around the board along the runners.
> However, I don't remember what was used to sense the field.
>
>
>
> I'd probably try an audio sig gen to get an AC current and an old tape
> recorder magnetic head...and an audio amp...or let me see. What else is in
> the basement that can pick up a mag field. Hey! I have a stash of Hall
> sensors... Probably just about any high micro-henry or mili-henry inductor
> will do. I'll bet even a toroid will be a good "close-in" sensor. If it is
> laid right on the runner with the current, it'll probably pick it up. Seems
> like it would have a short range therefore accurate locating ability.
>
> I was recently playing with a Simpson 60Hz AC current probe (5-100 amps)
> (made for a 260) and compared it with a small toroid I had lying about. To
> have something to sense other than 60Hz. I took the output leads of a 600
> ohm AF generator and ran one through the toroid then just clipped them
> together (shorted output generator).and was able to sense it with the toroid
> (about 1/2 inch dia. about 40 turns on it). Using an o-scope. The higher
> freqs were better.
>
>

>
> However, this has the current going through the toroid center. the
best
> case. Have to see what I can induce with he wire right up against the
> outside.
>
>
>
> --
> Steve N, K,9;d, c. i My email has no u's.
>
>
> "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
> news:100dsk7hvh9hi0f@corp.supernews.com...
> > Sometime ago I think I recall someone posted or wrote an article on a
neat
> > way to isolate a shorted component on a pcb using common test eqpt but I
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> > Wavetek 188-S-1257 signal generator. The B+ line reads about 0.4 ohms
and
> > I'm not having much luck disconnecting componets. I don't have a
> schematic
> > and my eyes ain't what they used to be for tracing and I want to
minimize
> > the unsoldering. Does anyone recall the article or have a good way?
> > tnx
> > hank wd5jfr
> >
> >
>
>

410. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 23:13:31 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <bu9ra1$75f$1@newshost.mot.com>
Source record: 29398
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

Some quick, off hand comments imbedded below:

Steve N.

"Michael A. Terrell" <mike.terrell@earthlink.net> wrote in message
news:4007F428.136C22A5@earthlink.net...
>
> Some questions. How are you going to position it against the trace
> accurately?

First you do some controlled experiments where you put the test signal
through known runners to characterize the given pickup. How to orientate it
& where it picks up from.

> What about double sided,

I don't see a problem. If you get it set up so it detects at sufficient
distance (.070 or so).

> or multilayer boards?

Should still work, but you'll have to follow the target trace by "braile"
(sp) since you might not be able to see it.

> The problems with using AC to find shorts is that you get false peaks
> and dips from the inductance of the traces, and the characteristics of
> the components.

At audio this can't be a problem. I'm convinced it will just be current
defined by the generator.

With a runner short you won't have much current in anything but the
runners anyway, no?

> Another problem is that some parts self destruct with
> only a small reverse voltage so you can damage a lot of parts while
> troubleshooting the board.

Also, there won't be much voltage (remember the DC method?). If you do
have this, you're in risk of burning up runners. That's too much current.
>
> I used the DC voltage drop & sensitive digital meter method on boards
> that people couldn't fix with AC, then had to find the parts they
> damaged. The whole idea is to find and fix a problem quickly, and
> reliably.

Hard to believe a 600 ohm audio gen will blow up anything, but it certainly is possible... of course you just don't go in there blazing away with power..

I don't mean to say the DC method is bad, or that AC is better. AC is just another option, especially if you don't have a good enough DVM. Seems to me I saw a commercial system which did use AC.

My Fluke has problems under an ohm and at fractions of a volt even though it is a 5 digit. Should be good down there. May try it to see how DC works just for info.

73

--
Steve N, K,9;d, c. i My email has no u's.

411. Re: Noise in Ford F-150

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-16 23:23:17 UTC
From: "Gary P. Fiber" <g.fiber@verizon.net>
Message-ID: <tgsg009mqa050fnuc09il4dp7qf7715lo3@4ax.com>
Source record: 29397

On Fri, 16 Jan 2004 17:38:45 GMT, ehsjr@bellatlantic.net wrote:

>
>
>Scott wrote:
>>
>> Anybody have any ideas to lower noise in my FT-857 mounted in my F-150
>> pickup? S7-S9 noise (engine running, with NB ON) on 17M (Only band I've
>> tried on HF yet). Antenna is an Outbacker mounted on a mount I welded up
>> for my receiver hitch and puts the base of the antenna at about roof level.
>> Quiet as a mouse when truck is shut off. Go figure...hard to be "mobile"
>> with the engine off ;)
>>
>> --
>> Scott N0EDV
>> Gotta Fly or Gonna Die
>> http://corbenflyer.tripod.com
>> Building RV-4
>
>Excellent answers from others. I'll add that I faced and
>fixed fuel pump the problem on my '91 Marquis - but that
>was on 2 meters. Dunno if my fix would have prevented
>the noise on HF as I didn't run HF mobile.
>
>Anyway, I installed a BIG (physically) feed through
>cap in the trunk in the + line to the pump. I also
>installed a couple of .1 uf (as I recall they were
>.1) caps - one across the power leads at the rig,
>and one in the blower circuit. I was getting noise
>from that too. That one was easy to isolate, as the
>noise was there with the engine off and the vent/AC/heater
>blower on.
>
>My experience is not representative, and it was to
>solve hash on my 2m/440 rig. A cap *in* the tank
>should be more effective, in my view. But I figure
>the more you know about these *()$%# noise problems,
>the better off you are.

Ford has had a service bulletin out for years on several models about
the fuel pump noise. http://www.arrl.org/tis/info/pdf/W1MG.pdf have a
look at the url, it tells about your fuel pump noise even gives
diagrams and suggested time to install the filter for a qualfied
mechanic.
I found out about it when my 1996 Ford Ranger was still under

original factory warranty. The ford dealer added a fuel pump
electrical filter to the fuel pump in the fuel tank. Can't say it did
a whole lot of good though, but is better than it was before they
added the filter.

Gary K8IZ
Washington State Resident
Registered Linux User # 312991

412. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 00:24:35 UTC
From: Eddie Haskel <wiseguy@clever.com>
Message-ID: <7h%Nb.2084$eJ7.1586@newssvr29.news.prodigy.com>
Source record: 29399
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

Henry, dont laugh at this method..it works....read it thru before nixing it.
I have had this happen before too. simply put about 5 volts at 500 mils on
the b+ line, regulated at the 500 mils. Let it sit for a few minutes and
then go looking for the part to be running warm. The part will be
dissipating 5*.5= 2.5 watts of heat. sooner or later the bad part WILL get
warm. It will NOT lift traces unless they are VERY small.
If this approach fails, the next thing I do is go in with a new(sharp)
razorblade and start as far away from the power supply and cut B+ traces one
at a time until the short goes away. This isolates the short to a smaller
area.
Suspect Tantalum caps as they usually fail in this mode of low ohms
shorts...let us know when you find it...Eddie

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:100dsk7hvh9hi0f@corp.supernews.com...
> Sometime ago I think I recall someone posted or wrote an article on a neat
> way to isolate a shorted component on a pcb using common test eqpt but I
> can't recall the methodology. I'm trying to find a shorted component on
a
> Wavetek 188-S-1257 signal generator. The B+ line reads about 0.4 ohms and
> I'm not having much luck disconnecting componets. I don't have a
schematic
> and my eyes ain't what they used to be for tracing and I want to minimize
> the unsoldering. Does anyone recall the article or have a good way?
> tnx
> hank wd5jfr
>
>

413. Re: power transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 00:36:38 UTC
From: averyfineman@aol.com
Message-ID: <20040116193638.22081.00003462@mb-m17.aol.com>
Source record: 29400

In article <uTANb.36607$ZuL1.10837@twister01.bloor.is.net.cable.rogers.com>,
"larry" <larya@rogers.com> writes:

>Way back, when I was 7 or 8 years old, (I am 55 now), my dad got me an
>electric train set....During that Christmas we were at my Grandparents place
>and they were on 25 hz power....At home we were on 60 hz power...
>
>We had to be at home for me to try out my new train set.
>
>What has that got to do with this question?...
>
>This....
>
>I have a number of transformers and would like to experiement using then at
>a higher frequency....let say 500 hz and / or higher.....
>
>Would they still work?...I am assuming so...

Should not be a problem. Designed for 25 Hz operation, they have
a lot more iron in the core than those for 50/60 Hz. That means
they are HEAVY. [it's a mechanical mounting problem only]
>
>Would they run cooler?....

Not any more than audio amplifier power output transformers at
the same wattage.

>Could anyone foresee any negative effects?....

Other than physical mounting places having to be much more
sturdy, no problems at all.

Aerospace electronics went to 400 Hz (and higher "wild" supply
frequencies) some time ago to save WEIGHT. For the same
power handling capability, the core size could be smaller for a
given core flux desnity in comparison to 60 Hz.

You WILL get heating and inordinate core losses and loss of
efficiency of power transfer in trying to use a 400 Hz transformer
at 60 Hz.

You will NOT have any of those problems on getting a lower-
frequency transformer to work at a higher frequency.

For common transformer iron laminations, the upper end of
frequency response...where all the effects others were talking about,
would be above, perhaps, 5 KHz to 10 KHz. Those other effects

would only begin to show up at that limit frequency, getting worse at higher frequencies.

In the old vacuum tube "Hi-Fi" music amplifers, output transformers needed a BIG core cross section to reach down to 30 Hz. The upper end of response was determined primarily by the distributed capacitance of the winding with the most turns, secondarily by the iron alloy of the core. Mutual inductance effects didn't much come into play - regardless of what some instructors talked about in classes to illustrate "points" about mutual inductance. :-)

Len Anderson
retired (from regular hours) electronic engineer person

414. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 00:41:30 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <100h169653vt2e2@corp.supernews.com>
Source record: 29401
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

See my previous post about finding the culprit but I had another problem and it was the 7815 3 term reg which I replaced with NOS and the Wavetek came to life but not great. I measured the 15 volt terminal and it was 23 volts so I may not have much left. I have question on your method. For a shorted component with very low resistance, 0.2 I can't see much heat created since P=I squared R. A short of 0.2 ohms wouldn't dissapate much power and all you'll do is heat the traces, other components and perhaps blow short if you're lucky!
73
hank wd5jfr
"Eddie Haskel" <wiseguy@clever.com> wrote in message
news:7h%Nb.2084$eJ7.1586@newssvr29.news.prodigy.com...
> Henry, dont laugh at this method..it works....read it thru before nixing it.
> I have had this happen before too. simply put about 5 volts at 500 mils on
> the b+ line, regulated at the 500 mils. Let it sit for a few minutes and
> then go looking for the part to be running warm. The part will be
> dissipating 5*.5= 2.5 watts of heat. sooner or later the bad part WILL get
> warm. It will NOT lift traces unless they are VERY small.
> If this approach fails, the next thing I do is go in with a new(sharp)
> razorblade and start as far away from the power supply and cut B+ traces one
> at a time until the short goes away. This isolates the short to a smaller
> area.
> Suspect Tantalum caps as they usually fail in this mode of low ohms
> shorts...let us know when you find it...Eddie
>
> "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
> news:100dsk7hvh9hi0f@corp.supernews.com...
> > Sometime ago I think I recall someone posted or wrote an article on a neat
> > way to isolate a shorted component on a pcb using common test eqpt but I
> > can't recall the methodology. I'm trying to find a shorted component on
> a
> > Wavetek 188-S-1257 signal generator. The B+ line reads about 0.4 ohms and
> > I'm not having much luck disconnecting componets. I don't have a
> schematic
> > and my eyes ain't what they used to be for tracing and I want to minimize
> > the unsoldering. Does anyone recall the article or have a good way?
> > tnx
> > hank wd5jfr

> >
> >
>
>

415. Signal-to-noise meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 00:44:01 UTC
From: LA8AK@online.no
Message-ID: <40088451.102947324@news.online.no>
Source record: 29402

On http://home.online.no/~la8ak/m23.htm I have mentioned a
signal-to-noise meter we used for antenna measurements in UK, suppose
it goes on 100kc/s IF with Racal RA17 or similar receiver, and
measures noise modulation on the carrier.
Since we measrued on constant carrier from other PTP-circuits it was a
steady carrier or pilot to measure, it would also work with AM
broacast stations, provided the IF filter is sharp enouth to cut the
modulation

Wonder if a similar construction can be found, but susing omewhat more
modern devices?

73
Jan-Martin
http://home.online.no/~la8ak/c.htm
--
Amount of SPAM is so large that MailWasher must delete 99% of the incoming mails
Cannot check every email manually. Please use intelligent title for email.
Mails without titles or using just "hi" is deleted

416. Re: power transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 01:08:09 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <5eje001pgg3659g2eciviig4o55gpab20p@4ax.com>
Source record: 29403

On Thu, 15 Jan 2004 18:29:25 GMT Gregg <nospam@unknown.org> wrote:

>Behold, larry signalled from keyed 4-1000A filament:

>> Would they run cooler?....
>
>Depends. If the core is of good quality then they'll run cooler. Eddy
>current effects are more pronounced at higher frequencies.

Exactly right. Hysteresys (sp?) losses will go down, but eddy current losses will go up. For most applications it's not clear that there's any change in the overall efficiency.

>> Could anyone foresee any negative effects?....
>
>You may get higher than anticipated secondary voltage.

I don't know why. Where I used to work we used many standard 50/60 Hz transformers at 400 Hz with no change in output voltage.

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA
---

417. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 01:08:09 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <92ke00pc8qv5em3cbun71qpse0euhsrphq@4ax.com>
Source record: 29404
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

On Fri, 16 Jan 2004 08:53:49 +0800 budgie <me@privacy.net> wrote:

>On Thu, 15 Jan 2004 16:44:35 -0600, "Steve Nosko"
><suteuve.nosukowicuz@moutouroula.com> wrote:
>
>> Seems to me there's a way to use a moderate current and sense the
>>_magnetic_ field. Follow the field around the board along the runners.
>>However, I don't remember what was used to sense the field.
>
>HP used to make a hall effect (IIRC) probe for current tracing. One of their
>Bench Briefs technotes described the probe and the process.

It was the HP 547A Logic Current Tracer combined with the HP 546A
Logic Pulser. These worked only with TTL or CMOS circuits. The pulser
would drive current into any point you wanted and the tracer could be
used to follow the current path.

You would set the pulser to put out a continuous pulse train, and then
adjust the sensitivity of the tracer so that it would just trigger on
the current pulses sent out by the pulser. It would thus ignore other
current that was flowing in the same trace as long as that current was
either DC or consisted of pulses which were smaller than those put out
by the logic pulser. I think the logic pulser could put out an amp or
so, but they were short enough that they didn't damage anything.

They work well, but the current tracers are rather hard to come by now
and they are rather expensive when you find them.

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA
---

418. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 01:58:25 UTC
From: Eddie Haskel <wiseguy@clever.com>
Message-ID: <5F0Ob.2115$0I.63@newssvr29.news.prodigy.com>
Source record: 29405
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

The 7815 needs only 3 volts of headroom, so 23 volts is plenty. Any more
than that will be dissapated as heat. Your right that the traces will also
get warm but it's still safe. The other post that advised the use of freeze
spray was a good one too. I have used both...Eddie
"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:100h169653vt2e2@corp.supernews.com...
> See my previous post about finding the culprit but I had another problem
and
> it was the 7815 3 term reg which I replaced with NOS and the Wavetek came
to
> life but not great. I measured the 15 volt terminal and it was 23 volts
so
> I may not have much left. I have question on your method. For a shorted
> component with very low resistance, 0.2 I can't see much heat created
since
> P=I squared R. A short of 0.2 ohms wouldn't dissapate much power and all
> you'll do is heat the traces, other components and perhaps blow short if
> you're lucky!
> 73
> hank wd5jfr
> "Eddie Haskel" <wiseguy@clever.com> wrote in message
> news:7h%Nb.2084$eJ7.1586@newssvr29.news.prodigy.com...
> > Henry, dont laugh at this method..it works....read it thru before nixing
> it.
> > I have had this happen before too. simply put about 5 volts at 500 mils
on
> > the b+ line, regulated at the 500 mils. Let it sit for a few minutes and
> > then go looking for the part to be running warm. The part will be
> > dissipating 5*.5= 2.5 watts of heat. sooner or later the bad part WILL
get
> > warm. It will NOT lift traces unless they are VERY small.
> > If this approach fails, the next thing I do is go in with a new(sharp)
> > razorblade and start as far away from the power supply and cut B+ traces
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> > at a time until the short goes away. This isolates the short to a
smaller
> > area.
> > Suspect Tantalum caps as they usually fail in this mode of low ohms
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> > "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
> > news:100dsk7hvh9hi0f@corp.supernews.com...
> > > Sometime ago I think I recall someone posted or wrote an article on a

> neat
> > > way to isolate a shorted component on a pcb using common test eqpt but
I
> > > can't recall the methodology. I'm trying to find a shorted component
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> > a
> > > Wavetek 188-S-1257 signal generator. The B+ line reads about 0.4 ohms
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> > > I'm not having much luck disconnecting componets. I don't have a
> > schematic
> > > and my eyes ain't what they used to be for tracing and I want to
> minimize
> > > the unsoldering. Does anyone recall the article or have a good way?
> > > tnx
> > > hank wd5jfr
> > >
> > >
> >
> >
>
>

419. Marconi TF-2650/Conway Masteranger FET m/meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 02:08:26 UTC
From: no-one@bad-domain.com
Message-ID: <40089787.212484@news.netcon.net.au>
Source record: 29406
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

I've been given a Conway Masteranger multimeter (think it is a model 639) and would like to get hold of a copy of an operating manual or user guide including schematic. I've been told that it was also sold as a Marconi model TF-2650. A pix is available at the following link:

http://users.netcon.net.au/~lcval1/masteranger_thumb.jpg

Help appreciated -

Damien VK3RX
Email: Substitute my call for mycall@amsat.org

420. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 02:17:18 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <100h6pf9ppkgv43@corp.supernews.com>
Source record: 29407
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

There have been quite a few good suggestions, but there's a little I can add.

I've successfully found shorts between inner layers of multiple-layer PC boards due to misaligned layers. (When layers are misaligned, plated-through holes -- vias -- can contact layers they're supposed to miss, shorting them.) The method I used was to connect a high-amplitude signal generator (one that puts out a few volts into 50 ohms) of about 50 kHz between the shorted layers. Then, I used a small coil as a detector, connected to a scope. The coil was a few hundred turns on a ferrite bobbin (essentially a ferrite rod), about 1/4" diameter and 1" long. With it, I was able to trace the current from the "hot" signal generator terminal to the shorted via -- the signal drops off pretty quickly beyond the short. The via was drilled out to clear the short, and connections to the intended layers made manually.

If the frequency is too low, the AC current spreads too much on a plane-type layer. If it's too high, it won't penetrate through layers which are over the conducting one. If you're not dealing with multiple, plane-type layers, you could use a higher frequency and it should be pretty simple.

A toroid, as someone mentioned earlier, is a poor choice for a detector, unless you grind a slot (gap) in it -- half of a split toroid would work fine. I tried a floppy drive head, too, but found that it had very poor sensitivity. They're apparently intended to be driven by high current, and at quite a bit higher frequency. The resolution would be good, though, if you put an amplifier between it and the scope. I found the bobbin coil to be adequate.

I used this method quite a number of times. Knowing how to find inner-layer shorts does have disadvantages, though. The very first prototype PC boards for the Tek 11400 series 'scope mainframes arrived at about 2:00 a.m. on the day they absolutely had to be built, and all had inner layer shorts. Guess who got called in to fix them. As I recall, I managed to fix something like two out of the four or five -- just enough for that day's build. The rest had too many shorts to salvage.

The same technique can be used to find shorted components, although some of the other methods suggested might be easier depending on the circumstances and type of boards.

Roy Lewallen, W7EL

421. Re: Your pocket portable PLL non-DX AM/FM radio these days

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 03:11:43 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <bua95f$6s6$1@freenet9.carleton.ca>
Source record: 29408

"Richard" (nearlynews_email@ntlworld.com) writes:
> Went into a shop today and tried a small (5" x 3"x 3/4") PLL AM/FM portable.
> Tuned to a local AM station. Audio excellent for the size of speaker. Tuned
> up 9Khz and station still there, very much audible, with a bit of splatter.
> Tuned up18Khz from station, station still audible, but much slatter. Gosh,
> they make the AM filters wide these days don't they in your pocket
> portable!
>
> I suppose that in practical use as a non DX radio, the wide bandwith has
> little significance. Not likely that another favourite station is going to
> be within 18Khz. Audio quality over selectivity obviously. You feel that
> the radio you are listening to is a peice of junk because of the wide
> bandwidth, but I guess not, if it gives such good audio quality for such a
> small size.
>
>
>
I had a digitally tuned pocket radio from Radio Shack, and after I dropped
it in water, I had the chance to take it apart. It only used IF transformers
on AM, so it wasn't anything much in the selectivity department.

Keep in mind, though, that if the PLL isn't well designed, you will get
spurs and a signal can turn up in more than one place on the dial. In
this case, IF selectivity is not the problem, since the same station is
being converted to the IF due to spurs from the PLL. If you've got a local
station that's stronger than the more distant stations, even the reduced
level of the spurs means that the local station can wipe out the weak station.

I've had digitally tuned AM broadcast radios where a local station will
appear up and down the dial from where it belongs, with perfect fidelity
but with reduced amplitude. But at night when some of the strong signals
come booming in, they wipe out those spurs.

Michael VE2BVW

422. Labeling a Chassis

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 03:29:09 UTC
From: Harry Williams <willisw200@msn.com>
Message-ID: <9_1Ob.239$941.5568@news7.onvoy.net>
Source record: 29409

I am working on a project and need to label a chassis. I have used Microsoft Visio to create a template for the front
and rear of the chassis. I then printed those images on transparent labels. They look nice but I have two problems.
First if the ink gets damp at all it smears and second its difficult to apply the label to the chassis without air pockets
forming. I would like to hear from someone that has done this kind of work and find out whats the best way to label
a project chassis.

73's
Harry
W0PIY

423. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 05:14:36 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <woCdnaC4s_izKpXdRVn-hA@ctc.net>
Source record: 29410
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

"Eddie Haskel" <wiseguy@clever.com> wrote in message
news:5F0Ob.2115$0I.63@newssvr29.news.prodigy.com...
> The 7815 needs only 3 volts of headroom, so 23 volts is plenty. Any more
> than that will be dissapated as heat. Your right that the traces will also
> get warm but it's still safe. The other post that advised the use of
freeze
> spray was a good one too. I have used both...Eddie
> "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
> news:100h169653vt2e2@corp.supernews.com...
> > See my previous post about finding the culprit but I had another problem
> and
> > it was the 7815 3 term reg which I replaced with NOS and the Wavetek
came
> to
> > life but not great. I measured the 15 volt terminal and it was 23 volts
> so
> > I may not have much left. I have question on your method. For a
shorted

I think he was referring to a 15 volt rgeulator that has 23 volts on the
output indicating it was bad and the overvoltage caused other components to
go bad.

424. Re: Would it be worthwhile starting an on-line parts ordering house?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 06:12:55 UTC
From: The Eternal Squire <eternalsquire@comcast.net>
Message-ID: <MbadnVtfk7FcVpXdRVn-uQ@comcast.com>
Source record: 29411

It seems to me that selling parts alone is not going to give enough margin
for
a home business.

I had been giving this some thought myself, and while I won't ever have the
guts
to do this unless I ever get laid off from my software job (33%
unemployment rate in IT in the US!!!), my personal opinion is to gravitate
to
modules or subassemblies that are needed by hams whose designs are (1)
unprotected,
(2) public domain i.e. results of government research, (3) prior art, or (4)
licenseable
to you for a reasonable percentage.

The more you can add value, the better your return will be.

Good luck!!!

The Eternal Squire

Dick <dick@langwang.demon.co.uk> wrote in message
news:4JlW6KATqZBAFwk4@langwang.demon.co.uk...
> In message <1p1Nb.10235$ID2.8111@newssvr25.news.prodigy.com>, Greysky
> <greyskynospam@sbcglobal.net> writes
> >I have been pondering this idea on and off, but can't tell if it would be
> >worth the effort to do something like this. Can you make a decent living
> >selling small quantities of parts - passives, crystals, oscillators,
solid
> >state, IC's , even exotic things like back diodes and mmic's - via mail
> >order. Or, do the large parts houses like Digi Key have the field sewn
up?
> Don't know if it's of any help but I buy items on-line, by phone &
> locally and what I look for in all suppliers are:
>
> 1. Useful stock
> 2. Good price to me at SIT (soldering iron tip)
> 3. Someone at the other end who knows what they are talking about, the
> help full suggestion of a suitable alternative that is in stock, or even
> an alternative supplier for the really tricky one would always earns a
> return visit in my book. If I get good service I don't keep it to
> myself.
>
> Good Luck (and don't forget your potential overseas customers !!).
> --
> Dick

> GM0MNL

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.558 / Virus Database: 350 - Release Date: 1/2/04

425. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 08:28:01 UTC
From: budgie <me@privacy.net>
Message-ID: <ccsh005s4llrae4cij0kemm0c8dbeutqj2@4ax.com>
Source record: 29412
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

On Fri, 16 Jan 2004 19:08:09 -0600, Jim Adney <jadney@vwtype3.org> wrote:

>On Fri, 16 Jan 2004 08:53:49 +0800 budgie <me@privacy.net> wrote:
>
>>On Thu, 15 Jan 2004 16:44:35 -0600, "Steve Nosko"
>><suteuve.nosukowicuz@moutouroula.com> wrote:
>>
>>> Seems to me there's a way to use a moderate current and sense the
>>>_magnetic_ field. Follow the field around the board along the runners.
>>>However, I don't remember what was used to sense the field.
>>
>>HP used to make a hall effect (IIRC) probe for current tracing. One of their
>>Bench Briefs technotes described the probe and the process.
>
>It was the HP 547A Logic Current Tracer combined with the HP 546A
>Logic Pulser. These worked only with TTL or CMOS circuits. The pulser
>would drive current into any point you wanted and the tracer could be
>used to follow the current path.

That may have been the sensor, but the article I saw related to tracing shorts.
To that extent, it was environment-independent.

(snip)

>They work well, but the current tracers are rather hard to come by now
>and they are rather expensive when you find them.

Most HP stuff I've seen works well. Being HP, I'm sure they were expensive way
back then.

426. FX828/MX828

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 09:50:42 UTC
From: Leif Holmgren <nobody@nowhere.com>
Message-ID: <40090572.8040801@nowhere.com>
Source record: 29413

Hello!

Can anyone suggest a supplier of the CML circuits FX828 or MX828.
Preferably within the EU. I tried the Swedish distributor but they would
not sell me less than 10, which would be too expensive since I need
only 2 or 3.

If anyone can suggest another CTCSS/DTMF/DCS decoder circuit that could
be another option.

73 de SM4RPQ/Leif

427. Ten Tec 1340 problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 12:49:00 UTC
From: gil <gilpi@NOSPAMmindspring.com>
Message-ID: <0baOb.11952$i4.5726@newsread1.news.atl.earthlink.net>
Source record: 29414

Just got a TT 1340 40M qrp rig and cant seem to get it to tune, swr is way up and there seems to be lots of oscillation going on in the rig. Power out is about 5 watts and the reflected power is just as high.
Both long wire antennas tune fine with all my other rigs, except the 1340.
Any comments?
Thanks......Gil
--
Remove NOSPAM to reply

428. FS: mobile amp cases/heatsinks and variable transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 14:14:23 UTC
From: Roy Brock <roybro@sccoast.net>
Message-ID: <bubgc2$4kft$1@news3.infoave.net>
Source record: 29415

Hello all,

Just once more trying to find homes for the following:

I have a bunch of heatsinks I'd like to sell. Most are perfect for mobile power amps.
Some have enclosures where the face of the heatsink forms one side (the top) of the enclosure, and wings for mounting on the opposite side (again, perfect for mobile PAs). Enclosures/heatsinks just described are approximately 5.5" x 7.5". I have ten of them.
I have other heatsinks perfect for PAs that are 6.75" x 9.25"; I have four of these.
I have a couple that are a little larger than above, approx. 7.5" x 10.5". One has a single transistor PA on it already; stripline matching, so has to be 2M or upwards.
I also have some LARGE stuff for high current diodes/SCRs (>200 Amp) - mega surface area.
There are also various lengths of raised mount TO-3 style sink.
Lastly (heatsinks), I have a box of smaller (one TO-3) type sinks I will sell as a lot.

I also would like to sell five 2.25A 120-volt variable transformers, superior electric powerstat type 10C.

Make offer for anything you're interested in. If you want pics, just ask and I'll email 'em.

Thanks...Roy Brock

429. Re: power transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 16:01:35 UTC
From: Ian Jackson <REMOVEPLEASE@g3ohx.demon.co.uk>
Message-ID: <Bu0Aa1AfxVCAFwZG@g3ohx.demon.co.uk>
Source record: 29416

In message <nbUNb.95$Nu2.17@newsfep1-gui.server.ntli.net>, Frank Dinger
<gm0cszx.xkn6wh@ntlworld.com> writes
>> I have a number of transformers and would like to experiement using then
>at
>> a higher frequency....let say 500 hz and / or higher.....
>>
>> Would they still work?...I am assuming so...
>>
>> Would they run cooler?....
>>
>> Could anyone foresee any negative effects?....
>==========
>Running transformers on a higher freq is fine provided the core can manage
>the higher freq.
>
>During the valve era ,aeronautical radio equipment ran on 400 Hz resulting
>in smaller and hence lower weight transformers.
>
>However running power supply transformers at an AC frequency lower than the
>one they are designed for might cause the laminated core to overheat.
>
>In practice : 50 Hz transformers meant for use in Europe and elsewhere can
>be readily used in the US and Canada.
>However transformers designed for 60 Hz having 'marginal cores' could
>overheat when used on a 50 Hz supply.
>So equipment with 'wallwarts' purchased in the US ,(apart from being
>suitable for 117 V only) I never use on a 50 Hz supply system.
>
>Nowadays with much equipment having a switch mode power supply , the
>frequency / voltage problem no longer exists.
>
>Frank GM0CSZ / KN6WH
>
>

Yes, you can sometimes have serious trouble on 50Hz when the equipment
was designed in a 60Hz area. The problem is simply not enough inductance
in the transformer for the lower frequency (even though the difference
is small).

I recall two examples from my work (in the cable TV industry):
1. Hundreds of 50 to 600MHz outdoor repeater amplifiers, line powered
(via the coax) at 60VAC. Took far too much current, and all the
transformers had to be replaced.
2. Piece of rack equipment. 115V input, multiple output windings. We

simply provided a 240-115V step down when we installed it. No problems. One day, new unit, fuse pops after a few seconds. Mains transformer same part number, but different supplier, also slightly fewer laminations. Current went up from 0.2A to 3A. Not an easy fix.

There can also be a problem with switch mode power supplies, but the problem is not the frequency. It is the higher inrush current when you switch on. Again, cable TV equipment, had 0.25A mains fuse. Regularly popped fuse on switch-on. Took a slow-blow 1A to stop it, although the steady-state current was only 80mA.

I'm not pro-American, but I often think that the world might have been a simpler place if we had all used 115VAC, 60Hz, 525-line TV etc....

Ian.

--

430. tuba data and manuals @

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 16:26:42 UTC
From: Adshar64 <adshar@ihug.com.au>
Message-ID: <bubnp8elp1@lust.ihug.co.nz>
Source record: 29417

http://groups.yahoo.com/group/Tube_Amps/

431. Re: Labeling a Chassis

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 16:41:21 UTC
From: Allodoxaphobia <bit-bucket@config.com>
Message-ID: <slrnc0ipdh.1p5b.bit-bucket@localhost.config.com>
Source record: 29418

On Sat, 17 Jan 2004 03:29:09 GMT, Harry Williams hath writ:
> I am working on a project and need to label a chassis. I have used Microsoft
> Visio to create a template for the front
> and rear of the chassis. I then printed those images on transparent labels.
> They look nice but I have two problems.
> First if the ink gets damp at all it smears and second its difficult to
> apply the label to the chassis without air pockets forming.

I've had success with air pockets by using a thin sewing needle
to prick the center of the air pocket and then press the material
against the background from the outer edges of the air pocket in --
towards the prick.

The smearing problem _might_ be solved by apply a second layer of
film over the first. Probably more pin pricking there, too....

HTH
Jonesy
--
| Marvin L Jones | jonz | W3DHJ | OS/2
| Gunnison, Colorado | @ | Jonesy | linux __
| 7,703' -- 2,345m | config.com | DM68mn SK

432. FS: Motorola Dummyload & Testset

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 17:22:57 UTC
From: Walter Treftz <pendragon@netsignia.net>
Message-ID: <40096F56.B7A7BB7F@netsignia.net>
Source record: 29419

No extra charge for packing & taking to USPO/UPS.
If interested, make reasonable offer + shipping.
Located in northern Florida. Items from estate. Load
is untested and the testset we have no idea how to use
it or what it does.

73 Walt (N4GL)
xxxpendragon@netsignia.net (take out the x"s)
(352) 637-1755

(6) RF Dummy Load ("RF Load Resistor")
Model: T1013A
Max power: 300w, 0-1000 mhz, 50-ohm. Very good
condx.

(1) Test Set for HT's (?)
Model: S1056A/S1057A/S1058A/S1059A (can't
determine which) Unmodified, untested,
electronically seems in excellent condition.
Wooden case dirty and a few dings. Missing 1 (of
2) blank plates across case above the meter.

433. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 18:47:17 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <100j0pv7rhnte6d@corp.supernews.com>
Source record: 29420
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

```
23 voolts on output!
later
"Ralph Mowery" <rmowery@ctc.net> wrote in message
news:woCdnaC4s_izKpXdRVn-hA@ctc.net...
>
> "Eddie Haskel" <wiseguy@clever.com> wrote in message
> news:5F0Ob.2115$0I.63@newssvr29.news.prodigy.com...
> > The 7815 needs only 3 volts of headroom, so 23 volts is plenty. Any more
> > than that will be dissapated as heat. Your right that the traces will
also
> > get warm but it's still safe. The other post that advised the use of
> freeze
> > spray was a good one too. I have used both...Eddie
> > "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
> > news:100h169653vt2e2@corp.supernews.com...
> > > See my previous post about finding the culprit but I had another
problem
> > and
> > > it was the 7815 3 term reg which I replaced with NOS and the Wavetek
> came
> > to
> > > life but not great. I measured the 15 volt terminal and it was 23
volts
> > so
> > > I may not have much left. I have question on your method. For a
> shorted
>
> I think he was referring to a 15 volt rgeulator that has 23 volts on the
> output indicating it was bad and the overvoltage caused other components
to
> go bad.
>
>
```

434. Re: Labeling a Chassis

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 19:13:09 UTC
From: k7itm@aol.com
Message-ID: <3200347.0401171113.628f5ba@posting.google.com>
Source record: 29421

I've printed onto overhead transparency material (large enough to cover the whole panel), with the printing reversed, so you're looking at it through the plastic film. That protects the printing. You need to find a suitable adhesive (there are some sprays that work OK), and getting it down without bubbles I guess is just an art. You can put some thin rods under it to space it up, and start at an edge and remove the rods one by one as you work across the panel. It's a technique like people who apply veneer or laminate use.

A different ink-different brand of printer-(or even better, laser printed) might solve your smearing problem if you want to keep using adhesive labels.

It's distinctly more hassle, but you can make a very nice looking panel by getting it anodized and photoengraving the lettering into it. The difficulty these days is locating the photoresist. I've made several thousand panels that way, but have been out of that business for over twenty years.

Cheers,
Tom

"Harry Williams" <willisw200@msn.com> wrote in message news:<9_1Ob.239$941.5568@news7.onvoy.net>...
> I am working on a project and need to label a chassis. I have used Microsoft
> Visio to create a template for the front
> and rear of the chassis. I then printed those images on transparent labels.
> They look nice but I have two problems.
> First if the ink gets damp at all it smears and second its difficult to
> apply the label to the chassis without air pockets
> forming. I would like to hear from someone that has done this kind of work
> and find out whats the best way to label
> a project chassis.
>
> 73's
> Harry
> W0PIY

435. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 19:35:12 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <100j3jol5a0f71@corp.supernews.com>
Source record: 29422
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

I found a good 7815 and installed it and except for the frequency dial being
off the thing seems to work. If I find a manual I should be able to cal it
or find out if the cal is off because of a failed componet because of being
overstressed to 23 volts when it was designed to operate at 15 volts. The
output remains flat from 0 to 4 MHz but the when the dial reads 4 MHz the
counter shows 3.5 MHz. At 1MHz on the dial the counter reads 0.570MHz and
similar readings on at audio frequencies.
hank wd5jfr
"Ralph Mowery" <rmowery@ctc.net> wrote in message
news:woCdnaC4s_izKpXdRVn-hA@ctc.net...
>
> "Eddie Haskel" <wiseguy@clever.com> wrote in message
> news:5F0Ob.2115$0I.63@newssvr29.news.prodigy.com...
> > The 7815 needs only 3 volts of headroom, so 23 volts is plenty. Any more
> > than that will be dissapated as heat. Your right that the traces will
also
> > get warm but it's still safe. The other post that advised the use of
> freeze
> > spray was a good one too. I have used both...Eddie
> > "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
> > news:100h169653vt2e2@corp.supernews.com...
> > > See my previous post about finding the culprit but I had another
problem
> > and
> > > it was the 7815 3 term reg which I replaced with NOS and the Wavetek
> came
> > to
> > > life but not great. I measured the 15 volt terminal and it was 23
volts
> > so
> > > I may not have much left. I have question on your method. For a
> shorted
>
> I think he was referring to a 15 volt rgeulator that has 23 volts on the
> output indicating it was bad and the overvoltage caused other components
to
> go bad.
>
>

436. simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 21:06:14 UTC
From: Pete Beals <PBeal@noaddress.com>
Message-ID: <100j8u6cdktsb9f@corp.supernews.com>
Source record: 29423

Has anyone implemented a simple sync detector that uses as few parts as possible?

Thanks

Pete

437. Re: Good Receiver for a 10-year Old

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-17 22:01:00 UTC
From: mcalhoun@ksu.edu
Message-ID: <bucbas$hr@unix1.cc.ksu.edu>
Source record: 29424

>> IMPROVED NEOPHYTE RECEIVER
><snipped>

>I have a question, has anyone built the above and had success with it? A
>friend of mine built a kit once from Ramsey - it used a NE6XX chip and the
>receiver was the biggest piece of garbage I had ever seen. He built it
>....[snip]....

My son built the Ramsey "shortwave radio" kit about 15 years ago; he had absolutely NO trouble and it worked like a charm. I designed a little outboard VFO (plans available upon request) which he built and which let him copy CW.

His has been a coded-Tech since shortly after that experience.
(Not particularly active, but licensed, nevertheless!)

--Myron.
--
Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge
PhD EE (retired). "Barbershop" tenor. CDL(PTXS). W0PBV. (785) 539-4448
NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle, Pistol)

438. Re: Good Receiver for a 10-year Old

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 00:20:49 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <100jkaorlrvg28e@corp.supernews.com>
Source record: 29425

Thank you all for you suggestions and advise, I now know what I want to do.

"Tim Wescott" <tim@wescottnospamdesign.com> wrote in message
news:100ccc8lbuot37b@corp.supernews.com...
> Does anyone out there have recommendations for a good, simple receiver kit
> for a 10-year old budding ham? My son just fell in love with the Neophyte
> receiver from ARRL's "QRP Classics", but chasing down parts is going to be
a
> bit of a bother (the coils _are_ still available from Mouser, and FAR
> circuits has the board, but it looks like I'm going to have to donate a
> couple of my precious tuning caps). If it were me I'd just start building
> and accept the necessary futzing around; with him I'd prefer something
where
> all the parts fall out of the box and go together quick before he loses
> patience.
>
> Ideally there's someone out there that makes an improved Neophyte kit. If
I
> have to I'll buy one of the new kits that are mostly pre-made surface
mount
> with a bit of through-hole soldering of the tuning pots and whatnot, but
I'm
> not sure he'll get the feeling of accomplishment that we're looking for.
>
> Any suggestions?
>
> Thanks.
>
> ---
> Tim Wescott
> Wescott Design Services
> http://www.wescottdesign.com
>
>
>

439. Re: Ten Tec 1340 problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 00:27:34 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <100jknotbi0l9d8@corp.supernews.com>
Source record: 29426

I don't know the TT 1340, so I don't know if it has an SWR meter built-in:

If it has an internal SWR meter then check the connections between that meter and the RF jack on the rig.

SWR is a quality of the stuff that comes _after_ the SWR meter, and the frequency of the energy going into the SWR meter. So if you're putting 7MHz into the meter you should get the same results no matter where it comes from. Ergo, the "lots of oscillation" that you're seeing in the rig includes frequencies at which your antenna isn't tuned so well.

Try running into a dummy load, and see if things calm down. If you have a frequency counter or an oscilloscope measure the output frequency. Once you get it figured out with that, go back to running into an antenna.

"gil" <gilpi@NOSPAMmindspring.com> wrote in message
news:0baOb.11952$i4.5726@newsread1.news.atl.earthlink.net...
> Just got a TT 1340 40M qrp rig and cant seem to get it to tune, swr is way
> up and there seems to be lots of oscillation going on in the rig. Power
out
> is about 5 watts and the reflected power is just as high.
> Both long wire antennas tune fine with all my other rigs, except the 1340.
> Any comments?
> Thanks......Gil
> --
> Remove NOSPAM to reply
>
>

440. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 01:41:10 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <BbCdnUpwiOAtS5TdRVn-tA@ctc.net>
Source record: 29427
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:100j0pv7rhnte6d@corp.supernews.com...
> 23 voolts on output!
> later
>

The way I read it , the 15 volt regulator had gone bad and was passing a much higher voltage as it was not regulating . That was giving 23 volts on the output instead of the 15 volts it was suspose to.

441. Automotive GPS Radio Interfacing for APRS use?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 02:00:01 UTC
From: "Leland C. Scott" <no-spam@junk-mail.net>
Message-ID: <v-CdnXKjcs04dZTd4p2dnA@comcast.com>
Source record: 29428

I'm a new owner of a 2004 Jeep Grand Cherokee with the optional RB1 in-dash GPS nav radio combination. This particular option has been available for over a year or more for older Chrysler model Jeeps and selected cars.

I looked up the specifications for the GPS-radio unit, http://www.wjjeeps.com/nav.htm#SPEC , and found that the GPS section uses a communication specification called "J1850 bus specification for NAV information" for the data format. Has anybody tried to interface to a unit like the RB1 for use as a mobile GPRS station?

I have found some information on the J1850 bus specification and some hardware at http://www.intrepidcs.com/vspy/ . Has anybody used this for GPRS application? There is some free software available if you use a Palm based PC at http://www.intrepidcs.com/vspy/vspyce.htm for using the network interface hardware.

--
Leland C. Scott
KC8LDO

ARRL Member
NCI Member

Charter member of the
Lawrence Technological University
Wireless Society W8LTU

442. Re: Ten Tec 1340 problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 02:15:28 UTC
From: Doug Smith W9WI <w9wi@invalid.invalid>
Message-ID: <4009EC3E.4090907@invalid.invalid>
Source record: 29429

gil wrote:
> Just got a TT 1340 40M qrp rig and cant seem to get it to tune, swr is way
> up and there seems to be lots of oscillation going on in the rig. Power out
> is about 5 watts and the reflected power is just as high.
> Both long wire antennas tune fine with all my other rigs, except the 1340.

Problems with the rig shouldn't cause high SWR, unless...

the rig is radiating signals on frequencies other than 40 meters. Which
is consistent with your "...lots of oscillation going on..." comment.

I built a 1320 a few years back. (works like a champ!) Best guess is
that there's a problem with one of the coils in the low-pass filter
coming out of the transmitter power amp. (if I can find the manual for
my 1320 I'll post in more detail tomorrow!) I'd double-check that the
coils you wound there (*NOT* the single coil that sets the VFO range)
were wound properly.

Otherwise I'd say there's some other place where you installed the wrong
part. Double-check resistor and capacitor values against the schematic
and instructions.
--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com

443. Re: Noise in Ford F-150

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 02:31:46 UTC
From: Scott <acepilot@bloomer.net>
Message-ID: <mbmOb.2567$tU6.3917@reggie.win.bright.net>
Source record: 29430

Update!

After reading the Ford Service Bulletin, I checked to see if it could be the fuel pump. They said to have radio on and then turn key to on position. The fuel pump runs for about 1 second and then stops. If the noise appears for 1 second and disappears, the pump is most likely the source of noise. I did not get any noise until the engine was started. Therefore, it would appear it is something else such as injectors, alternator, etc.

Dang! So much for any easy discovery and possible fix. Still searching...

Scott
N0EDV

"Scott" <acepilot@bloomer.net> wrote in message
news:nXHMb.2440$tU6.3548@reggie.win.bright.net...
> Anybody have any ideas to lower noise in my FT-857 mounted in my F-150
> pickup? S7-S9 noise (engine running, with NB ON) on 17M (Only band I've
> tried on HF yet). Antenna is an Outbacker mounted on a mount I welded up
> for my receiver hitch and puts the base of the antenna at about roof
level.
> Quiet as a mouse when truck is shut off. Go figure...hard to be "mobile"
> with the engine off ;)
>
> --
> Scott N0EDV
> Gotta Fly or Gonna Die
> http://corbenflyer.tripod.com
> Building RV-4
>
>
>

444. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 06:15:45 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <088k00push8is98afbj6m8slvg1r8jp9hu@4ax.com>
Source record: 29431
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

On Sat, 17 Jan 2004 16:28:01 +0800 budgie <me@privacy.net> wrote:

>On Fri, 16 Jan 2004 19:08:09 -0600, Jim Adney <jadney@vwtype3.org> wrote:
>
>>On Fri, 16 Jan 2004 08:53:49 +0800 budgie <me@privacy.net> wrote:
>>
>>>On Thu, 15 Jan 2004 16:44:35 -0600, "Steve Nosko"
>>><suteuve.nosukowicuz@moutouroula.com> wrote:
>>>
>>>> Seems to me there's a way to use a moderate current and sense the
>>>>_magnetic_ field. Follow the field around the board along the runners.
>>>>However, I don't remember what was used to sense the field.
>>>
>>>HP used to make a hall effect (IIRC) probe for current tracing. One of their
>>>Bench Briefs technotes described the probe and the process.
>>
>>It was the HP 547A Logic Current Tracer combined with the HP 546A
>>Logic Pulser. These worked only with TTL or CMOS circuits. The pulser
>>would drive current into any point you wanted and the tracer could be
>>used to follow the current path.
>
>That may have been the sensor, but the article I saw related to tracing shorts.
>To that extent, it was environment-independent.

I'm sure you're right that it would work anywhere that you could use a
+5 to +15V pulse.

>>They work well, but the current tracers are rather hard to come by now
>>and they are rather expensive when you find them.
>
>Most HP stuff I've seen works well. Being HP, I'm sure they were expensive way
>back then.

The Logic probes and pulsers in this series are fairly easy to find
today, but I had to look a long time before I found one of the tracers
at a reasonable price. Yes, they cost more when they were new, but the
tracers were only about 25% more than the probes. Used, they usually
cost at least twice as much as a probe.

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA
---

445. Re: Noise in Ford F-150

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 11:58:15 UTC
From: wb4una@aol.com
Message-ID: <20040118065815.22874.00000223@mb-m04.aol.com>
Source record: 29432

the fuel pump will run for a few seconds when you turn the key on and then stop because it builds up pressure in the line. when you turn the engine over the pump will start up again to keep the pressure up for all the injectors.it will never stop till you shut the car off . it has a return presure valve in the line to return fuel to the tank...bet it is the pump giving you the noise..

randy

ARS: WB4UNA
Randy Chavis
247 Goff Court
West Columbia
S.C. 29172

446. Keep your fingers off my collectors!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 13:48:35 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <9uGdneoJy7KHE5fdRVn-tA@comcast.com>
Source record: 29433

actually, it's keep MY fingers off the cases of some TO-3 transistors -- I haven't been able to find the plastic "hats" which go on top of these transistors to prevent inadvertent contact. I've looked at Digikey, Allied, Newark and Jameco without success. Anyone point me in the correct direction?.

447. Re: Labeling a Chassis

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 13:50:21 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <g7SdnR00d6UbE5fdRVn-jw@comcast.com>
Source record: 29434

Here are some sources for Decal Transfer Paper -- the sources were listed in
the most recent edition of "Hints and Kinks"
http://www.walthers.com/exec/productinfo/768-5000
http://www.walthers.com/exec/productinfo/768-5020
http://www.beldecal.com/inkjet_decals.cfm
http://www.beldecal.com/laser_paper.html

"Harry Williams" <willisw200@msn.com> wrote in message
news:9_1Ob.239$941.5568@news7.onvoy.net...
> I am working on a project and need to label a chassis. I have used
Microsoft
> Visio to create a template for the front
> and rear of the chassis. I then printed those images on transparent
labels.
> They look nice but I have two problems.
> First if the ink gets damp at all it smears and second its difficult to
> apply the label to the chassis without air pockets
> forming. I would like to hear from someone that has done this kind of work
> and find out whats the best way to label
> a project chassis.
>
> 73's
> Harry
> W0PIY
>
>

448. Re: Labeling a Chassis

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 14:49:39 UTC
From: Roger Conroy <rogerconroy@nospam.hotmail.com>
Message-ID: <bue6ec$iu5$1@ctb-nnrp2.saix.net>
Source record: 29435

"Harry Williams" <willisw200@msn.com> wrote in message
news:9_1Ob.239$941.5568@news7.onvoy.net...
> I am working on a project and need to label a chassis. I have used
Microsoft
> Visio to create a template for the front
> and rear of the chassis. I then printed those images on transparent
labels.
> They look nice but I have two problems.
> First if the ink gets damp at all it smears and second its difficult to
> apply the label to the chassis without air pockets
> forming. I would like to hear from someone that has done this kind of work
> and find out whats the best way to label
> a project chassis.
>
> 73's
> Harry
> W0PIY
>
>
Take a look at Letraset dry transfer lettering. www.letraset.com A really
good specialist stationery shop should have it - or try asking at
signwriting firms.

73
Roger ZR3RC

449. Re: Labeling a Chassis

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 15:29:26 UTC
From: teveg666@ultranet.com
Message-ID: <400aa699$0$6084$61fed72c@news.rcn.com>
Source record: 29436

In article <bue6ec$iu5$1@ctb-nnrp2.saix.net>, "Roger Conroy"
<rogerconroy@nospam.hotmail.com> wrote:
>
>"Harry Williams" <willisw200@msn.com> wrote in message
>news:9_1Ob.239$941.5568@news7.onvoy.net...
>> I am working on a project and need to label a chassis. I have used
>Microsoft
>> Visio to create a template for the front
>> and rear of the chassis. I then printed those images on transparent
>labels.
>> They look nice but I have two problems.
>> First if the ink gets damp at all it smears and second its difficult to
>> apply the label to the chassis without air pockets
>> forming. I would like to hear from someone that has done this kind of work
>> and find out whats the best way to label
>> a project chassis.
>>
>> 73's
>> Harry
>> W0PIY
>>
>>
> Take a look at Letraset dry transfer lettering. www.letraset.com A really
>good specialist stationery shop should have it - or try asking at
>signwriting firms.
>
>73
>Roger ZR3RC
>
>

I used the decal materials available from Micro-Mark (micromark.com)
with good results. When using these I found is was important to
read the directions, *follow* the directions, and be patient. It took
two tries, but when I was finished I had an extremely professional-
looking panel.

BTW, I followed up with 3-4 thin coats of clear, flat Krylon spraypaint.

HTH,

Steve

450. Re: Keep your fingers off my collectors!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 16:25:42 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <400AB37C.8D7FD51C@earthlink.net>
Source record: 29437

John Walton wrote:
>
> actually, it's keep MY fingers off the cases of some TO-3 transistors -- I
> haven't been able to find the plastic "hats" which go on top of these
> transistors to prevent inadvertent contact. I've looked at Digikey, Allied,
> Newark and Jameco without success. Anyone point me in the correct
> direction?.

Look at the Keystone 4632 or 4634 http://www.keyelco.com/ page 95,
unless they have updated their on line catalog recently.

--
We now return you to our normally scheduled programming.

Take a look at this little cutie! ;-)
http://home.earthlink.net/~mike.terrell/photos.html

Michael A. Terrell
Central Florida

451. Smith Chart Plotter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 16:37:59 UTC
From: C Edgar <ehunt@dslextreme.com>
Message-ID: <100ldiqjunq8b7b@corp.supernews.com>
Source record: 29438
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

I'm trying to get some info on a Smith Chart Plotter made by Dielectric Products Engineering. It looks like an RF bridge with an input, load and 4 bnc outputs for +/-X and +/-Y-axis. Would appreciate any info.

452. Re: Labeling a Chassis

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 17:46:50 UTC
From: averyfineman@aol.com
Message-ID: <20040118124650.22081.00003522@mb-m17.aol.com>
Source record: 29439

In article <9_1Ob.239$941.5568@news7.onvoy.net>, "Harry Williams"
<willisw200@msn.com> writes:

>I am working on a project and need to label a chassis. I have used Microsoft
>Visio to create a template for the front
>and rear of the chassis. I then printed those images on transparent labels.
>They look nice but I have two problems.
>First if the ink gets damp at all it smears and second its difficult to
>apply the label to the chassis without air pockets
>forming. I would like to hear from someone that has done this kind of work
>and find out whats the best way to label
>a project chassis.

I'm not sure what your "transparent labels" are but if they are anything
like decals, I can suggest a way to keept the ink from smearing.

Use a DULL spray fixative available in art stores, possibly the
Michael's chain. Do a "dust coat" (very light spray) on the chassis
and the labels before putting them on. Once they are on the
chassis, overspray again. You might want to finish with a gloss
transparent lacquer.

Too heavy an initial spraying will result in the spray solvent reacting
with the labels and ink. That's why I suggest Fixative...designed
not to react with common art media...if used sparingly. Blair
used to make such Fixative under the trade name "SprayFix."

I've done that for years with art work and with printed plastic cards
that go in the wallet. On chassis, I've done that on aluminum
surfaces that were Alodined or Iridited or chemical-film treated,
then printed directly on the dull lacquer surface with a K&E "Leroy"
lettering pen using some stiff celluloid to hold the lettering guide
and stylus over holes. Ordinary "India Ink" in the K&E pen. In that
case the chassis surface can be sprayed to hold the lettering intact.
That also works with decals of the old kind which are really a
lacquer film base with printing on the lacquer film.

Len Anderson
retired (from regular hours) electronic engineer person

453. Re: Labeling a Chassis

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 17:56:04 UTC
From: tlfort <beerbarrel@cox.net>
Message-ID: <04il00hluc0l44drknnv523g8okjbmoa0v@4ax.com>
Source record: 29440

Anyone try laser etching?

We have the capability at work but I have not tried it. We use it mostly to mark tools.

Tracy

454. Re: Calculate when an RF amplifier will block (desense)?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 18:22:48 UTC
From: fmmck@aol.com
Message-ID: <20040118132248.20507.00000105@mb-m21.aol.com>
Source record: 29441

<< s there a way to calculate when an amplifier will block by knowing its IP3? If not, is there any way to calculate the blocking capabilities of an RF amp, such as an LNA? >>

Mike-

I understand the IP3 (third order intercept point?) is related to intermodulation. This concerns when a signal just starts to interact with another, generating additional signal(s). IP3 certainly relates, but I doubt it is sufficient to calculate the point where blockage occurs. Depending on linearity, intermodulation can occur well below a level where the amplifier is blocked.

Blocking is the extreme case. An amplifier is blocked and stops amplifying when it is saturated. One might analyze this condition by considering the maximum peak-to-peak output being equal to the supply voltage. Saturation occurs when an input signal's peak-to-peak voltage exceeds the supply voltage divided by voltage gain. Any higher input will produce the same peak output. In the process, gain for a weaker signal decreases as the stronger signal approaches saturation.

In the case of an LNA, subsequent stages can be blocked even though the LNA is operating in its linear range.

Does this help?

73, Fred, K4DII

455. Re: Keep your fingers off my collectors!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 18:32:19 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <OoudnfqkvroGTZfdRVn-iQ@comcast.com>
Source record: 29442

Looks like Digikey does have them, but you have to order 100!

Jack

"Michael A. Terrell" <mike.terrell@earthlink.net> wrote in message
news:400AB37C.8D7FD51C@earthlink.net...
> John Walton wrote:
> >
> > actually, it's keep MY fingers off the cases of some TO-3 transistors --
I
> > haven't been able to find the plastic "hats" which go on top of these
> > transistors to prevent inadvertent contact. I've looked at Digikey,
Allied,
> > Newark and Jameco without success. Anyone point me in the correct
> > direction?.
>
> Look at the Keystone 4632 or 4634 http://www.keyelco.com/ page 95,
> unless they have updated their on line catalog recently.
>
> --
> We now return you to our normally scheduled programming.
>
> Take a look at this little cutie! ;-)
> http://home.earthlink.net/~mike.terrell/photos.html
>
> Michael A. Terrell
> Central Florida

456. Re: Keep your fingers off my collectors!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 19:18:08 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <100lmv6cir1700@corp.supernews.com>
Source record: 29443

Active Electronics (www.future-active.com) has a good line with some stuff that Digi-Key doesn't carry. Same goes for Mouser Electronics (www.mouser.com).

How about whomping up your own, with spacers from the mounting screws going up to some sort of plastic (1/8" acrylic comes to mind)? This is a _homebrew_ list, after all.

"Michael A. Terrell" <mike.terrell@earthlink.net> wrote in message news:400AB37C.8D7FD51C@earthlink.net...
> John Walton wrote:
> >
> > actually, it's keep MY fingers off the cases of some TO-3 transistors -- I
> > haven't been able to find the plastic "hats" which go on top of these
> > transistors to prevent inadvertent contact. I've looked at Digikey, Allied,
> > Newark and Jameco without success. Anyone point me in the correct
> > direction?.
>
> Look at the Keystone 4632 or 4634 http://www.keyelco.com/ page 95,
> unless they have updated their on line catalog recently.
>
> --
> We now return you to our normally scheduled programming.
>
> Take a look at this little cutie! ;-)
> http://home.earthlink.net/~mike.terrell/photos.html
>
> Michael A. Terrell
> Central Florida

457. Re: simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 19:23:25 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <100ln91cojfa40d@corp.supernews.com>
Source record: 29444

I think that "as few parts as possible" and "works good" are probably
somewhat mutually exclusive. Have you done the usual google and altavista
searches on "synchronous detector"?

"Pete Beals" <PBeal@noaddress.com> wrote in message
news:100j8u6cdktsb9f@corp.supernews.com...
> Has anyone implemented a simple sync detector that uses as few parts as
> possible?
>
> Thanks
>
> Pete

458. Re: Keep your fingers off my collectors!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 20:50:16 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <e7OdnT7_-5ltbZfd4p2dnA@comcast.com>
Source record: 29445

Last Christmas my kids gave me a "Grizzly" mini-mill -- you're right, I can slap something together with acrylic or lexan.
"Tim Wescott" <tim@wescottnospamdesign.com> wrote in message news:100lmv6cir1700@corp.supernews.com...
> Active Electronics (www.future-active.com) has a good line with some stuff
> that Digi-Key doesn't carry. Same goes for Mouser Electronics
> (www.mouser.com).
>
> How about whomping up your own, with spacers from the mounting screws going
> up to some sort of plastic (1/8" acrylic comes to mind)? This is a
> _homebrew_ list, after all.
>
> "Michael A. Terrell" <mike.terrell@earthlink.net> wrote in message
> news:400AB37C.8D7FD51C@earthlink.net...
> > John Walton wrote:
> > >
> > > actually, it's keep MY fingers off the cases of some TO-3 transistors --
> I
> > > haven't been able to find the plastic "hats" which go on top of these
> > > transistors to prevent inadvertent contact. I've looked at Digikey,
> Allied,
> > > Newark and Jameco without success. Anyone point me in the correct
> > > direction?.
> >
> > Look at the Keystone 4632 or 4634 http://www.keyelco.com/ page 95,
> > unless they have updated their on line catalog recently.
> >
> > --
> > We now return you to our normally scheduled programming.
> >
> > Take a look at this little cutie! ;-)
> > http://home.earthlink.net/~mike.terrell/photos.html
> >
> > Michael A. Terrell
> > Central Florida
>
>

459. Re: Keep your fingers off my collectors!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 20:56:24 UTC
From: averyfineman@aol.com
Message-ID: <20040118155624.07155.00000105@mb-m06.aol.com>
Source record: 29446

In article <100lmv6cir1700@corp.supernews.com>, "Tim Wescott"
<tim@wescottnospamdesign.com> writes:

>Active Electronics (www.future-active.com) has a good line with some stuff
>that Digi-Key doesn't carry. Same goes for Mouser Electronics
>(www.mouser.com).
>
>How about whomping up your own, with spacers from the mounting screws going
>up to some sort of plastic (1/8" acrylic comes to mind)? This is a
>_homebrew_ list, after all.

I'd suggest using pieces of Vectorboard (composite glass stuff
normally used for prototyping) instead of acrylic on hot power
transistors. Acrylic melting/softening point is rather low.

There was a neat little touch on the Circuit Specialists ready-made
power supplies (I just got a triple unit, excellent buy). There is a
conventional finned heat sink on the back for the power-handling
series regulators. The manufacturer (Chinese) added a simple U-
shape of black anodized aluminum that fits in the "slot" of the
heat sink. That covers the power transistor cases and doesn't
appear to lessen the heat-sinking. Very simple addition to the
standard big extruded aluminum heat sink which has been used
for at least 4 decades. Nothing more than a U structure whose
width is cut to fit the heat sink center area. An aluminum strap
with two little legs at the ends.

Len Anderson
retired (from regular hours) electronic engineer person

460. Re: Labeling a Chassis

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 21:15:10 UTC
From: Markus Baertschi <usenet@markus.org>
Message-ID: <MPG.1a7515cb489fbcb5989726@News.CIS.DFN.DE>
Source record: 29347

In article <9_1Ob.239$941.5568@news7.onvoy.net>, willisw200@msn.com says...
> I would like to hear from someone that has done this kind of work
> and find out whats the best way to label a project chassis.
>
> Harry W0PIY

I have an Epson Printer with the ability to print on CD-ROM's. This ability can be (ab)used to print directly on any flat surface including the aluminium front panel for projects. The result is excellent.

Markus
--
Markus Baertschi Phone: ++41 (21) 807 1677
Bas du Ross&#65533; 14b Fax : ++41 (21) 807 1678
CH-1163, Etoy Email: markus@markus.org
Switzerland Homepage: www.markus.org

461. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 21:52:02 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <100m009nqjdn8c1@corp.supernews.com>
Source record: 29348
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

When I got the 188 the 7815 output was nearly zero and I assume the shorted
tantalum caused the low voltage. After I found the bad tantalum and
replaced it the 7815 voltage was still very and the output pin to ground
mesured 12 ohms. I had a NOS Radio Shack 7815 still sealed in its package
so Iused it and that's when pin 3 went to 23 volts and that nearly made a
grown man cry because I thought I fried addtional components. The PCB was
running too hot. After getting a known good 7815 the B+ stayed at 15 volts
and the unit runs cooler and seems to function except that the dial
calibration is off. I'm trying to find a manual.
73
hank wd5jfr
"Ralph Mowery" <rmowery@ctc.net> wrote in message
news:BbCdnUpwiOAtS5TdRVn-tA@ctc.net...
>
> "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
> news:100j0pv7rhnte6d@corp.supernews.com...
> > 23 voolts on output!
> > later
> >
>
> The way I read it , the 15 volt regulator had gone bad and was passing a
> much higher voltage as it was not regulating . That was giving 23 volts
on
> the output instead of the 15 volts it was suspose to.
>
>
>

462. Re: Would it be worthwhile starting an on-line parts ordering house?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 21:52:50 UTC
From: John Miles <jmiles@pop.removethistomailme.net>
Message-ID: <MPG.1a74a00e9efa0d019896a0@news-central.giganews.com>
Source record: 29349

In article <1p1Nb.10235$ID2.8111@newssvr25.news.prodigy.com>,
greyskynospam@sbcglobal.net says...
> I have been pondering this idea on and off, but can't tell if it would be
> worth the effort to do something like this. Can you make a decent living
> selling small quantities of parts - passives, crystals, oscillators, solid
> state, IC's , even exotic things like back diodes and mmic's - via mail
> order. Or, do the large parts houses like Digi Key have the field sewn up?
>

I would say not, at least in the US. Digi-Key is scary good, and there
are plenty of other vendors (from Jameco to Mouser to Circuit
Specialists to Mini-Circuits to Newark...) for the cases where Digi-Key
doesn't come through with the goods.

-- jm

---
http://www.qsl.net/ke5fx
Note: My E-mail address has been altered to avoid spam
---

463. Re: Keep your fingers off my collectors!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-18 23:53:52 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <100m74k6qvtg976@corp.supernews.com>
Source record: 29350

Good point -- clear acrylic would look really pretty, until it melted.

If you insulate the transistor with nylon shoulder washers rather than nylon screws (this is recommended for large temperature excursions, buy the way) then you could use an aluminum shield, for that matter.

"Avery Fineman" <averyfineman@aol.com> wrote in message news:20040118155624.07155.00000105@mb-m06.aol.com...
> In article <100lmv6cir1700@corp.supernews.com>, "Tim Wescott"
> <tim@wescottnospamdesign.com> writes:
>
> >Active Electronics (www.future-active.com) has a good line with some stuff
> >that Digi-Key doesn't carry. Same goes for Mouser Electronics
> >(www.mouser.com).
> >
> >How about whomping up your own, with spacers from the mounting screws going
> >up to some sort of plastic (1/8" acrylic comes to mind)? This is a
> >_homebrew_ list, after all.
>
> I'd suggest using pieces of Vectorboard (composite glass stuff
> normally used for prototyping) instead of acrylic on hot power
> transistors. Acrylic melting/softening point is rather low.
>
> There was a neat little touch on the Circuit Specialists ready-made
> power supplies (I just got a triple unit, excellent buy). There is a
> conventional finned heat sink on the back for the power-handling
> series regulators. The manufacturer (Chinese) added a simple U-
> shape of black anodized aluminum that fits in the "slot" of the
> heat sink. That covers the power transistor cases and doesn't
> appear to lessen the heat-sinking. Very simple addition to the
> standard big extruded aluminum heat sink which has been used
> for at least 4 decades. Nothing more than a U structure whose
> width is cut to fit the heat sink center area. An aluminum strap
> with two little legs at the ends.
>
> Len Anderson
> retired (from regular hours) electronic engineer person

464. Re: Keep your fingers off my collectors!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 02:43:11 UTC
From: k9sqg@aol.com
Message-ID: <20040118214311.13622.00000159@mb-m27.aol.com>
Source record: 29351

Well, not all transistors have the collector on the outside case. But if you contack Caplugs Company, they make plastic caps for just about anything!

465. Re: simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 04:18:19 UTC
From: Pete Beals <PBeal@noaddress.com>
Message-ID: <100mmkb9uco0u9e@corp.supernews.com>
Source record: 29352

Yes most used AM stereo demodulators but those IC's might not be sold anymore.

There must be reasonable implementations as many shortwave receivers have sync detectors.

I just need one to demodulate AM.

Pete
> I think that "as few parts as possible" and "works good" are probably
> somewhat mutually exclusive. Have you done the usual google and
> altavista searches on "synchronous detector"?

466. Re: Labeling a Chassis

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 05:13:10 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <400B675A.A7646687@earthlink.net>
Source record: 29353

Markus Baertschi wrote:
>
> I have an Epson Printer with the ability to print on CD-ROM's. This
> ability can be (ab)used to print directly on any flat surface including
> the aluminium front panel for projects. The result is excellent.

Have you heard about the new CDROM burner that uses special blank
CDROMs that you flip over after you burn the data, then the laser burns
the label into the top coating of the new type CDROMs? I think it is a
H-P design that is due to hit the market in the next couple months.

--
We now return you to our normally scheduled programming.

Take a look at this little cutie! ;-)
http://home.earthlink.net/~mike.terrell/photos.html

Michael A. Terrell
Central Florida

467. Re: Keep your fingers off my collectors!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 05:16:15 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <400B6812.46BDF456@earthlink.net>
Source record: 29354

John Walton wrote:
>
> Looks like Digikey does have them, but you have to order 100!
>

I have some used ones from scrapped IBM computer terminals, but they
snap into another set of holes. I may have a couple like Keystone sells,
but I would have to dig for them. How many do you need?

--
We now return you to our normally scheduled programming.

Take a look at this little cutie! ;-)
http://home.earthlink.net/~mike.terrell/photos.html

Michael A. Terrell
Central Florida

468. Serial keypad for the Yaesu FT-817

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 06:15:49 UTC
From: IT9XXS <g.mazzola@tin.it>
Message-ID: <pCKOb.111102$VW.4550913@news3.tin.it>
Source record: 29355
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.space

Hi,

I made a simple PIC-based keypad for the FT-817.

With a 16-buttons keypad it makes you set the frequency, change mode (AM/FM/USB/LSB/CW), VFO (A/B), repeater shift (+/-/simplex) and split.

You can find the project on my website at http://www.qsl.net/it9xxs

The firmware for the PIC is free to any amateur radio operator, for non-commercial purposes only.

Best 73s,

Giovanni IT9XXS

469. best cutting fluid/oil/paste 2004..... theory and practice?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 10:50:21 UTC
From: alanh_27@yahoo.com
Message-ID: <1e3670a7.0401190250.6c056a3e@posting.google.com>
Source record: 29356
Cross-posted to: sci.materials,sci.engr.mech,rec.crafts.metalworking,rec.radio.amateur.homebrew,rec.aviation.homebuilt

opinions are solicited. Please be detailed. Extras points if you
don't re-post complete text of prior posts when commenting on
same.....

470. Re: simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 14:07:42 UTC
From: Dale Parfitt <par@parelectronics.com>
Message-ID: <OwROb.18800$9U6.9724@nwrddc02.gnilink.net>
Source record: 29357

"Pete Beals" <PBeal@noaddress.com> wrote in message
news:100mmkb9uco0u9e@corp.supernews.com...
> Yes most used AM stereo demodulators but those IC's might not be sold
> anymore.
>
> There must be reasonable implementations as many shortwave receivers have
> sync detectors.
>
> I just need one to demodulate AM.
>
>
> Pete
> > I think that "as few parts as possible" and "works good" are probably
> > somewhat mutually exclusive. Have you done the usual google and
> > altavista searches on "synchronous detector"?

Do a search under KE9OA. Pete is developing a sync detector for use with a
MW RX they are going to market. May possibly sell the sync board separately.
In talking with Pete, and having built my own sync detector- few parts and
sync detectors that stay locked and retrieve hi fi audio do not go together.

Dale W4OP

471. Re: best cutting fluid/oil/paste 2004..... theory and practice?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 16:22:28 UTC
From: tomwalz@email.msn.com
Message-ID: <9e9abe33.0401190822.3ea06c0f@posting.google.com>
Source record: 29358
Cross-posted to: sci.materials,sci.engr.mech,rec.crafts.metalworking,rec.radio.amateur.homebrew,rec.aviation.homebuilt

Test or actual production? Do we factor in maintenance?

Tom

472. Re: best cutting fluid/oil/paste 2004..... theory and practice?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 16:34:16 UTC
From: "Rich S." <capn27@TRAPyahooSPAM.com.sg>
Message-ID: <C8CdnQ_5mdaVmpHdRVn-iQ@harbornet.com>
Source record: 29359
Cross-posted to: sci.materials,sci.engr.mech,rec.crafts.metalworking,rec.radio.amateur.homebrew,rec.aviation.homebuilt

Before the multitude of answers and arguments start - please notice this question was posted to FIVE groups. Let the original poster do the work of reading all five groups to get his answers!

Please do not cross post your reply.

Cheers,
Rich S.
r.a.h.

473. Re: best cutting fluid/oil/paste 2004..... theory and practice?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 16:36:58 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <400c07aa$0$28131$cc9e4d1f@news.dial.pipex.com>
Source record: 29360
Cross-posted to: sci.materials,sci.engr.mech,rec.crafts.metalworking,rec.radio.amateur.homebrew,rec.aviation.homebuilt

Alan Horowitz wrote:

> opinions are solicited. Please be detailed. Extras points if you
> don't re-post complete text of prior posts when commenting on
> same.....

Lard works quite well, some old-time machinists used to swear by it.

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

474. Re: best cutting fluid/oil/paste 2004..... theory and practice?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 16:47:21 UTC
From: Jonathan Barnes <jbarnes@ATnetcomuk.co.uk>
Message-ID: <buh4m0epp1@taliesin2.netcom.net.uk>
Source record: 29362
Cross-posted to: sci.materials,sci.engr.mech,rec.crafts.metalworking,rec.radio.amateur.homebrew,rec.aviation.homebuilt

"Alan Horowitz" <alanh_27@yahoo.com> wrote in message
news:1e3670a7.0401190250.6c056a3e@posting.google.com...
> opinions are solicited. Please be detailed. Extras points if you
> don't re-post complete text of prior posts when commenting on
> same.....

It's horses for courses....

If you are taping, drilling or using hole saws on 300 series stainless
steels try Rocol RTD compound,
I have not found anything better.

For lath suds Castrol Hysol EP has worked well for me on stainless and
general purpose work.

--
Jonathan

Barnes's theorem; for every foolproof device
there is a fool greater than the proof.

To reply remove AT

475. Re: best cutting fluid/oil/paste 2004..... theory and practice?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 16:47:50 UTC
From: "Gary S." <Idontwantspam@net>
Message-ID: <kf2o00p4gae2l713dtabbp6nrmbpu1ddne@4ax.com>
Source record: 29361
Cross-posted to: sci.materials,sci.engr.mech,rec.crafts.metalworking,rec.radio.amateur.homebrew,rec.aviation.homebuilt

On 19 Jan 2004 02:50:21 -0800, alanh_27@yahoo.com (Alan Horowitz)
wrote:

>opinions are solicited. Please be detailed. Extras points if you
>don't re-post complete text of prior posts when commenting on
>same.....

I understoof that the material being cut makes a difference, and to
some degree the cutting speed (hand vs. power).

Happy trails,
Gary (net.yogi.bear)
---
at the 51st percentile of ursine intelligence

Gary D. Schwartz, Needham, MA, USA
Please reply to: garyDOTschwartzATpoboxDOTcom

476. Re: Best antenna (preferrably wire)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 17:46:36 UTC
From: ary <send.mail@dev.null.net>
Message-ID: <pan.2004.01.19.17.46.17.807190@dev.null.net>
Source record: 29363
Cross-posted to: rec.radio.amateur.antenna,alt.radio.amateur,rec.radio.amateur.homebrew,rec.radio.amateur.misc

Vaughn,

It's quite easy: your best bet is the maximum length of wire you can keep
in your backyard AND as high up in the air as you can afford (trees,
towers, chimneys etc.)

To prevent RFI and TVI, make your antenna symmetrical. Feed it with an
open line, and connect the open line with your TX with an appropriate
coupler (the ARRL Handbook is a good source for information).

Please note you do not need to use a thick gauge of copper wire. Even a
thin gauge of stainless steel wire will do.

You will be pleased very much by the results !!

73 de PA0ARY

On Sat, 03 Jan 2004 18:38:59 +0000, Vaughn Combs wrote:

> I have a few questions and I thought that this may be the group that could
> help. I have a nice sized backyard and would like to construct an antenna
> that would give me good performance on 80-10m bands.
>
> The convenient dimensions would put a support (far end) at either 92 feet
> from the back of the house (support exists that is about 15-20 feet up) or
> 120 feet from the back of the house (mast anchored to the other side of a
> shed could easily be installed. Or a more inconvenient support could be
> erected up to 300 feet out (no support buildings) at the absolute far end of
> the property. The width of the property as seen looking out the back window
> is about 65 feet (no supports existing on either side).
>
> Special circumstances and constraints:
>
> -- No tall trees on the property.
>
> -- Attic shack (attic window is probably about 25 feet up). Need to keep to
> the attic.
>
> -- Cable run from back of house to operating position within the attic would
> be approximately 25 feet
>
> -- MUST eliminate RFI in the shack and house.
>
> My current setup is an end-fed longwire that works well on all bands except
> 40m (rig shuts down as I am dipping the SWR to almost 1:1 ;-). I threw up

> the wire as winter was upon me. I have been off the air for almost 10 years
> and REALLY wanted to get on the air again.
>
> While the longwire is performing quite well with the exception of 40m I am
> getting a ton of RF in the shack and it is blanking out TVs and creating
> loud humming in speakers with 100W from the XMTR. I realize that this is
> most likely due to the fact that I have inefficient RF ground and I have cut
> and run radial at 1/4 wave for each band and ran them under the eaves up
> here in the attic. This has not solved the problem. I am friendly with all
> of my neighbors and have visited them and did testing on the bands with them
> on the phone. They are not experiencing any problems. My wife, while
> understanding, would REALLY like the problem to go away ;-)
>
> My main goal is to build an antenna that will solve the aforementioned RFI
> problem and that will provide good performance given my constraints.
>
> Any ideas would be GREATLY appreciated.
>
> Many Thanks and 73,
> Vaughn
> N2BHA

477. Re: Best antenna (preferrably wire)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 18:32:56 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.ONEDOT.org>
Message-ID: <400c2386_6@corp.newsgroups.com>
Source record: 29364
Cross-posted to: rec.radio.amateur.antenna,alt.radio.amateur,rec.radio.amateur.homebrew,rec.radio.amateur.misc

ary wrote:
> It's quite easy: your best bet is the maximum length of wire you can keep
> in your backyard AND as high up in the air as you can afford (trees,
> towers, chimneys etc.)

Hmmmmm, my back yard is ten acres. :-)
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

478. Re: simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 18:47:43 UTC
From: "Jim, N2VX" <ZZZjim_cronin@juno.comZZZ>
Message-ID: <k29o00ppfvkheatcrhnqjv8vccfvter6u7@4ax.com>
Source record: 29365

On Mon, 19 Jan 2004 04:18:19 -0000, Pete Beals <PBeal@noaddress.com>
wrote:

>Yes most used AM stereo demodulators but those IC's might not be sold
>anymore.
>
>There must be reasonable implementations as many shortwave receivers have
>sync detectors.
>
>I just need one to demodulate AM.
>
>
>Pete
>> I think that "as few parts as possible" and "works good" are probably
>> somewhat mutually exclusive. Have you done the usual google and
>> altavista searches on "synchronous detector"?

A long long time ago one appeared in the user-contributed circuits
section of Electronic Design magazine. Don't remember the name of the
column but it was always good. They also used to publish circuit
collections from the column every few years. Lots of clever ideas:
"Build this quadraphonic stereo receiver with a single CMOS interter"
is just a slight exaggeration. I remember reading the magazine up to
the early 90's. Don't know what happened to them.

The synchronous detector used two analog multiplier chips and as I
recall was contributed by someone with a callsign. Don't remember any
other details. Anybody remember the magazine and the column?

Thanks and 73,
Jim

479. what will plug into a Fluke 87's test-lead jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 19:43:50 UTC
From: alanh_27@yahoo.com
Message-ID: <1e3670a7.0401191143.2351b7bc@posting.google.com>
Source record: 29366
Cross-posted to:
sci.electronics.equipment,sci.electronics.repair,alt.engineering.electrical,alt.engineering.maintenance,rec.radio.amateur.homebrew

I want to make up my own custom test leads for my Fluke 87.

What item, sold in mass-distribution at consumer type retail outlets,
will work as a plug?

Alternatively, I could do a simple fabrication What shop item would
be a good starting point to modify from, to plug into the jacks on
this thing?

480. All EE's; Need help solving circuit equations for L-net, Pi-net and T-net

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 20:00:13 UTC
From: pw342@hotmail.com
Message-ID: <5f7b361.0401191200.1a76de34@posting.google.com>
Source record: 29367

ANy EE's out there that remember their circuit design course work. I need the general solutions for L-net, Pi-net and T-net, including reactive loads.
I have cobbled together solutions for these but am not happy with what I have.

General forms in Z would be nice then Fortran can solve them.

A vexing problem. Any inductor in the soultion will have a series R term.
This R needs to be subtracted off the Source or Load and then the calculations run again!. Anyone figured this out ?? Precision is a requirement.

Pat W

481. Re: All EE's; Need help solving circuit equations for L-net, Pi-net and T-net

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 20:40:43 UTC
From: ON5MJ <my_call_sign@skynet.be>
Message-ID: <400c3ff5$0$775$ba620e4c@news.skynet.be>
Source record: 29368

Hi Pat,

Does this help you ?

http://bwrc.eecs.berkeley.edu/Research/RF/projects/60GHz/matching/ImpMatch.html

73 de ON5MJ - Jacques

482. Re: what will plug into a Fluke 87's test-lead jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 20:50:07 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <400c4300$0$16737$cc9e4d1f@news.dial.pipex.com>
Source record: 29369
Cross-posted to: sci.electronics.equipment,sci.electronics.repair,alt.engineering.electrical,alt.engineering.maintenance,rec.radio.amateur.homebrew

Alan Horowitz wrote:
> I want to make up my own custom test leads for my Fluke 87.
>
> What item, sold in mass-distribution at consumer type retail outlets,
> will work as a plug?
>
> Alternatively, I could do a simple fabrication What shop item would
> be a good starting point to modify from, to plug into the jacks on
> this thing?

It probably uses 4 mm plugs, they are widely available.

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

483. Re: what will plug into a Fluke 87's test-lead jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 20:57:12 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <100oh58e4l8mma4@corp.supernews.com>
Source record: 29370
Cross-posted to:
sci.electronics.equipment,sci.electronics.repair,alt.engineering.electrical,alt.engineering.maintenance,rec.radio.amateur.homebrew

Ordinary bananna plugs work just fine, as long as you don't mind them not being sheilded. The extra ring-shaped hole in the thing is for the plug shield which is optional if you're working with low voltages.

"Alan Horowitz" <alanh_27@yahoo.com> wrote in message news:1e3670a7.0401191143.2351b7bc@posting.google.com...
> I want to make up my own custom test leads for my Fluke 87.
>
> What item, sold in mass-distribution at consumer type retail outlets,
> will work as a plug?
>
> Alternatively, I could do a simple fabrication What shop item would
> be a good starting point to modify from, to plug into the jacks on
> this thing?

484. Re: what will plug into a Fluke 87's test-lead jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 22:20:59 UTC
From: Rich Andrews <n0way@yahoo.com>
Message-ID: <Xns9475A65184593mc2500183316chgoill@216.168.3.44>
Source record: 29371
Cross-posted to:
sci.electronics.equipment,sci.electronics.repair,alt.engineering.electrical,alt.engineering.maintenance,rec.radio.amateur.homebrew

alanh_27@yahoo.com (Alan Horowitz) wrote in
news:1e3670a7.0401191143.2351b7bc@posting.google.com:

> I want to make up my own custom test leads for my Fluke 87.
>
> What item, sold in mass-distribution at consumer type retail outlets,
> will work as a plug?
>
> Alternatively, I could do a simple fabrication What shop item would
> be a good starting point to modify from, to plug into the jacks on
> this thing?

http://www.probemaster.com/

--
Nothing beats the bandwidth of a station wagon filled with DLT tapes.

485. Re: Best antenna (preferrably wire)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 22:48:04 UTC
From: Thierry <"To answer me in private use http">
Message-ID: <400c5ea9$1_2@news.vo.lu>
Source record: 29372
Cross-posted to: rec.radio.amateur.antenna,alt.radio.amateur,rec.radio.amateur.homebrew,rec.radio.amateur.misc

"ary" <send.mail@dev.null.net> wrote in message
news:pan.2004.01.19.17.46.17.807190@dev.null.net...
> Vaughn,
>
> It's quite easy: your best bet is the maximum length of wire you can keep
> in your backyard AND as high up in the air as you can afford (trees,
> towers, chimneys etc.)
>
> To prevent RFI and TVI, make your antenna symmetrical. Feed it with an
> open line, and connect the open line with your TX with an appropriate
> coupler (the ARRL Handbook is a good source for information).

Hi,

All depends. I already underligned 2 big mistakes about SWR and ground
screen.
All is relative you know

>
> Please note you do not need to use a thick gauge of copper wire. Even a
> thin gauge of stainless steel wire will do.

I call this a G5RV... ;-)

Thierry
ON4SKY
http://www.astrosurf.com/lombry/qsl-g5rv.htm

>
> You will be pleased very much by the results !!
>
> 73 de PA0ARY
>
> On Sat, 03 Jan 2004 18:38:59 +0000, Vaughn Combs wrote:
>
> > I have a few questions and I thought that this may be the group that
could
> > help. I have a nice sized backyard and would like to construct an
antenna
> > that would give me good performance on 80-10m bands.
> >
> > The convenient dimensions would put a support (far end) at either 92
feet
> > from the back of the house (support exists that is about 15-20 feet up)
or

> > 120 feet from the back of the house (mast anchored to the other side of
a
> > shed could easily be installed. Or a more inconvenient support could be
> > erected up to 300 feet out (no support buildings) at the absolute far
end of
> > the property. The width of the property as seen looking out the back
window
> > is about 65 feet (no supports existing on either side).
> >
> > Special circumstances and constraints:
> >
> > -- No tall trees on the property.
> >
> > -- Attic shack (attic window is probably about 25 feet up). Need to keep
to
> > the attic.
> >
> > -- Cable run from back of house to operating position within the attic
would
> > be approximately 25 feet
> >
> > -- MUST eliminate RFI in the shack and house.
> >
> > My current setup is an end-fed longwire that works well on all bands
except
> > 40m (rig shuts down as I am dipping the SWR to almost 1:1 ;-). I threw
up
> > the wire as winter was upon me. I have been off the air for almost 10
years
> > and REALLY wanted to get on the air again.
> >
> > While the longwire is performing quite well with the exception of 40m I
am
> > getting a ton of RF in the shack and it is blanking out TVs and creating
> > loud humming in speakers with 100W from the XMTR. I realize that this is
> > most likely due to the fact that I have inefficient RF ground and I have
cut
> > and run radial at 1/4 wave for each band and ran them under the eaves up
> > here in the attic. This has not solved the problem. I am friendly with
all
> > of my neighbors and have visited them and did testing on the bands with
them
> > on the phone. They are not experiencing any problems. My wife, while
> > understanding, would REALLY like the problem to go away ;-)
> >
> > My main goal is to build an antenna that will solve the aforementioned
RFI
> > problem and that will provide good performance given my constraints.
> >
> > Any ideas would be GREATLY appreciated.

> >
> > Many Thanks and 73,
> > Vaughn
> > N2BHA
>

486. Re: Automotive GPS Radio Interfacing for APRS use?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 23:03:06 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <buhnqg$c15$1@newshost.mot.com>
Source record: 29374

I have no idea if this is a possibility, but OEM type GPS units typically
have two modes. One is their internal data format and the other is the NMEA
standard. I know that the Motorola Oncore units do & I have seen reference
to other "OEM" standard formats. On the Motorola units, it takes a command
into the serial port to switch between them.

You kept saying GPRS. I think you meant APRS, no?
--
Steve N, K,9;d, c. i My email has no u's.

"Leland C. Scott" <no-spam@junk-mail.net> wrote in message
news:v-CdnXKjcs04dZTd4p2dnA@comcast.com...
> I'm a new owner of a 2004 Jeep Grand Cherokee with
> the optional RB1 in-dash GPS nav radio
> combination. This particular option has been
> available for over a year or more for older
> Chrysler model Jeeps and selected cars.
>
> I looked up the specifications for the GPS-radio
> unit, http://www.wjjeeps.com/nav.htm#SPEC , and
> found that the GPS section uses a communication
> specification called "J1850 bus specification for
> NAV information" for the data format. Has anybody
> tried to interface to a unit like the RB1 for use
> as a mobile GPRS station?
>
> I have found some information on the J1850 bus
> specification and some hardware at
> http://www.intrepidcs.com/vspy/ . Has anybody used
> this for GPRS application? There is some free
> software available if you use a Palm based PC at
> http://www.intrepidcs.com/vspy/vspyce.htm for
> using the network interface hardware.
>
>
> --
> Leland C. Scott
> KC8LDO
>
> ARRL Member
> NCI Member
>
> Charter member of the
> Lawrence Technological University
> Wireless Society W8LTU

>
>

487. Re: simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 23:06:06 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <buho03$c7l$1@newshost.mot.com>
Source record: 29373

This used to be the EDN article search database. It came up, but I don't
know if it still is:
http://www.reed-electronics.com/ednmag/index.asp?rid=0&rme=0&cfd=1

--
Steve N, K,9;d, c. i My email has no u's.

"Jim, N2VX" <ZZZjim_cronin@juno.comZZZ> wrote in message
news:k29o00ppfvkheatcrhnqjv8vccfvter6u7@4ax.com...
> On Mon, 19 Jan 2004 04:18:19 -0000, Pete Beals <PBeal@noaddress.com>
> wrote:
>
> >Yes most used AM stereo demodulators but those IC's might not be sold
> >anymore.
> >
> >There must be reasonable implementations as many shortwave receivers have
> >sync detectors.
> >
> >I just need one to demodulate AM.
> >
> >
> >Pete
> >> I think that "as few parts as possible" and "works good" are probably
> >> somewhat mutually exclusive. Have you done the usual google and
> >> altavista searches on "synchronous detector"?
>
> A long long time ago one appeared in the user-contributed circuits
> section of Electronic Design magazine. Don't remember the name of the
> column but it was always good. They also used to publish circuit
> collections from the column every few years. Lots of clever ideas:
> "Build this quadraphonic stereo receiver with a single CMOS interter"
> is just a slight exaggeration. I remember reading the magazine up to
> the early 90's. Don't know what happened to them.
>
> The synchronous detector used two analog multiplier chips and as I
> recall was contributed by someone with a callsign. Don't remember any
> other details. Anybody remember the magazine and the column?
>
> Thanks and 73,
> Jim

488. Re: simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-19 23:08:58 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <buho5fcgv1@newshost.mot.com>
Source record: 29375

What's the essence of an AM sync detector? Extract the carrier
(filter/clip/amplify the bajeebers out of it) then product detect the
sidebands ?
--
Steve N, K,9;d, c. i My email has no u's.

"Jim, N2VX" <ZZZjim_cronin@juno.comZZZ> wrote in message
news:k29o00ppfvkheatcrhnqjv8vccfvter6u7@4ax.com...
> On Mon, 19 Jan 2004 04:18:19 -0000, Pete Beals <PBeal@noaddress.com>
> wrote:
>
> >Yes most used AM stereo demodulators but those IC's might not be sold
> >anymore.
> >
> >There must be reasonable implementations as many shortwave receivers have
> >sync detectors.
> >
> >I just need one to demodulate AM.
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> >
> >Pete
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> "Build this quadraphonic stereo receiver with a single CMOS interter"
> is just a slight exaggeration. I remember reading the magazine up to
> the early 90's. Don't know what happened to them.
>
> The synchronous detector used two analog multiplier chips and as I
> recall was contributed by someone with a callsign. Don't remember any
> other details. Anybody remember the magazine and the column?
>
> Thanks and 73,
> Jim

489. Eagle PCB layout question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 00:10:55 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <66so00hf4vpmbpp2bc7holvtvrdb9fugsf@4ax.com>
Source record: 29376

Hi all,

I'm just playing around with Eagle Lite this evening and cant seem to get the thing to connect up components in certain circumstances. I get a "this bit isn't a member of that bit" type of error message and the program just refuses me to make the connection. Any ideas?

Secondly, I see that Autorouter is disabled in the Lite version. Does that mean that the main benefit of using layout software is denied me?! I mean, I can spend a few hours making up my own component footprints in any old drawing program and position them as I wish. What use is Eagle Lite in that case? Or is there something I haven't grasped yet?

Thanks,

p.
--

My opinion is worth what you've paid for it.

490. Re: what will plug into a Fluke 87's test-lead jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 00:26:56 UTC
From: curtisk@telusplanet.net
Message-ID: <92d3bc8d.0401191626.69c07ba8@posting.google.com>
Source record: 29377
Cross-posted to:
sci.electronics.equipment,sci.electronics.repair,alt.engineering.electrical,alt.engineering.maintenance,rec.radio.amateur.homebrew

If you're talking about what I'm thinking you are, you can buy normal
banana plugs at almost any electrical type store like Radio Shack.
You just take them apart, solder your wiring in, and you're done.

> I want to make up my own custom test leads for my Fluke 87.
>
> What item, sold in mass-distribution at consumer type retail outlets,
> will work as a plug?
>
> Alternatively, I could do a simple fabrication What shop item would
> be a good starting point to modify from, to plug into the jacks on
> this thing?

491. Re: Eagle PCB layout question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 00:51:33 UTC
From: dplatt@radagast.org
Message-ID: <100ouslj0it366d@corp.supernews.com>
Source record: 29378

>Hi all,
>
>I'm just playing around with Eagle Lite this evening and cant seem to
>get the thing to connect up components in certain circumstances. I get
>a "this bit isn't a member of that bit" type of error message and the
>program just refuses me to make the connection. Any ideas?

I believe I saw an error of that sort, if I tried to create a
connection between an individual link, and a multi-signal bus. You
can only do this if the thing you're trying to hook up, has a name
which matches the name of an element of the bus.

>Secondly, I see that Autorouter is disabled in the Lite version. Does
>that mean that the main benefit of using layout software is denied
>me?! I mean, I can spend a few hours making up my own component
>footprints in any old drawing program and position them as I wish.
>What use is Eagle Lite in that case? Or is there something I haven't
>grasped yet?

Hmmm. On the version of Eagle Lite Freeware (Linux) that I have on my
laptop, the autorouter works just fine.

I started with a small battery float-charger schematic I had sitting
around, did a "switch to board", let the program throw the components
down off-board in random locations, dragged the components to the
board and then rotated them to minimize the amount of
signal-connection crossing. I then used "Tools/Auto", approved all of
the defaults, and it routed the whole board in about ten seconds.

You _did_ create both a schematic, and a board layout, as part of the
same design? All of the components fit within the outlines of the
largest board that the Lite version will create?

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

492. FS NOS 7036 (6BE6)tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 01:31:13 UTC
From: Larry Saletzki <wa9vrh@mtco.com>
Message-ID: <rs%Ob.5401$5M.135419@dfw-read.news.verio.net>
Source record: 29379
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.swap

For Sale NEW 7036 (6BE6) tubes.
The boxes have the following information on them:
5960-00-074-4833 ELECTRON TUBE
1 EACH DLA900-82-G-0017-005
A-3/83 GE-7036 GENERAL ELECTRIC CO. Tubes are 5 to a sleeve.
The 7036 is electrically the same as the 6BE6 but it physically
taller. It is the same height as a 6AQ5 so tubes shields will
not fit from a 6BE6.
$10.00 per sleeve plus $3.85 priorty mail shipping U.S. locations only.
1-4 sleeves $3.85 priority mail shipping
4-8 sleeves $7.70 priority mail shipping
Thanks Larry WA9VRH

493. Re: what will plug into a Fluke 87's test-lead jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 01:58:11 UTC
From: jerryg50@hotmail.com
Message-ID: <460a833b.0401191758.4791e924@posting.google.com>
Source record: 29380
Cross-posted to:
sci.electronics.equipment,sci.electronics.repair,alt.engineering.electrical,alt.engineering.maintenance,rec.radio.amateur.homebrew

They are called "banana plugs", and are available from most any
elecronics supplier.

Jerry Greenberg
http://www.zoom-one.com

--

alanh_27@yahoo.com (Alan Horowitz) wrote in message
news:<1e3670a7.0401191143.2351b7bc@posting.google.com>...
> I want to make up my own custom test leads for my Fluke 87.
>
> What item, sold in mass-distribution at consumer type retail outlets,
> will work as a plug?
>
> Alternatively, I could do a simple fabrication What shop item would
> be a good starting point to modify from, to plug into the jacks on
> this thing?

494. Re: All EE's; Need help solving circuit equations for L-net, Pi-net and T-net

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 02:12:17 UTC
From: averyfineman@aol.com
Message-ID: <20040119211217.02537.00002556@mb-m23.aol.com>
Source record: 29383

In article <5f7b361.0401191200.1a76de34@posting.google.com>, pw342@hotmail.com (PatW) writes:

>ANy EE's out there that remember their circuit design course work. I
>need the general solutions for L-net, Pi-net and T-net, including
>reactive loads.
> I have cobbled together solutions for these but am not happy with
>what I have.

[why do I sense a student needing help on an assignment? :-)]

>General forms in Z would be nice then Fortran can solve them.

I have them handy for the two-element L-C matching network, including the range of values possible with the two basic configurations of R-load higher-than or lower-than R-source. Reactance of the load can be cancelled out via the match network opposite reactance...one type may require an Z to Y (and vice-versa) transform in order to "see" that.

Before going into all of that, the load impedance (or admittance) has to considered and known approximately. Loads, whether of an antenna or a following stage, all have great variations, especially in reactance values. The choice of network will be governed by the necessary bandwidth as well as range of R and X.

Reg Edwards ought to have a program on his website that does the solution for all those networks. He has a lot of good, useful little programs that don't take up much space in the computer and have good accuracy.

>A vexing problem.

Not if you know complex arithmetic rules. It's just a lot of work in solving equations with complex quantities.

>Any inductor in the soultion will have a series R term.

Not necessarily. Only if there is an inductor with very low Q in the circuit. For most impedance magnitudes of 500 Ohms or less, the inductive loss can essentially be neglected. Once the approximate values are found, the matching network losses can be examined in detail to determine heating and/or efficiency.

>This R needs to be subtracted off the Source or Load and then the
>calculations run again!

No. The solutions can be done simultaneously in the computer...
or reduced to two equations for calculation on a scientific calculator.

>Anyone figured this out ?? Precision is a requirement.

Okay...that sounds even more suspicously like an assignment... :-)

Yes, I "figured it out" some while ago and can do precision via my
FORTRAN compiler program to 14 digits. My H-P 32 S II does
things to 10 decimal digits. Couldn't even come close to that kind
of accuracy in real, practical parts. :-)

If you were actually building something (that's why this is called a
"homebrew" forum), I'd supply the formulas. Those aren't rocket
science. Working out the solutions via complex quantities is good
learning for students (whether they like it or not); that CAN find a
need later in life when stuck with real design problems.

Len Anderson
retired (from regular hours) electronic engineer person

495. Re: what will plug into a Fluke 87's test-lead jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 02:12:18 UTC
From: averyfineman@aol.com
Message-ID: <20040119211218.02537.00002557@mb-m23.aol.com>
Source record: 29382

In article <1e3670a7.0401191143.2351b7bc@posting.google.com>,
alanh_27@yahoo.com (Alan Horowitz) writes:

>I want to make up my own custom test leads for my Fluke 87.
>
>What item, sold in mass-distribution at consumer type retail outlets,
>will work as a plug?

You haven't described your desired custom but memory says that
the 87 takes standard banana plugs connecting to the DVOM itself.
The socket on the meter has the extra insulation rim for a totally-
enclosed plugging in but the basic plug is still a banana plug that
has been around for decades.

Circuit-Specialists in Mesa, AZ, sells Fluke things and has a wide
assortment of Fluke test leads ranging from $11.50 to $37.50. You
can check them out at http://www.web-tronics.com.

They are quick on delivery over the Internet. I just got a bunch of
test equipment from them at my door only 4 days after placing the
order (UPS ground delivery).

Len Anderson
retired (from regular hours) electronic engineer person

496. Re: simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 02:12:19 UTC
From: averyfineman@aol.com
Message-ID: <20040119211219.02537.00002558@mb-m23.aol.com>
Source record: 29381

In article <k29o00ppfvkheatcrhnqjv8vccfvter6u7@4ax.com>, "Jim, N2VX"
<ZZZjim_cronin@juno.comZZZ> writes:

>On Mon, 19 Jan 2004 04:18:19 -0000, Pete Beals <PBeal@noaddress.com>
>wrote:
>
>>Yes most used AM stereo demodulators but those IC's might not be sold
>>anymore.
>>
>>There must be reasonable implementations as many shortwave receivers have
>>sync detectors.
>>
>>I just need one to demodulate AM.
>>
>>
>>Pete
>>> I think that "as few parts as possible" and "works good" are probably
>>> somewhat mutually exclusive. Have you done the usual google and
>>> altavista searches on "synchronous detector"?
>
>A long long time ago one appeared in the user-contributed circuits
>section of Electronic Design magazine. Don't remember the name of the
>column but it was always good. They also used to publish circuit
>collections from the column every few years. Lots of clever ideas:
>"Build this quadraphonic stereo receiver with a single CMOS interter"
>is just a slight exaggeration. I remember reading the magazine up to
>the early 90's. Don't know what happened to them.

Electronic Design is online at http://www.elecdesign.com

Their newer website makes it a bit difficult to search for Design
Ideas in past issues. Those probably don't go back farther than
2001 but I could be mistaken. Source code for those column
pieces requiring source is available as separate text files.

EDN is online at http://www.reed-electronics.com/ednmag

EDN's Design Ideas go back only to 1995...but are easier to
access.

>The synchronous detector used two analog multiplier chips and as I
>recall was contributed by someone with a callsign. Don't remember any
>other details. Anybody remember the magazine and the column?

I still get both Electronic Design and EDN, plus RF Design and
Microwaves & RF. Used to cut up the issues after a month or so

and file them for reference...until they all got on-line and I could write them onto a CD (much easier to reference, less space).

Don't recall the article or didn't bother to log it in memory as "important." :-) :-(

Motorola quit a whole bunch of specialty ICs a bit ago, very few showing up on other websites. They made a nice stereo AM IC that had an automatic synchronous detection system. Not enough market demand for it. ON Semiconductor still makes a few of the old Motorola line.

Len Anderson
retired (from regular hours) electronic engineer person

497. High Gain Directional Slotted Antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 02:57:40 UTC
From: noone <noone@nowhere.com>
Message-ID: <400c9a6b_2@news.tm.net.my>
Source record: 29384

Do these exist?
If so...
* Does anyone have any web references/normal references (primarily for VHF/UHF)?
* Would it not be easier to manufacture a yaggi looking antenna (with slots instead of elements)
using a single sheet of metal and stamping machines?

498. Re: simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 03:58:25 UTC
From: averyfineman@aol.com
Message-ID: <20040119225825.21642.00003872@mb-m01.aol.com>
Source record: 29385

In article <buho5fcgv1@newshost.mot.com>, "Steve Nosko"
<suteuve.nosukowicuz@moutouroula.com> writes:

>What's the essence of an AM sync detector? Extract the carrier
>(filter/clip/amplify the bajeebers out of it) then product detect the
>sidebands ?
>--
>Steve N, K,9;d, c. i My email has no u's.

Essentially, yes. There's a further step, though, and that is
locking a local mixing oscillator to the carrier frequency and
mixing that with the whole thing.

If the local mixing oscillator is in phase with the received
carrier, the mixing results in just a DC component which can
be removed easily. A carrier in-phase lock allows separate
detection of the sidebands...which could be used to
advantage such as having binaural audio modulation with AM.

That also works out well for a quasi-stereo listening with any
signal that is NOT binaurally modulated. The effect of hearing
through such a detector's audio cannot accurately be described
in words. Nearby-signal splatter can be "heard" as left or right
of the desired signal. Strange sound but does allow the mind's
own spatial filtering to sort-of blot out nearby interference.

That quasi-stereo circuit is a lot more complicated (it's usually
a typical Costas Loop with local mixing oscillator having shifts
for quadrature phasing) than the direct amplify-limit-clip-the-
bejeebers out of the carrier and mix that with whole works...as
was done in the Motorola MC1330P 8-pin DIP IC (now obsolete
but Kits&Parts as a few left).

Len Anderson
retired (from regular hours) electronic engineer person

499. Re: High Gain Directional Slotted Antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 04:38:41 UTC
From: averyfineman@aol.com
Message-ID: <20040119233841.11022.00003585@mb-m14.aol.com>
Source record: 29386

In article <400c9a6b_2@news.tm.net.my>, "noone" <noone@nowhere.com> writes:

>Do these exist?
>If so...
>* Does anyone have any web references/normal references (primarily for
>VHF/UHF)?
>* Would it not be easier to manufacture a yaggi looking antenna (with slots
>instead of elements)
>using a single sheet of metal and stamping machines?

Probably not. Commercial slot antennas are usually done with
waveguide for directivity and gain.

The Commercial Aviation section of RCA EASD in Van Nuys, CA,
was making X-Band aviation weather radar antennas using slotted
waveguide in 1975. It was lighter and more rugged with no loss of
beam pattern accuracy as compared to the old parabolic reflector
made of fiberglass-epoxy with a gold-plated mesh inlay. In order to
make it you would need aluminum dip-brazing techniques at your
disposal.

In going on down to 70 cm ham bands, a Yagi could be made with
a single-foil-layer PCB. That could be made weatherproof with an
overlay of substrate board epoxied in place. Yagi dimensions
would have to be altered for the denser medium of substrate dielectric,
but that could be determined empirically.

Slot antennas have been made for high-performance aircraft. Those
do not protrude into the airstream. However, the slot would still be
on the order of a half-wavelength long; the conducting part of the slot
antenna is the rim of the slot. No "high gain" there, only a "negative"
form of a folded dipole, pretty much the same RF characteristics.

Slot antennas have been around for about a half century in various
forms and flavors. Their chief advantage is a physical one for certain
applications. Information is in textbooks specializing on the shorter
wavelength antennas, very little quantitative info on the web.

Len Anderson
retired (from regular hours) electronic engineer person

500. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 05:11:58 UTC
From: Mike Burch <mburch46@mchsi.com>
Message-ID: <yM2Pb.103925$xy6.224587@attbi_s02>
Source record: 29387
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

Thanks to all of you for posting to this thread. Man did I learn a lot!

Mike Burch K8MB
Apache Junction AZ

501. Re: Smith Chart Plotter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 07:18:34 UTC
From: k7itm@aol.com
Message-ID: <3200347.0401192318.699a2a4@posting.google.com>
Source record: 29388
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Don't know about that particular instrument, but it might be
enlightening if you're not already aware, that the Smith chart is
simply a linear plot of the complex reflection coefficient, which is
pretty easy to get from an RF bridge. The chart overlays that linear
plot with the circular grid lines for resistance and reactance (and
conductance and admittance and various other things as desired).

Cheers,
Tom

"C Edgar" <ehunt@dslextreme.com> wrote in message
news:<100ldiqjunq8b7b@corp.supernews.com>...
> I'm trying to get some info on a Smith Chart Plotter made by Dielectric
> Products Engineering. It looks like an RF bridge with an input, load and 4
> bnc outputs for +/-X and +/-Y-axis. Would appreciate any info.

502. Re: High Gain Directional Slotted Antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 08:46:03 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <e5jp00lkrl5emuafkppjircemcc4s4b4i6@4ax.com>
Source record: 29389

On Tue, 20 Jan 2004 10:57:40 +0800, "noone" <noone@nowhere.com> wrote:

>* Would it not be easier to manufacture a yaggi looking antenna (with slots
>instead of elements)
>using a single sheet of metal and stamping machines?

Note that a sheet of metal hanging in on the wall with a horizontal
slot will radiate _vertical_ polarisation.

If a horizontal yagi would be replaced with a long sheet of metal with
slots where the yagi elements are replaced with slots, the
polarisation would be in the direction of the original yagi boom. You
might get some kind of broadside array radiating upwards if the
distance between the slots are suitable.

Paul OH3LWR

503. Re: Eagle PCB layout question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 10:28:44 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <400d02dd$0$23461$cc9e4d1f@news.dial.pipex.com>
Source record: 29390

Paul Burridge wrote:
> Hi all,
>
> I'm just playing around with Eagle Lite this evening and cant seem to
> get the thing to connect up components in certain circumstances. I get
> a "this bit isn't a member of that bit" type of error message and the
> program just refuses me to make the connection. Any ideas?
>
> Secondly, I see that Autorouter is disabled in the Lite version. Does
> that mean that the main benefit of using layout software is denied
> me?! I mean, I can spend a few hours making up my own component
> footprints in any old drawing program and position them as I wish.
> What use is Eagle Lite in that case? Or is there something I haven't
> grasped yet?

The autorouter should work. If you are thinking of using the autorouter
for your FSM don't bother, autorouters aren't much good for RF boards.
You will get much better results routing it manually.

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

504. Re: Eagle PCB layout question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 10:58:50 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <rc0q00llfae785j1pjqhb433l0khdr5648@4ax.com>
Source record: 29391

On Tue, 20 Jan 2004 00:51:33 -0000, dplatt@radagast.org (Dave Platt) wrote:

>I believe I saw an error of that sort, if I tried to create a
>connection between an individual link, and a multi-signal bus. You
>can only do this if the thing you're trying to hook up, has a name
>which matches the name of an element of the bus.

I can't see the point of this disadvantage.

>Hmmm. On the version of Eagle Lite Freeware (Linux) that I have on my
>laptop, the autorouter works just fine.

It's disabled on this PC/Windoze version for some reason!

>I started with a small battery float-charger schematic I had sitting
>around, did a "switch to board", let the program throw the components
>down off-board in random locations, dragged the components to the
>board and then rotated them to minimize the amount of
>signal-connection crossing. I then used "Tools/Auto", approved all of
>the defaults, and it routed the whole board in about ten seconds.

The "helpfile" says you can move the components to the board, position them, click on 'ratsnest' to get "airwires" to appear between the relevant nodes, then do the tools/auto bit and get the defaults you specify, then click "go" and the routing is automatically done. Unfortunately, however, no airwires appear, nor do any tracks. Nothing happens and the "helpfile" says autorouter isn't a working function in the Lite version! So far I can't say I'm exactly impressed...

>You _did_ create both a schematic, and a board layout, as part of the
>same design? All of the components fit within the outlines of the
>largest board that the Lite version will create?

Yes.

--

My opinion is worth what you've paid for it.

505. Re: Eagle PCB layout question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 13:23:11 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <IeWdnZgHmsS4tpDdRVn-jw@comcast.com>
Source record: 29392

There are a couple Eagle newsgroups -- you can link to them through
Cadsoft's site (although the news is in English) and set it up just like
rec.radio.amateur.homebrew in your outlook browser,

eagle.support.eng and
eagle.userchat.eng

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:66so00hf4vpmbpp2bc7holvtvrdb9fugsf@4ax.com...
>
> Hi all,
>
> I'm just playing around with Eagle Lite this evening and cant seem to
> get the thing to connect up components in certain circumstances. I get
> a "this bit isn't a member of that bit" type of error message and the
> program just refuses me to make the connection. Any ideas?
>
> Secondly, I see that Autorouter is disabled in the Lite version. Does
> that mean that the main benefit of using layout software is denied
> me?! I mean, I can spend a few hours making up my own component
> footprints in any old drawing program and position them as I wish.
> What use is Eagle Lite in that case? Or is there something I haven't
> grasped yet?
>
> Thanks,
>
> p.
> --
>
> My opinion is worth what you've paid for it.

506. Re: Eagle PCB layout question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 14:04:16 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <dmcq00hg22c5ik3tiu7h3sdn2eoj5as3tu@4ax.com>
Source record: 29393

On Tue, 20 Jan 2004 08:23:11 -0500, "John Walton"
<jdwalton@comcast.net> wrote:

>There are a couple Eagle newsgroups -- you can link to them through
>Cadsoft's site (although the news is in English) and set it up just like
>rec.radio.amateur.homebrew in your outlook browser,
>
>eagle.support.eng and
>eagle.userchat.eng

Thanks. I'll take a look.

A note to Leon: I'd have d/loaded your suggested program by now but
the main computer's overdue for an update of all sorts of things
(currently underway). Since it's such a huge d/load, I'm going to do
it overnight tonight and just hope it's succeeded by the morning!
--

My opinion is worth what you've paid for it.

507. Re: what will plug into a Fluke 87's test-lead jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 14:57:48 UTC
From: Tom Grayson <graysont@bigpond.net.au>
Message-ID: <MlbPb.20545$Wa.775@news-server.bigpond.net.au>
Source record: 29394
Cross-posted to:
sci.electronics.equipment,sci.electronics.repair,alt.engineering.electrical,alt.engineering.maintenance,rec.radio.amateur.homebrew

"Jerry Greenberg" <jerryg50@hotmail.com> wrote in message
news:460a833b.0401191758.4791e924@posting.google.com...
> They are called "banana plugs", and are available from most any
> elecronics supplier.
>

This advice is good..... however.....

after many years of using the fluke 87, I have learnt that the plastic
shield also seems to help with a little mechanical support against the body
of the
meter.
Using the 4mm banana plugs works fine .....electrically....., but if
the leads are bumped frequently (which invaribably happens happens in an
industrial situation) , there is a fair chance that the extra leverage will
eventually cause the internal tube to break it's connection at the printed
circuit board, resulting in an intermittant connection there.
It is easy to check if this has happened, Just plug each end of a lead into
the "COM" and "V OHM" holes and with the meter on the ohms scale, wriggle
the plugs around, The bad connection wiill easliy be seen.

If you are handy with a screwdriver and a soldering iron this is easily
fixed (as I have frequently done)

Using the correct Shielded plugs seems to reduce the instance of this and I
am guessing that the little extra mechanical support
against the meter body is the reason for it.

But that's only my humble opinion.

Tom Grayson

508. Re: simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 16:23:48 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <bujkpqbaf1@newshost.mot.com>
Source record: 29395

Steve's imbedded comments:

"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040119225825.21642.00003872@mb-m01.aol.com...
> In article <buho5fcgv1@newshost.mot.com>, "Steve Nosko"
> <suteuve.nosukowicuz@moutouroula.com> writes:
>
> >What's the essence of an AM sync detector? Extract the carrier
> >(filter/clip/amplify the bajeebers out of it) then product detect the
> >sidebands ? Steve N, K,9;d, c. i My email has no u's.
>
> ...locking a local mixing oscillator to the carrier frequency and
> mixing that with the whole thing.

Ah yes! need a reliable LO.

> ... A carrier in-phase lock allows separate
> detection of the sidebands...which could be used to
> advantage such as having binaural audio modulation with AM.

Ah yes... Back to the old three methods of generating / detecting
sideband signals.

Regards, Steve

Lesee if he bites on that....

509. Re: what will plug into a Fluke 87's test-lead jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 19:46:50 UTC
From: hhc314@yahoo.com
Message-ID: <7ce4e226.0401201146.14605931@posting.google.com>
Source record: 29396
Cross-posted to:
sci.electronics.equipment,sci.electronics.repair,alt.engineering.electrical,alt.engineering.maintenance,rec.radio.amateur.homebrew

jerryg50@hotmail.com (Jerry Greenberg) wrote in message
news:<460a833b.0401191758.4791e924@posting.google.com>...
> They are called "banana plugs", and are available from most any
> elecronics supplier.
>
> Jerry Greenberg
> http://www.zoom-one.com

I really don't believe that a Fluke 87 connector is a banana plug. See
this site:

http://www.jensentools.com/product/group.asp?parent_id=8385

Like most modern multimeters, the Fluke 87 employs safety connectors
so that if a test lead pulls out of the meter, it doesn't pose a
safety hazard with an exposed conductor.

It is rare to see banana plugs used on many multimeters since the days
of the Simpson 260 and Triplett 630, and these were circa 1965. This
is because they were responsible for too many accidents. Today, banana
connectors are rarely seen other than insrumentation targeted at
accomplishing audio measurments, where it is commonplace.

Wish that I could provide information on the connectors that mate with
the Fluke 87, but without a search I have no idea what these
connectors are, or who makes them.

Even my cheap little Wavetek 5XL employs connectors of the shrouded
gendre, and while you probably can jam a banana plug into them (or a
twisted paper clip for that matter), you would negate the safety
features of the shrouded connector design and in some applications
their use would not only be unsafe but illegal.

Harry C.

510. Re: what will plug into a Fluke 87's test-lead jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 23:24:36 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <nacp00lk862v2i8dfvqlv9d59h2qprj7ir@4ax.com>
Source record: 29298
Cross-posted to:
sci.electronics.equipment,sci.electronics.repair,alt.engineering.electrical,alt.engineering.maintenance,rec.radio.amateur.homebrew

On 19 Jan 2004 11:43:50 -0800 alanh_27@yahoo.com (Alan Horowitz)
wrote:

>I want to make up my own custom test leads for my Fluke 87.
>
>What item, sold in mass-distribution at consumer type retail outlets,
>will work as a plug?

Standard Banana Plugs.

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA
---

511. Eagle Library Files

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-20 23:38:24 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <QZiPb.2138$ro4.1379@nwrdny02.gnilink.net>
Source record: 29297

Does anyone have Eagle PCB library files for the Analog Devices family of
DDS chips, particularly the AD9834, AD9850, and AD9854?

Joe
W3JDR

512. Re: simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-21 00:30:24 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <AKjPb.1421$J72.41737@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29299

I did try to e-mail him a copy of the schematic Dale, and it bounced back to me as undeliverable, so I am not sure what is up with his address. Oh, I did get the brackets. Thanks!

Pete

"Dale Parfitt" <par@parelectronics.com> wrote in message news:OwROb.18800$9U6.9724@nwrddc02.gnilink.net...
>
> "Pete Beals" <PBeal@noaddress.com> wrote in message
> news:100mmkb9uco0u9e@corp.supernews.com...
> > Yes most used AM stereo demodulators but those IC's might not be sold
> > anymore.
> >
> > There must be reasonable implementations as many shortwave receivers have
> > sync detectors.
> >
> > I just need one to demodulate AM.
> >
> >
> > Pete
> > > I think that "as few parts as possible" and "works good" are probably
> > > somewhat mutually exclusive. Have you done the usual google and
> > > altavista searches on "synchronous detector"?
>
> Do a search under KE9OA. Pete is developing a sync detector for use with a
> MW RX they are going to market. May possibly sell the sync board separately.
> In talking with Pete, and having built my own sync detector- few parts and
> sync detectors that stay locked and retrieve hi fi audio do not go together.
>
> Dale W4OP
>
>

513. Re: simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-21 00:37:05 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <RQjPb.1440$J72.41576@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29300

I did do a version of that quasi-sync detector, using a Philips SA637 digital FM receiver chip. I took one of the limiter outputs and fed it back into the LO input of the on-board mixer. The 455kHz I.F. signal was applied to the RF input of the on-board mixer, and the audio was taken from the I.F. output of this mixer. Not bad, although the demodulated audio level was fairly low (about 50mV p-p). I was actually considering using that detector, until I discovered the appnote for the Analog Devices AD607.

Pete

"Avery Fineman" <averyfineman@aol.com> wrote in message news:20040119225825.21642.00003872@mb-m01.aol.com...
> In article <buho5fcgv1@newshost.mot.com>, "Steve Nosko"
> <suteuve.nosukowicuz@moutouroula.com> writes:
>
> >What's the essence of an AM sync detector? Extract the carrier
> >(filter/clip/amplify the bajeebers out of it) then product detect the
> >sidebands ?
> >--
> >Steve N, K,9;d, c. i My email has no u's.
>
> Essentially, yes. There's a further step, though, and that is
> locking a local mixing oscillator to the carrier frequency and
> mixing that with the whole thing.
>
> If the local mixing oscillator is in phase with the received
> carrier, the mixing results in just a DC component which can
> be removed easily. A carrier in-phase lock allows separate
> detection of the sidebands...which could be used to
> advantage such as having binaural audio modulation with AM.
>
> That also works out well for a quasi-stereo listening with any
> signal that is NOT binaurally modulated. The effect of hearing
> through such a detector's audio cannot accurately be described
> in words. Nearby-signal splatter can be "heard" as left or right
> of the desired signal. Strange sound but does allow the mind's
> own spatial filtering to sort-of blot out nearby interference.
>
> That quasi-stereo circuit is a lot more complicated (it's usually
> a typical Costas Loop with local mixing oscillator having shifts
> for quadrature phasing) than the direct amplify-limit-clip-the-
> bejeebers out of the carrier and mix that with whole works...as
> was done in the Motorola MC1330P 8-pin DIP IC (now obsolete
> but Kits&Parts as a few left).
>

> Len Anderson
> retired (from regular hours) electronic engineer person

514. Re: what will plug into a Fluke 87's test-lead jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-21 03:00:37 UTC
From: James Sweet <jamessweet@hotmail.com>
Message-ID: <pXIPb.91894$Rc4.519450@attbi_s54>
Source record: 29301
Cross-posted to:
sci.electronics.equipment,sci.electronics.repair,alt.engineering.electrical,alt.engineering.maintenance,rec.radio.amateur.homebrew

"Harry Conover" <hhc314@yahoo.com> wrote in message
news:7ce4e226.0401201146.14605931@posting.google.com...
> jerryg50@hotmail.com (Jerry Greenberg) wrote in message
news:<460a833b.0401191758.4791e924@posting.google.com>...
> > They are called "banana plugs", and are available from most any
> > elecronics supplier.
> >
> > Jerry Greenberg
> > http://www.zoom-one.com
>
> I really don't believe that a Fluke 87 connector is a banana plug. See
> this site:

I have one, bananna plugs fit just fine, I have a few specialized test jigs
that use them.

515. Re: Isolating shorted PCB component ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-21 03:45:53 UTC
From: dkelvey@hotmail.com
Message-ID: <43258753.0401201945.6b2b9ce1@posting.google.com>
Source record: 29302
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.antiques.radio+phono

dplatt@radagast.org (Dave Platt) wrote in message
news:<100e0a9fqjrjq4b@corp.supernews.com>...
> >Sometime ago I think I recall someone posted or wrote an article on a neat
> >way to isolate a shorted component on a pcb using common test eqpt but I
> >can't recall the methodology. I'm trying to find a shorted component on a
> >Wavetek 188-S-1257 signal generator. The B+ line reads about 0.4 ohms and
> >I'm not having much luck disconnecting componets. I don't have a schematic
> >and my eyes ain't what they used to be for tracing and I want to minimize
> >the unsoldering. Does anyone recall the article or have a good way?
>
> Bob Pease gives a schematic for a short-circuit detector on page 21 of
> his "Troubleshooting Analog Circuits". It uses an LM10 op amp and an
> LM331 voltage-to-frequency converter, plus one transistor and some
> passives. You feed some low-voltage, current-limited power into one
> end of the shorted trace, slide the probe along the PCB trace starting
> from the power injection point, and listen to the tone. When you go
> along portions of the trace which aren't carrying the short-circuit
> current to ground, the tone remains stable. When you go along
> portions which _are_ carrying short-circuit current to ground, the
> tone rises (lower voltage present on the trace) as you move towards
> the short, and falls as you move away from it. When you pass the
> shorted point, the tone rises to its highest frequency and stays
> there.
>
> Pease points out that you can use this same basic technique with
> nothing more than a current-limited voltage supply and a sensitive
> voltmeter (VTVM or FET-input DVM)... but that listening to tones is a
> good deal easier.
>
> At .4 ohms, if you feed in 100 milliamps you'll get around 40
> millivolts at the injection point, falling to zero at the point of the
> short. A good 3.5-digit voltmeter with a 2-volt scale ought to give
> you enough resolution to get quite close to where the short circuit is.

Hi Dave
I find it works better if you don't run power through the short.
I run the supply along one of the traces. I then place one lead
of the DVM on the trace that it is shorted to. I run the other lead
along the trace with the power supply and look for a null. This method,
with a slight variation even works for power plane shorts. I go from
opposite corners and lay a piece of string along the null lines.
Where they cross is where the short is.
Later

Dwight

516. Re: simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-21 03:59:51 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <buktfn$n98$1@freenet9.carleton.ca>
Source record: 29303

"Pete KE9OA" (n.gianakopoulos@worldnet.att.net) writes:
> I did do a version of that quasi-sync detector, using a Philips SA637
> digital FM receiver chip. I took one of the limiter outputs and fed it back
> into the LO input of the on-board mixer. The 455kHz I.F. signal was applied
> to the RF input of the on-board mixer, and the audio was taken from the I.F.
> output of this mixer. Not bad, although the demodulated audio level was
> fairly low (about 50mV p-p). I was actually considering using that detector,
> until I discovered the appnote for the Analog Devices AD607.
>
> Pete
>
Of course, what we've tended to see is an all or nothing thing when it comes to AM (with carrier) detection. A simple diode detector, or a PLL based synchronous detector (with or without phasing for sideband selection). In some ways, it's been driven by market not by curiosity. In the early seventies, those Signetic 56X series of analog PLLs came along, and simple synchronous detectors (or outright receivers) were all over the place. Most of the people applying them in hobby circles hadn't woke up one day and said "we need a better AM detector", it was because all of a sudden one could get the function on a single IC. So there was a novelty, if nothing else. Various communication type ICs came along at that point, and people were interested in "all mode" detectors from them. Since a double balanced mixer was common to most of such ICs (the MC1496, various FM detectors, the LM373, various Plessey ICs and let's not forget Ralph Burhan making a Loran C receiver out of an IC made for simple AM/FM broadcast reception), it certainly caused an interest in simple quasi-synchronous or outright synchronous detectors. But again, it often seemed to be "how can we get the most out of this IC" rather than "let's try to improve the lowly AM detector".

So there have been very little instances of biased diode detectors (I think one of the Drake receivers used one, and Rohde showed a few in his Ham Radio articles a quarter century ago, and I've seen some in Wireless World in years gone by). Whether or not that is a useful path, there never was the level of interest in trying such things that there was for synchronous detectors, even before the latter became easy with ICs.

And while at one point the limiter feeding the product detector was described as a "synchronous detector" and worthy of experimentation, as fancier detectors became more common, they are dismissed as merely quasi-synchronous and maybe not even worth the effort. Yet, they are a middle ground, maybe offering some increase in performance without the extra circuitry of a PLL based detector. I can point

to a 1955 (I think) article in QST where someone built a fancy
receiver, with two parallel IF strips. One was AM bandwidth,
the other CW bandwidth. But, there was switching at the outputs
of the IF strips, so the CW strip could feed the product detector
at the output of the voice IF, and get some level of increased performance.

Let's not forget (to the original poster) that the whole point
of going beyond a diode detector is to improve operation with weak
carriers compared to the sidebands, or for that matter with adjacent
channel interference. The synchronous comes about because one needs
the reinserted carrier right where the incoming carrier is, but
except for that need, it's all about mixing the incoming signal down
to audio, just as in sideband reception. With a strong signal, the diode
mixer works fine for that, mixing the sidebands with the carrier. But as
the carrier weakens, or an adjacent signal becomes stronger to "capture"
the detector, the simple diode detector suffers.

Long before before CQ ran the article about the synchronous detector
in 1958 or so, most or all hams who tried for better AM reception tried
other things. Like boosting the carrier of an incoming signal in
reference to the sidebands, "exalted carrier". The common, or maybe
only means, of doing this was by using a Q-Multiplier, which could
provide a narrow peak for the carrier, but a relatively sloppy
skit so it didn't attenuate the sidebands too much. Nobody talks
about this anymore, even though we've seen in this thread the comment
"simple and good" don't apply to synchronous detectors. But how
much improvement is needed, versus how much circuitry one is willing
to accept?

Michael VE2BVW

517. WTB: HP/Agilent 346A (or B) Noise Source for HP 8970A Noise Figure Meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-21 04:20:19 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <tH-dnQwujM-xY5DdUSdV9g@ptd.net>
Source record: 29304

The subject line pretty much says it.

Need HP/Agilent 346A or 346B noise source with BNC connector
on bias end and N connector on output end.

Must be in good condition and fully functional - no burn-outs, please.

If you have one/know where I can find a reasonable deal on one,
please contact me by direct e-mail at wk3c@wk3c.com please.
(note, the e-mail address in the line above is on a different machine
than I use for usenet, please reply there for prompt attention)

73,
Carl - wk3c

518. Re: what will plug into a Fluke 87's test-lead jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-21 05:06:40 UTC
From: averyfineman@aol.com
Message-ID: <20040121000640.12631.00004382@mb-m28.aol.com>
Source record: 29305

In article <7ce4e226.0401201146.14605931@posting.google.com>, hhc314@yahoo.com (Harry Conover) writes:

>jerryg50@hotmail.com (Jerry Greenberg) wrote in message
>news:<460a833b.0401191758.4791e924@posting.google.com>...
>> They are called "banana plugs", and are available from most any
>> elecronics supplier.
>>
>> Jerry Greenberg
>> http://www.zoom-one.com
>
>I really don't believe that a Fluke 87 connector is a banana plug. See
>this site:
>
>http://www.jensentools.com/product/group.asp?parent_id=8385
>
>Like most modern multimeters, the Fluke 87 employs safety connectors
>so that if a test lead pulls out of the meter, it doesn't pose a
>safety hazard with an exposed conductor.
>
>It is rare to see banana plugs used on many multimeters since the days
>of the Simpson 260 and Triplett 630, and these were circa 1965. This
>is because they were responsible for too many accidents. Today, banana
>connectors are rarely seen other than insrumentation targeted at
>accomplishing audio measurments, where it is commonplace.

I'll have to disagree there. A year ago I got an excellent 4 1/2 digit precision DVOM+freq-meter+other things and it had the insulated test lead bananas. Made in France, sold by Mouser. Last week I got some test equipment from Circuit Specialists, enough that they included a free promotional-item DVOM. It too had the shrouded banana plug test lead connections to the DVOM. Normal retail about $39, made in China.

I've used "exposed" banana plug connectors (usually made by Pomona) for the last forty-plus years for many things, including plate supply connecting leads. Not even a tickle from B+ of 300 VDC. It all depends on how the individual handles things and there is no guarantee of not goofing up with the most shrouded of test lead constructions.

>Wish that I could provide information on the connectors that mate with
>the Fluke 87, but without a search I have no idea what these
>connectors are, or who makes them.

Try the Fluke site directly or the link I provided for Circuit Specialists (web-tronics.com), going to the Fluke button. Fluke name on all the various test lead thingies under that button...lots of combinations.

>Even my cheap little Wavetek 5XL employs connectors of the shrouded
>gendre, and while you probably can jam a banana plug into them (or a
>twisted paper clip for that matter), you would negate the safety
>features of the shrouded connector design and in some applications
>their use would not only be unsafe but illegal.

With the terribly high voltages of today's circuitry (30 VDC), I don't think many are going to off themselves even by grabbing the metal of banana plugs instead of the insulated body.

If in doubt, wear linesman's gloves. :-)

Len Anderson
retired (from regular hours) electronic engineer person

519. Dipole centre cap

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-21 16:58:22 UTC
From: WL2Know <chris-loz@NOSPAM.freeserve.co.uk>
Message-ID: <EcyPb.22724$OA3.7088002@newsfep2-win.server.ntli.net>
Source record: 29306

Does anybody know where I can buy dipole centre caps - The only place I know of was shut down a few years ago. Website details are non-illustrated so its hard to tell. Hope you can help.

http://www.vhfman.freeuk.com/radio/images/dipcentre.gif

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.564 / Virus Database: 356 - Release Date: 19/01/2004

520. Datasheet info wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-21 21:34:05 UTC
From: Tull <finnostervig@hotmail.com>
Message-ID: <400ef081$0$290$edfadb0f@dread12.news.tele.dk>
Source record: 29307

Having surfed for a datasheet for a Mitsubishi PA unit named M57741,
all I found was "pay-only" info.

If someone know where to find it, I would like to hear :-)

Vy 73 de OZ2FOE

521. Re: Dipole centre cap

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-21 22:42:20 UTC
From: White Rover <deltapapa1@hotmail.com>
Message-ID: <hfDPb.9$tu6.6@newsfep1-gui.server.ntli.net>
Source record: 29308

try http://www.moonrakerukltd.com/ I got one from here

"WL2Know" <chris-loz@NOSPAM.freeserve.co.uk> wrote in message
news:EcyPb.22724$OA3.7088002@newsfep2-win.server.ntli.net...
> Does anybody know where I can buy dipole centre caps - The only place I
know
> of was shut down a few years ago. Website details are non-illustrated so
its
> hard to tell. Hope you can help.
>
> http://www.vhfman.freeuk.com/radio/images/dipcentre.gif
>
>
> ---
> Outgoing mail is certified Virus Free.
> Checked by AVG anti-virus system (http://www.grisoft.com).
> Version: 6.0.564 / Virus Database: 356 - Release Date: 19/01/2004
>
>

522. Re: Datasheet info wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-21 23:01:10 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.00000020.00126bd7@btinternet.com>
Source record: 29309

Hi,

> Having surfed for a datasheet for a Mitsubishi PA unit named M57741,
> all I found was "pay-only" info.
>
> If someone know where to find it, I would like to hear :-)

OM LA8AK seems to know a thing or two about how to use the M57741,
so you could try this page of his site.

http://home.online.no/~la8ak/d25.htm

73 de Joe, G3LLV

523. Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-21 23:26:14 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <100u2kvskpbroc8@corp.supernews.com>
Source record: 29310
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

Over the last few years I've acquired quite a few consumer electronincs pcbs including TVs, VCRs, stereos, etc, so when I discovered that I needed a tantalum to repair some test equipment I was going to salvage a tantalum. I couldn't find one anywhere, so I assume they're too expensive or too unrelaible for high end consumer electronics. A couple of the boards were from my personal stuff purchased new. One example is a MGA Mitsubishi rear projection TV that operated flawlessly for nearly 20 years of daily use. Most of my test equipment comes from hamfests and is surplus after becoming obsolete and non-operative in less than 20 years. That leads me to wonder what the real story is behind tantalum capacitors. What do the experts have to say?
tnx
hank wd5jfr

524. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 00:16:26 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <400F16CC.1D641A7@rica.net>
Source record: 29311
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

Henry Kolesnik wrote:
>
> Over the last few years I've acquired quite a few consumer electronincs pcbs
> including TVs, VCRs, stereos, etc, so when I discovered that I needed a
> tantalum to repair some test equipment I was going to salvage a tantalum. I
> couldn't find one anywhere, so I assume they're too expensive or too
> unrelaible for high end consumer electronics. A couple of the boards were
> from my personal stuff purchased new. One example is a MGA Mitsubishi rear
> projection TV that operated flawlessly for nearly 20 years of daily use.
> Most of my test equipment comes from hamfests and is surplus after becoming
> obsolete and non-operative in less than 20 years. That leads me to wonder
> what the real story is behind tantalum capacitors. What do the experts have
> to say?
> tnx
> hank wd5jfr

They can have very good characteristics (small size, low esr, high
parallel resistance and good capacitance stability) but have some
strange failure modes if they are misapplied. Digikey sells a great
variety of them. I can seldom justify their cost in production
designs, but use them quite often in one offs.

--
John Popelish

525. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 00:30:41 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <yst8DIAxmxDAFw32@ddwyer.demon.co.uk>
Source record: 29312
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

In article <100u2kvskpbroc8@corp.supernews.com>, Henry Kolesnik
<wd5jfr@oklahoma.net> writes
>Over the last few years I've acquired quite a few consumer electronincs
pcbs
>including TVs, VCRs, stereos, etc, so when I discovered that I needed a
>tantalum to repair some test equipment I was going to salvage a
tantalum. I
>couldn't find one anywhere, so I assume they're too expensive or too
>unrelaible for high end consumer electronics. A couple of the boards
were
>from my personal stuff purchased new. One example is a MGA Mitsubishi
rear
>projection TV that operated flawlessly for nearly 20 years of daily
use.
>Most of my test equipment comes from hamfests and is surplus after
becoming
>obsolete and non-operative in less than 20 years. That leads me to
wonder
>what the real story is behind tantalum capacitors. What do the experts
have
>to say?
>tnx
>hank wd5jfr
>twere always regarded as more reliable than aluminum; however there is
a failure mechanism associated with the source resistance and how close
the operating voltage is to the maximum specified.
Modern aluminum can have very low esr and an adequate alternative to
tantalum.
>

--
ddwyer

526. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 00:38:35 UTC
From: "Watson A.Name \"Watt Sun - the Dark Remover\"" <NOSPAM@dslextreme.com>
Message-ID: <bun60u$5mbs4$2@hades.csu.net>
Source record: 29314
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

John Popelish wrote:

> Henry Kolesnik wrote:
>
>>Over the last few years I've acquired quite a few consumer electronincs pcbs
>>including TVs, VCRs, stereos, etc, so when I discovered that I needed a
>>tantalum to repair some test equipment I was going to salvage a tantalum. I
>>couldn't find one anywhere, so I assume they're too expensive or too
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>>projection TV that operated flawlessly for nearly 20 years of daily use.
>>Most of my test equipment comes from hamfests and is surplus after becoming
>>obsolete and non-operative in less than 20 years. That leads me to wonder
>>what the real story is behind tantalum capacitors. What do the experts have
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>>tnx
>>hank wd5jfr
>
>
> They can have very good characteristics (small size, low esr, high
> parallel resistance and good capacitance stability) but have some
> strange failure modes if they are misapplied. Digikey sells a great
> variety of them. I can seldom justify their cost in production
> designs, but use them quite often in one offs.

So in a production design, what would you use to get the equivalent
performance? An aluminum electrolytic in parallel with a ceramic?

--
@@F@r@o@m@@O@r@a@n@g@e@@C@o@u@n@t@y@,@@C@a@l@,@@w@h@e@r@e@@
###Got a Question about ELECTRONICS? Check HERE First:###
http://users.pandora.be/educypedia/electronics/databank.htm
My email address is whitelisted. *All* email sent to it
goes directly to the trash unless you add NOSPAM in the
Subject: line with other stuff. alondra101 <at> hotmail.com
Don't be ripped off by the big book dealers. Go to the URL
that will give you a choice and save you money(up to half).
http://www.everybookstore.com You'll be glad you did!
Just when you thought you had all this figured out, the gov't
changed it: http://physics.nist.gov/cuu/Units/binary.html
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527. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 00:46:30 UTC
From: John Larkin <jjlarkin@highSNIPlandTHIStechPLEASEnology.com>
Message-ID: <at6u00tsd44udn6hdjujcdso7hnl8547m6@4ax.com>
Source record: 29313
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

On Wed, 21 Jan 2004 17:26:14 -0600, "Henry Kolesnik"
<wd5jfr@oklahoma.net> wrote:

>Over the last few years I've acquired quite a few consumer electronincs pcbs
>including TVs, VCRs, stereos, etc, so when I discovered that I needed a
>tantalum to repair some test equipment I was going to salvage a tantalum. I
>couldn't find one anywhere, so I assume they're too expensive or too
>unrelaible for high end consumer electronics. A couple of the boards were
>from my personal stuff purchased new. One example is a MGA Mitsubishi rear
>projection TV that operated flawlessly for nearly 20 years of daily use.
>Most of my test equipment comes from hamfests and is surplus after becoming
>obsolete and non-operative in less than 20 years. That leads me to wonder
>what the real story is behind tantalum capacitors. What do the experts have
>to say?
>tnx
>hank wd5jfr
>

We often use surface-mount tantalums on high-density, high-cost
boards. They are very reliable (don't dry out like aluminums) if used
carefully, but high peak currents can ignite them, so they are
generally a bad idea for bypassing power rails.

Polymer aluminums (don't dry out) or polymer tantalums (don't explode)
seem like a good idea, but I haven't tried them yet.

I think multilayer ceramics are pushing 100 uF these days.

John

528. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 00:52:48 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <400F1F52.19735827@rica.net>
Source record: 29316
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

"Watson A.Name \"Watt Sun - the Dark Remover\"" wrote:
>
> John Popelish wrote:
(snip)
> > I can seldom justify their cost in production
> > designs, but use them quite often in one offs.
>
> So in a production design, what would you use to get the equivalent
> performance? An aluminum electrolytic in parallel with a ceramic?

A production design usually pays for the engineering necessary to
reduce the need for premium quality components. Your solution is
often a cheaper alternative to a premium quality tantalum.

--
John Popelish

529. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 01:11:44 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <100u8qme63gke65@corp.supernews.com>
Source record: 29315
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

I have a Racal 9301A where a tantalum must have caught on fire because all
that was left was 2 leads, some crisp blackish ash and a little hardened
crust on the pcb where it burned. There's probaby 10 other tants on the
board and one or more are shorted but still intact and I'm trying to find
the bads one/ones with least effort without a schematic. The other unit is
a Wavetek 188-S1257 where a tantalum had a dead short but was intact. I
repalced it with an electrolytic. The cap is on a 15 volt rail where I
think it shorted and took out the regulator. Ireplace the regulator with
what I assumed was a good one out of a new box but it was bad and it put 23
volts on the rail that had a 20 volt rating but no more failed. Sometime I
have good luck.
73
hank wd5jfr
"John Larkin" <jjlarkin@highSNIPlandTHIStechPLEASEnology.com> wrote in
message news:at6u00tsd44udn6hdjujcdso7hnl8547m6@4ax.com...
> On Wed, 21 Jan 2004 17:26:14 -0600, "Henry Kolesnik"
> <wd5jfr@oklahoma.net> wrote:
>
> >Over the last few years I've acquired quite a few consumer electronincs
pcbs
> >including TVs, VCRs, stereos, etc, so when I discovered that I needed a
> >tantalum to repair some test equipment I was going to salvage a tantalum.
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> >couldn't find one anywhere, so I assume they're too expensive or too
> >unrelaible for high end consumer electronics. A couple of the boards
were
> >from my personal stuff purchased new. One example is a MGA Mitsubishi
rear
> >projection TV that operated flawlessly for nearly 20 years of daily use.
> >Most of my test equipment comes from hamfests and is surplus after
becoming
> >obsolete and non-operative in less than 20 years. That leads me to
wonder
> >what the real story is behind tantalum capacitors. What do the experts
have
> >to say?
> >tnx
> >hank wd5jfr
> >
>
> We often use surface-mount tantalums on high-density, high-cost
> boards. They are very reliable (don't dry out like aluminums) if used
> carefully, but high peak currents can ignite them, so they are

> generally a bad idea for bypassing power rails.
>
> Polymer aluminums (don't dry out) or polymer tantalums (don't explode)
> seem like a good idea, but I haven't tried them yet.
>
> I think multilayer ceramics are pushing 100 uF these days.
>
> John
>

530. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 03:09:37 UTC
From: larwe@larwe.com
Message-ID: <608b6569.0401211909.64959f73@posting.google.com>
Source record: 29317
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

> Over the last few years I've acquired quite a few consumer electronincs pcbs
> including TVs, VCRs, stereos, etc, so when I discovered that I needed a

Consumer electronics are costed down to the lowest possible level. If
they can use something cheaper, they WILL use something cheaper. A TV
set or VCR has had people go over the design hundreds of times with
BOMs and catalogs, checking to see if they can shave a penny here or a
penny there.

Computer equipment is a good source for tantalums - motherboards, hard
drive PCBAs, etc. Of course, it will be surface-mount :)

531. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 05:31:01 UTC
From: averyfineman@aol.com
Message-ID: <20040122003101.23171.00003590@mb-m05.aol.com>
Source record: 29318

In article <100u2kvskpbroc8@corp.supernews.com>, "Henry Kolesnik"
<wd5jfr@oklahoma.net> writes:

>Over the last few years I've acquired quite a few consumer electronincs pcbs
>including TVs, VCRs, stereos, etc, so when I discovered that I needed a
>tantalum to repair some test equipment I was going to salvage a tantalum. I
>couldn't find one anywhere, so I assume they're too expensive or too
>unrelaible for high end consumer electronics. A couple of the boards were
>from my personal stuff purchased new. One example is a MGA Mitsubishi rear
>projection TV that operated flawlessly for nearly 20 years of daily use.
>Most of my test equipment comes from hamfests and is surplus after becoming
>obsolete and non-operative in less than 20 years. That leads me to wonder
>what the real story is behind tantalum capacitors.

Tantalum capacitors became a component item about 45 (or so) years
ago and originally favored in spacecraft and aircraft because they could
contain lots of electrostatic storage in a small space with ligher weight.
That was when PCBs were relatively new, quite new in spacecraft
electronics.

It hasn't been until the last decade or so that the cost of tantalum
capacitors has approached the level of improved electrolytic
capacitors of the same value. Tantalums are still relatively
expensive but they are good for SMT due to their smaller size;
its a trade-off between cost and overall system size in that case.

Inherent problems in tanatalum capacitors have been improved
since their initial debut as a component but so have electrolytic
capacitors and their manufacturing methods. One can purchase
FARAD-value low-voltage electrolytics now where once it was
not possible unless one had a room to put them in.

Len Anderson
retired (from regular hours) electronic engineer person

532. Re: simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 06:09:37 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <100uq8r4mrncub1@corp.supernews.com>
Source record: 29319

I was just looking at my 2002 handbook, and there was a circuit for a synchronous detector, in the receiver chapter. It wasn't "simple", but it was there. It also uses NE604s (the companion chip to the '602), which might not be available any more.

"Pete Beals" <PBeal@noaddress.com> wrote in message news:100j8u6cdktsb9f@corp.supernews.com...
> Has anyone implemented a simple sync detector that uses as few parts as
> possible?
>
> Thanks
>
> Pete

533. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 06:21:31 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <100uqv8fl013fc7@corp.supernews.com>
Source record: 29320
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

I wouldn't assume that just because your test equipment comes to you broken is a result of tantalum caps -- perhaps your sample is skewed by buying at hamfests instead of burgling active technology companies? Maybe if you only acquired your home entertainment equipment from dumpsters you'd conclude that aluminum electrolytics are bad?

I recently escaped from a company that does aero (but not space) systems. They get mounted on aircraft and are expected to survive being shipped in an unpressurized cargo hold at 50000 feet. At that altitude a wet aluminum electrolytic will dry out, but a tantalum will be fine. There are even wet-slug tantalums for high-altitude applications that will not dry out at these altitudes.

The problems with tantalum are their fragility (we've had exploding caps on our boards, with one manufacturer's part being fine and another being horrid), cost, and the relative scarcity of tantalum. Does anyone remember the Great Tantalum Shortage of a couple of years ago? One of the big tantalum supplying regions is central Africa, and a combination of wars reducing supply and increased demand led to some supply problems for a while -- I remember that at least one of the manufacturers even came out with a Niobium cap as a substitute.

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:100u2kvskpbroc8@corp.supernews.com...
> Over the last few years I've acquired quite a few consumer electronincs
pcbs
> including TVs, VCRs, stereos, etc, so when I discovered that I needed a
> tantalum to repair some test equipment I was going to salvage a tantalum.
I
> couldn't find one anywhere, so I assume they're too expensive or too
> unrelaible for high end consumer electronics. A couple of the boards were
> from my personal stuff purchased new. One example is a MGA Mitsubishi
rear
> projection TV that operated flawlessly for nearly 20 years of daily use.
> Most of my test equipment comes from hamfests and is surplus after
becoming
> obsolete and non-operative in less than 20 years. That leads me to wonder
> what the real story is behind tantalum capacitors. What do the experts
have
> to say?
> tnx
> hank wd5jfr
>
>

534. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 07:25:58 UTC
From: remove_ok1sip@atlas.cz
Message-ID: <5f5159fa.0401212325.d64168f@posting.google.com>
Source record: 29321
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

Hi all,
tantalum caps seem to be too expensive for consumer-grade equipment.
They contain pricey material - silver and, of course, tantalum, so
making them cheaper is impossible. AFAIK they are widely used in
military-grade equipment, where the price is not an issue. Their main
advantages are a longer life (they do not dry out nor leak) and a
bigger temperature range (frost resistance).
About using cheap parts in consumer electronics: At least 80 percent
of failures of certain types of TV sets were caused by dried-out
aluminum caps. The good practice when repairing these sets was: first
check all electrolyte caps by adding a good one in parralel. It was
successful very often.

BR from Ivan

535. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 07:54:58 UTC
From: Jeroen <Jeroen.Belleman@cern.ch>
Message-ID: <bunvkj$k7e$1@sunnews.cern.ch>
Source record: 29322
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

John Larkin wrote:

> I think multilayer ceramics are pushing 100 uF these days.

Yes, but alas, only with zero volts across them. Capacitance
drops precipitously with DC bias. For a cap with Y5V dielectric,
at half the rated DC voltage, there's only 10% of the initial
capacitance left. Most manufacturers don't tell you.

536. Re: Eagle PCB layout question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 12:07:13 UTC
From: David Harmon <source@netcom.com>
Message-ID: <40bdbbc3.352831275@news.west.earthlink.net>
Source record: 29323

On Tue, 20 Jan 2004 10:58:50 +0000 in rec.radio.amateur.homebrew, Paul Burridge <pb@osiris1.notthisbit.co.uk> was alleged to have written:
>The "helpfile" says you can move the components to the board, position
>them, click on 'ratsnest' to get "airwires" to appear between the
>relevant nodes, then do the tools/auto bit and get the defaults you
>specify, then click "go" and the routing is automatically done.
>Unfortunately, however, no airwires appear,

It is important to use the "net" icon/command and not "wire" on the schematic to connect your signals.

537. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 12:51:42 UTC
From: Fred <fred@abuse.com>
Message-ID: <400fc77e$0$224$fa0fcedb@lovejoy.zen.co.uk>
Source record: 29324
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

"Jeroen" <Jeroen.Belleman@cern.ch> wrote in message
news:bunvkj$k7e$1@sunnews.cern.ch...
> John Larkin wrote:
>
> > I think multilayer ceramics are pushing 100 uF these days.
>
> Yes, but alas, only with zero volts across them. Capacitance
> drops precipitously with DC bias. For a cap with Y5V dielectric,
> at half the rated DC voltage, there's only 10% of the initial
> capacitance left. Most manufacturers don't tell you.
>

I didn't think it was quite as bad as that. Also very temperature
dependent. These type of ceramics are also pyroelectric as well as being
piezoelectric!

538. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 13:29:19 UTC
From: Spehro Pefhany <speffSNIP@interlogDOTyou.knowwhat>
Message-ID: <mpjv00556rma881l5t17nh5vurdp3sq25t@4ax.com>
Source record: 29325
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

On Thu, 22 Jan 2004 05:05:22 -0800, the renowned Bill Turner
<noway@nohow.com> wrote:

>On 21 Jan 2004 19:09:37 -0800, larwe@larwe.com (Lewin A.R.W. Edwards)
>wrote:
>
>>Consumer electronics are costed down to the lowest possible level. If
>>they can use something cheaper, they WILL use something cheaper. A TV
>>set or VCR has had people go over the design hundreds of times with
>>BOMs and catalogs, checking to see if they can shave a penny here or a
>>penny there.
>
>_____
>
>Well, maybe. Any manufacturer who has been nailed with thousands of
>dollars in warranty costs caused by saving a penny might disagree with
>your statement. I've seen it happen.

Caused by bad engineering (or purchasing), I would say.

Best regards,
Spehro Pefhany
--
"it's the network..." "The Journey is the reward"
speff@interlog.com Info for manufacturers: http://www.trexon.com
Embedded software/hardware/analog Info for designers: http://www.speff.com

539. Re: Rig to PC interface with TS-140s?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 14:49:46 UTC
From: fazamy@aol.com
Message-ID: <20040122094946.22985.00000527@mb-m04.aol.com>
Source record: 29326

Thanks for the help. I bought an interface from PIEXX, installed it, and it works. Right now, it is used for my logging program. I'm awaiting mail order parts to use the keyboard to produce cw (and rtty I think.)

I've been out of the building and technical loop for years. (Just been operating.) So the questions I've been asking might be considered dumb. So I'm relearning, researching, reading etc. and planning projects. The marriage of the pc and radio is another level I've got to familiarize myself with.

So far retirement is great :-)

73,
Evan
KB2AMY

540. Re: Best antenna (preferrably wire)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 15:07:24 UTC
From: mcalhoun@ksu.edu
Message-ID: <buoovc$c1v@unix2.cc.ksu.edu>
Source record: 29327
Cross-posted to: rec.radio.amateur.antenna,alt.radio.amateur,rec.radio.amateur.homebrew,rec.radio.amateur.misc

>> It's quite easy: your best bet is the maximum length of wire you can keep
>> in your backyard AND as high up in the air as you can afford (trees,
>> towers, chimneys etc.)

>Hmmmmm, my back yard is ten acres. :-)

Until wind toppled the tree at one end, my "dipole" went 275 feet SW
and 250 feet NE of the "center" feed point. Height was about 45 feet.

Someone once commented that the reason I "got out" so well was that,
by the time the RF reached the end of my antenna, it was already a
significant part of the distance toward its destination!-)

--Myron.
--
Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge
PhD EE (retired). "Barbershop" tenor. CDL(PTXS). W0PBV. (785) 539-4448
NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle, Pistol)

541. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 16:01:30 UTC
From: John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com>
Message-ID: <spsv00djdod7vrhguib5stti0q8k99djkk@4ax.com>
Source record: 29328
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

On Thu, 22 Jan 2004 08:54:58 +0100, Jeroen <Jeroen.Belleman@cern.ch>
wrote:

>John Larkin wrote:
>
>> I think multilayer ceramics are pushing 100 uF these days.
>
>Yes, but alas, only with zero volts across them. Capacitance
>drops precipitously with DC bias. For a cap with Y5V dielectric,
>at half the rated DC voltage, there's only 10% of the initial
>capacitance left. Most manufacturers don't tell you.

Which opens up the possibility of using them as parametric amplifiers
or modulators. I have a paper somewhere that uses the nonlinearity of
ceramic caps to make a nonlinear transmission line - a shock line -
that sharpens the rising edge speed of kilovolt pulses.

John

542. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 16:06:18 UTC
From: John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com>
Message-ID: <c0tv0013s1ate0ods8264p7gur0o0fecu8@4ax.com>
Source record: 29329
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

On Wed, 21 Jan 2004 22:21:31 -0800, "Tim Wescott"
<tim@wescottnospamdesign.com> wrote:

>I wouldn't assume that just because your test equipment comes to you broken
>is a result of tantalum caps -- perhaps your sample is skewed by buying at
>hamfests instead of burgling active technology companies? Maybe if you only
>acquired your home entertainment equipment from dumpsters you'd conclude
>that aluminum electrolytics are bad?
>
>I recently escaped from a company that does aero (but not space) systems.
>They get mounted on aircraft and are expected to survive being shipped in an
>unpressurized cargo hold at 50000 feet. At that altitude a wet aluminum
>electrolytic will dry out, but a tantalum will be fine. There are even
>wet-slug tantalums for high-altitude applications that will not dry out at
>these altitudes.
>

Wet-slug tants are expensive (do they still have silver cases?) but
don't blow up like the dry ones. The dry slugs coat the sintered
tantalum (fuel) with MnO2 (oxidizer).

>The problems with tantalum are their fragility (we've had exploding caps on
>our boards, with one manufacturer's part being fine and another being
>horrid), cost, and the relative scarcity of tantalum.

This is really erratic. One spool of tants will be bombs, another
can't be made to fail by deliberate abuse.

John

543. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 17:34:31 UTC
From: "Dr. Anton.T. Squeegee" <SpammersArePondScum@dev.null>
Message-ID: <MPG.1a79a982cc75a507989c17@192.168.42.131>
Source record: 29330
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

In article <100u2kvskpbroc8@corp.supernews.com>, wd5jfr@oklahoma.net
says...

<snippety>

> from my personal stuff purchased new. One example is a MGA Mitsubishi rear
> projection TV that operated flawlessly for nearly 20 years of daily use.
> Most of my test equipment comes from hamfests and is surplus after becoming
> obsolete and non-operative in less than 20 years. That leads me to wonder
> what the real story is behind tantalum capacitors. What do the experts have
> to say?

The ONLY problems I've ever had with tantalums are where:

(1) The part was defective from the manufacturer.

(2) The voltage rating was consistently exceeded.

(3) The thing was installed backwards (reverse polarity).

I have no less than five Tektronix O-scopes here, all vintage
late-70's to mid-80's. This means not one of them is less than 20 years
old. They all use lots of tantalums, and they all work great, but then
again Tek was (in those days) proud of what they put out, and was most
definitely engineer-driven (which means at least a 20% 'fudge factor'
built into everything they made).

Tantalum caps are very stable and durable, but they are much more
costly than aluminum types. In consumer electronics, the manufacturers
will try to shave every penny they can off the cost of the design, often
contrary to good common (engineering) sense.

Such considerations are (usually) not so critical when it comes to
non-consumer stuff.

Keep the peace(es).

--
Dr. Anton Squeegee, Director, Dutch Surrealist Plumbing Institute
(Known to some as Bruce Lane, KC7GR)
kyrrin a/t bluefeathertech d-o=t c&o&m
Motorola Radio Programming & Service Available -
http://www.bluefeathertech.com/rf.html
"Quando Omni Flunkus Moritati" (Red Green)

544. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 17:51:29 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <10103cpmrmfgn8c@corp.supernews.com>
Source record: 29331
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

"John Larkin" <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> wrote in
message news:c0tv0013s1ate0ods8264p7gur0o0fecu8@4ax.com...
> On Wed, 21 Jan 2004 22:21:31 -0800, "Tim Wescott"
> <tim@wescottnospamdesign.com> wrote:
>

<snip>

> Wet-slug tants are expensive (do they still have silver cases?) but
> don't blow up like the dry ones. The dry slugs coat the sintered
> tantalum (fuel) with MnO2 (oxidizer).

Boy are they ever. I have some surplus ones, but they have cases that are
more of a silver-gray than that nice yellowish-white look you get from
silver-plated connectors. These are special parts, but if you want a
generally high-performance cap in a (relatively) small package they're hard
to beat.

I worked for a while on a project to make a power-wire networking device.
During testing I accidentally dragged a scope ground across a circuit that
was referenced to the 115V power line, thereby exceeding the tantalum cap's
voltage rating -- er -- "slightly". Little pieces of flaming capacitors
bounced around the lab. After that all of my digital logic (3.3V and lower)
coworkers _never_ messed with my bench.

> >The problems with tantalum are their fragility (we've had exploding caps
on
> >our boards, with one manufacturer's part being fine and another being
> >horrid), cost, and the relative scarcity of tantalum.
>
> This is really erratic. One spool of tants will be bombs, another
> can't be made to fail by deliberate abuse.

Interesting. I'll have to remember that. Thanks. In any case when
designing with _any_ electrolytic capacitor it's best to use specify a cap
for 20-50% higher voltage than what you think it's ever going to see,
particularly because many voltage regulators overshoot on power up and the
output cap sees more voltage than you think.

> John
>
>
>

545. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 18:12:20 UTC
From: Ken Finney <kenneth.c.finney@boeing.com>
Message-ID: <HrwL8I.7Lw@news.boeing.com>
Source record: 29334
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

"John Larkin" <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> wrote in
message news:c0tv0013s1ate0ods8264p7gur0o0fecu8@4ax.com...
> On Wed, 21 Jan 2004 22:21:31 -0800, "Tim Wescott"
> <tim@wescottnospamdesign.com> wrote:
>
> >I wouldn't assume that just because your test equipment comes to you
broken
> >is a result of tantalum caps -- perhaps your sample is skewed by buying
at
> >hamfests instead of burgling active technology companies? Maybe if you
only
> >acquired your home entertainment equipment from dumpsters you'd conclude
> >that aluminum electrolytics are bad?
> >
> >I recently escaped from a company that does aero (but not space) systems.
> >They get mounted on aircraft and are expected to survive being shipped in
an
> >unpressurized cargo hold at 50000 feet. At that altitude a wet aluminum
> >electrolytic will dry out, but a tantalum will be fine. There are even
> >wet-slug tantalums for high-altitude applications that will not dry out
at
> >these altitudes.
> >
>
> Wet-slug tants are expensive (do they still have silver cases?) but
> don't blow up like the dry ones. The dry slugs coat the sintered
> tantalum (fuel) with MnO2 (oxidizer).
>

< snip >

Silver cased wet slug tantalums DO explode, most contracts that
allow the use of wet slugs require the use of tantalum cased parts.

546. How do I eliminate noise from a pc monitor?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 18:13:07 UTC
From: fazamy@aol.com
Message-ID: <20040122131307.11385.00000515@mb-m05.aol.com>
Source record: 29332

I have a noise source. It is from a pc monitor sharing the same desk as my rig, and it is connected to the pc that is linked to my rig via of ribbon cable to a comm port. The noise doesn't cover an entire band. It just is on one frequency and harmonics of that frequency.

What are the remedies.

73,
KB2AMY

547. Re: How do I eliminate noise from a pc monitor?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 18:25:45 UTC
From: Keyboard In The Wilderness <KIYW@zilch.net>
Message-ID: <JAUPb.57035$zs4.3458@fed1read01>
Source record: 29333

```
Try this URL:
http://ac6v.com/comprfi.htm

--
73 From The Wilderness Keyboard
-----------------------
"FAZAMY" <fazamy@aol.com> wrote in message
news:20040122131307.11385.00000515@mb-m05.aol.com...
> I have a noise source. It is from a pc monitor sharing the same desk as
my
> rig, and it is connected to the pc that is linked to my rig via of ribbon
cable
> to a comm port. The noise doesn't cover an entire band. It just is on
one
> frequency and harmonics of that frequency.
>
> What are the remedies.
>
> 73,
> KB2AMY
>
```

548. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 18:37:17 UTC
From: fpm@u.washington.edu
Message-ID: <bup58t$lf4$1@nntp3.u.washington.edu>
Source record: 29335
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

In article <MPG.1a79a982cc75a507989c17@192.168.42.131>,
Dr. Anton.T. Squeegee <SpammersArePondScum@dev.null> wrote:
>In article <100u2kvskpbroc8@corp.supernews.com>, wd5jfr@oklahoma.net
>says...
>
> <snippety>
>
>> from my personal stuff purchased new. One example is a MGA Mitsubishi rear
>> projection TV that operated flawlessly for nearly 20 years of daily use.
>> Most of my test equipment comes from hamfests and is surplus after becoming
>> obsolete and non-operative in less than 20 years. That leads me to wonder
>> what the real story is behind tantalum capacitors. What do the experts have
>> to say?
>
> The ONLY problems I've ever had with tantalums are where:
>
> (1) The part was defective from the manufacturer.
>
> (2) The voltage rating was consistently exceeded.
>
> (3) The thing was installed backwards (reverse polarity).
>
> I have no less than five Tektronix O-scopes here, all vintage
>late-70's to mid-80's. This means not one of them is less than 20 years
>old. They all use lots of tantalums, and they all work great, but then
>again Tek was (in those days) proud of what they put out, and was most
>definitely engineer-driven (which means at least a 20% 'fudge factor'
>built into everything they made).
>
> Tantalum caps are very stable and durable, but they are much more
>costly than aluminum types. In consumer electronics, the manufacturers
>will try to shave every penny they can off the cost of the design, often
>contrary to good common (engineering) sense.
>
> Such considerations are (usually) not so critical when it comes to
>non-consumer stuff.

Tektronix was, during that time, strongly discouraging all new designs from
using tantalums. IIRC they had been taken to court over a case in which
a 465 'scope (the original, not the plastic follow-ons) had spontaneously
ignited and had resulted in an expensive fire. Forensics revealed that
a tantalum power-supply bypass cap had started the conflagration. The
drive to reduce tantalum usage was driven primarily by this liability issue,

more than component cost. If you wanted to use a tantalum, you had to justify its usage to the component/design review committees -- which wasn't difficult if you had good reasons and your design was solid.

-frank
(ex-Tekie)
--

549. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 19:01:58 UTC
From: jimp@specsol-spam-sux.com
Message-ID: <bup6n6$9f0$1@mail.specsol.com>
Source record: 29336
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

In rec.radio.amateur.homebrew Ken Finney <kenneth.c.finney@boeing.com> wrote:

> Silver cased wet slug tantalums DO explode, most contracts that
> allow the use of wet slugs require the use of tantalum cased parts.

Some years ago I wandered into one of the design labs to ask some questions about a new thingy we were doing.

On a bench was a metal trash can with wires leading to a power supply, thermometer, and a chart recorder.

"What's all this", I ask.

"Getting some real data on stressing tantalums. The trash can is a blast shield just in case" was the answer.

Just after the guy running the test uttered the words "looks like nothing bad is going to happen" the cap exploded with the trash can acting as a megaphone for the bang and director for the shrapnel; everyone around hit the deck.

We got off the floor and looked up to the acoustical ceiling where there was capacitor pieces and an alligator clip embedded therein.

When the guy running the test said "Maybe we had better rethink this design", I decided to go back to my lab and come back on a better day.

We continued to use tantalums (aerospace), but there were a lot more explosions in the lab to make sure they didn't happen on the shipped product.

--
Jim Pennino

Remove -spam-sux to reply.

550. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 19:09:12 UTC
From: mikea@mikea.ath.cx
Message-ID: <bup74oaot1@puck.litech.org>
Source record: 29337
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

In <bup6n6$9f0$1@mail.specsol.com> (rec.radio.amateur.homebrew), jimp@specsol-spam-sux.com wrote:

> Some years ago I wandered into one of the design labs to ask some questions
> about a new thingy we were doing.

> On a bench was a metal trash can with wires leading to a power supply,
> thermometer, and a chart recorder.

[snip]

> We got off the floor and looked up to the acoustical ceiling where there
> was capacitor pieces and an alligator clip embedded therein.

> When the guy running the test said "Maybe we had better rethink this
> design", I decided to go back to my lab and come back on a better day.

> We continued to use tantalums (aerospace), but there were a lot more
> explosions in the lab to make sure they didn't happen on the shipped
> product.

As someone who had a big (non-Tantalum) filter cap explode _right_
next to my one-and-only, precious, irreplaceable face, I approve
of this strategy. It sure as blazes beats having a cap in the power
supply drawer imbed itself in the ceiling, missing a cheekbone by
about 1/4", and it also beats having to go through hundreds of power
supplies in the comm center, looking for bulging caps.

We found -- and replaced -- about a thousand. I'm still pretty antsy
about working on anything with filter caps in it, and tend to put a
straight-edge along the can to see if it's bulging. If it _is_, I
just replace it.

--
... at the end of the conversation, the guy said "Thanks a lot for
reporting this. If you need more details on our anti-spam policies,
just hit 'refresh' on the URL you reported."
-- Willondon Donovan in nanae

551. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 19:40:59 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <J$UCXKALdCEAFwY1@ddwyer.demon.co.uk>
Source record: 29338
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

In article <5f5159fa.0401212325.d64168f@posting.google.com>, OK1SIP
<remove_ok1sip@atlas.cz> writes
>Hi all,
>tantalum caps seem to be too expensive for consumer-grade equipment.
>They contain pricey material - silver and, of course, tantalum, so
>making them cheaper is impossible. AFAIK they are widely used in
>military-grade equipment, where the price is not an issue. Their main
>advantages are a longer life (they do not dry out nor leak) and a
>bigger temperature range (frost resistance).
>About using cheap parts in consumer electronics: At least 80 percent
>of failures of certain types of TV sets were caused by dried-out
>aluminum caps. The good practice when repairing these sets was: first
>check all electrolyte caps by adding a good one in parralel. It was
>successful very often.
>
>BR from Ivan
The observations are consistent with the view that electrolytic
capacitor reliability decreases within a short time most other
components have failure modes that take a much longer time to reach the
end of the bathtub.
--
ddwyer

552. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 19:44:51 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <z$6M3VAzgCEAFw+P@ddwyer.demon.co.uk>
Source record: 29339
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

```
In article <400fc77e$0$224$fa0fcedb@lovejoy.zen.co.uk>, Fred
<fred@abuse.com> writes
>
>"Jeroen" <Jeroen.Belleman@cern.ch> wrote in message
>news:bunvkj$k7e$1@sunnews.cern.ch...
>> John Larkin wrote:
>>
>> > I think multilayer ceramics are pushing 100 uF these days.
>>
>> Yes, but alas, only with zero volts across them. Capacitance
>> drops precipitously with DC bias. For a cap with Y5V dielectric,
>> at half the rated DC voltage, there's only 10% of the initial
>> capacitance left. Most manufacturers don't tell you.
>>
The high k types vary to +-10% and +20-80% from memory if full temp is
allowed for.
High K doped with piezo material, they can be heard to click if hit with
a square wave.
```

553. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 19:48:49 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <6fuO$gAhkCEAFw9r@ddwyer.demon.co.uk>
Source record: 29340
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

In article <bup74oaot1@puck.litech.org>, Mike Andrews
<mikea@mikea.ath.cx> writes
>
>> Some years ago I wandered into one of the design labs to ask some questions
>> about a new thingy we were doing.
>
>> On a bench was a metal trash can with wires leading to a power supply,
>> thermometer, and a chart recorder.
>
>[snip]
>
>> We got off the floor and looked up to the acoustical ceiling where there
>> was capacitor pieces and an alligator clip embedded therein.
>
>> When the guy running the test said "Maybe we had better rethink this
>> design", I decided to go back to my lab and come back on a better day.
>
>> We continued to use tantalums (aerospace), but there were a lot more
>> explosions in the lab to make sure they didn't happen on the shipped
>> product.
Read the data books carefully. There is a formulae relating source
resistance, proof voltage/actual voltage and capacitance.
Note early Plessey button tantalum (very reliable) incorporated liquid
conc nitric? dont blow them up!

--
ddwyer

554. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 20:10:46 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <kvHJjuAG5CEAFwcK@ddwyer.demon.co.uk>
Source record: 29342
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

In article <c0tv0013s1ate0ods8264p7gur0o0fecu8@4ax.com>, John Larkin
<jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> writes
>
>Wet-slug tants are expensive (do they still have silver cases?) but
>don't blow up like the dry ones. The dry slugs coat the sintered
>tantalum (fuel) with MnO2 (oxidizer).
>As I mentioned elsewhere some wet slug used conc nitric as the
electroyte (from memory 35 years ago) but very reliable.

--
ddwyer

555. Re: Piezoelectric caps (was Tantalum)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 20:24:01 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1010can8419d60b@corp.supernews.com>
Source record: 29341
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

I've seen more than one problem with high-value ceramics causing problems during operational vibe tests because of microphonics. In our case it usually seems to be the vibration causing capacitance change rather than true piezoelectricity, but it happens in any case. The last one that I remember we replaced the ceramic caps with back-to-back tantalums, in fact. Worked like a charm.

"ddwyer" <dd@ddwyer.demon.co.uk> wrote in message
news:z$6M3VAzgCEAFw+P@ddwyer.demon.co.uk...
> In article <400fc77e$0$224$fa0fcedb@lovejoy.zen.co.uk>, Fred
> <fred@abuse.com> writes
> >
> >"Jeroen" <Jeroen.Belleman@cern.ch> wrote in message
> >news:bunvkj$k7e$1@sunnews.cern.ch...
> >> John Larkin wrote:
> >>
> >> > I think multilayer ceramics are pushing 100 uF these days.
> >>
> >> Yes, but alas, only with zero volts across them. Capacitance
> >> drops precipitously with DC bias. For a cap with Y5V dielectric,
> >> at half the rated DC voltage, there's only 10% of the initial
> >> capacitance left. Most manufacturers don't tell you.
> >>
> The high k types vary to +-10% and +20-80% from memory if full temp is
> allowed for.
> High K doped with piezo material, they can be heard to click if hit with
> a square wave.
>
>

556. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 21:02:07 UTC
From: John Woodgate <jmw@jmwa.demon.contraspam.yuk>
Message-ID: <RhiBe7DPpDEAFwLR@jmwa.demon.co.uk>
Source record: 29343
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

I read in sci.electronics.design that Bill Turner <noway@nohow.com>
wrote (in <7hiv00l0dpa8i70dt2r91tf0b3v9ja5or3@4ax.com>) about 'Tantalum
caps.', on Thu, 22 Jan 2004:
>>Consumer electronics are costed down to the lowest possible level. If
>>they can use something cheaper, they WILL use something cheaper. A TV
>>set or VCR has had people go over the design hundreds of times with
>>BOMs and catalogs, checking to see if they can shave a penny here or a
>>penny there.
>
>_____
>
>Well, maybe. Any manufacturer who has been nailed with thousands of
>dollars in warranty costs caused by saving a penny might disagree with
>your statement. I've seen it happen.

Epidemic faults were, in my experience, rarely caused by cost-reduction
but either by component manufacturing faults (noisy tantalum caps and
unreliable fuses, for example) or by unrecognized 'gotchas' in the
original circuits (high-Q series resonance in a loudspeaker crossover
filter).
--
Regards, John Woodgate, OOO - Own Opinions Only.
The good news is that nothing is compulsory.
The bad news is that everything is prohibited.
http://www.jmwa.demon.co.uk Also see http://www.isce.org.uk

557. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 21:11:27 UTC
From: John Woodgate <jmw@jmwa.demon.contraspam.yuk>
Message-ID: <zgOZeQE$xDEAFwOP@jmwa.demon.co.uk>
Source record: 29344
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

I read in sci.electronics.design that OK1SIP <remove_ok1sip@atlas.cz>
wrote (in <5f5159fa.0401212325.d64168f@posting.google.com>) about
'Tantalum caps.', on Wed, 21 Jan 2004:

>tantalum caps seem to be too expensive for consumer-grade equipment.
>They contain pricey material - silver and, of course, tantalum,

No. We used quite a lot of tantalum 'bead' caps in consumer audio and TV
until we found the problems they have and we could get aluminium
electrolytics 'with no added salt', so they didn't leak and were much
more reliable. I still have some boards with them fitted.

The problem with Al caps drying out is mainly that people let them get
too hot. They were rated at 75 C or 85 C *max. ambient*, not
'temperature rise'. It's still a problem; we have 'designer' set-top
boxes with no ventilation, and service people put 130 C rated Al caps in
them as replacements; 105 C rated is often not good enough!
--
Regards, John Woodgate, OOO - Own Opinions Only.
The good news is that nothing is compulsory.
The bad news is that everything is prohibited.
http://www.jmwa.demon.co.uk Also see http://www.isce.org.uk

558. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 21:32:05 UTC
From: "Dr. Anton.T. Squeegee" <SpammersArePondScum@dev.null>
Message-ID: <MPG.1a79e12c6a2459ae989c19@192.168.42.131>
Source record: 29345
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

In article <bup58t$lf4$1@nntp3.u.washington.edu>, fpm@u.washington.edu
says...

Hi, Frank,

> Tektronix was, during that time, strongly discouraging all new designs from
> using tantalums. IIRC they had been taken to court over a case in which
> a 465 'scope (the original, not the plastic follow-ons) had spontaneously
> ignited and had resulted in an expensive fire. Forensics revealed that
> a tantalum power-supply bypass cap had started the conflagration. The
> drive to reduce tantalum usage was driven primarily by this liability issue,
> more than component cost. If you wanted to use a tantalum, you had to
> justify its usage to the component/design review committees -- which wasn't
> difficult if you had good reasons and your design was solid.

Wow! I didn't know this... Thanks for the neat bit of history.

I will add that most of the tantalums I'm finding in my gear are
localized filters for the power-input traces in 7000-series O-scope
plug-ins.

Everything still works great, though. ;-)

--
Dr. Anton Squeegee, Director, Dutch Surrealist Plumbing Institute
(Known to some as Bruce Lane, KC7GR)
kyrrin a/t bluefeathertech d-o=t c&o&m
Motorola Radio Programming & Service Available -
http://www.bluefeathertech.com/rf.html
"Quando Omni Flunkus Moritati" (Red Green)

559. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 21:49:22 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <1010hb9gigfli91@corp.supernews.com>
Source record: 29346
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

Frank Miles wrote:
>
> Tektronix was, during that time, strongly discouraging all new designs from
> using tantalums. IIRC they had been taken to court over a case in which
> a 465 'scope (the original, not the plastic follow-ons) had spontaneously
> ignited and had resulted in an expensive fire. Forensics revealed that
> a tantalum power-supply bypass cap had started the conflagration. The
> drive to reduce tantalum usage was driven primarily by this liability issue,
> more than component cost. If you wanted to use a tantalum, you had to
> justify its usage to the component/design review committees -- which wasn't
> difficult if you had good reasons and your design was solid.
>
> -frank
> (ex-Tekie)

I was there at the time, too. Tantalums were essentially verboten unless the source impedance supplying the tantalum cap was at least 3 ohms/volt. That's because it was found that the short circuit failure mode was aggravated by high inrush current, so the source current had to be limited. One of the chief reasons we had been using tantalums in the first place is that they have very good bypass characteristics up to quite high frequencies -- so a single capacitor could handle a very wide range. When the source impedance was high, the capacitor didn't need to be so good in the first place, and of course adding a physical resistor in series with a supply bypass pretty much defeats the whole purpose. Consequently, the 3 ohms/volt rule pretty much eliminated tantalums as a viable choice for most applications. Fortunately, it was at just about the same time that very big improvements were made in aluminum capacitor technology. As the aluminums shrunk in size, they became much better at bypassing higher frequencies. So they took over from tantalums pretty rapidly. There was a glitch for a while, though -- boards were being cleaned with Freon at the time, and it was discovered that Freon could migrate past the seals on some or most aluminum capacitors and corrode the aluminum, leading to poor reliability. The solution adoped by some manufacturers was to add a rubber seal at the lead end of the capacitor. That increased the length of the leads between the outside of the capacitor and the inner body, increasing the lead inductance and decreasing the capacitor's high frequency bypass capability. . . but that's just another example of the day-to-day problems an engineer faces and has to overcome.

Incidentally, I got a Tek 1502 TDR on eBay not long ago. It had a shorted tanalum power supply bypass capacitor.

A couple of other anecdotes -- A time base plugin I designed had gotten through the entire extensive pre-production test phases, accelerated life tests, etc., and was in pilot production. I walked past the production line technician's bench every day, and began noticing several tantalum capacitors of the same type in the replaced-component box. They had come from a sweep circuit I had essentially copied from an instrument which had been in production for some time. Puzzled, I analyzed the circuit carefully, and discovered that at an extreme setting of one control, the tantalum cap could have a very small reverse voltage applied. I modified the circuit to eliminate the possibility of any reverse voltage of any level, and the capacitors quit failing. Servicing data from the instrument I had copied the circuit from showed noticeably reduced reliability of the capacitor, also. The lesson learned is that tantalums won't tolerate _any_ reverse voltage. If they don't fail immediately, a disproportionate number will fail eventually.

The other anecdote involves a QRP rig. As a crude reverse-voltage protection, I had reverse-connected a 3-watt diode (actually, a 36 volt zener I had lots of) across the power supply terminals. My battery supply normally had an-line fuse which would blow. Just before Field Day one year, the fuse holder broke and I didn't have a spare in the junk box. I'd never blown a fuse in 20 years of Field Days, so went without. The battery was a 12 volt, 5 Ah sealed lead acid unit, capable of a few hundred amps if shorted. As I'm sure you've guessed, that was to be The Year of the Reverse Connected Supply. The wires to the battery immediately melted out of their insulation, burning some holes in the tent floor. I managed to disconnect the battery without getting burned and before a real fire started, and checked the damage. The rig's (recently installed) power switch was fortunately off, so the innards didn't get any reverse voltage. The diode had gotten so hot that the plastic case had fractured and probably burned -- it was gone. The diode's solder joints had melted, and the two separated diode leads were dangling. But there was still a dead short across the terminals -- a small 6.8 uF dipped tantalum capacitor was also across the terminals, and it had become such a good short that it hadn't gotten hot enough to explode. (The power supply wires were something like #24 or #26, so they'd limited the current.) My guess is that it went short just as soon as the diode opened, and made a better quality short than the diode had. The fuse is now back in place (along with new diode and capacitor), so of course I haven't reverse connected the supply since.

Roy Lewallen, W7EL

560. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 22:21:48 UTC
From: larwe@larwe.com
Message-ID: <608b6569.0401221421.4325d1c9@posting.google.com>
Source record: 29147
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

> >>Consumer electronics are costed down to the lowest possible level. If
> >>they can use something cheaper, they WILL use something cheaper. A TV
> >
> >Well, maybe. Any manufacturer who has been nailed with thousands of
> >dollars in warranty costs caused by saving a penny might disagree with
> >your statement. I've seen it happen.
>
> Caused by bad engineering (or purchasing), I would say.

"Costing down" does not mean "making inappropriate component
substitutions", and I wasn't suggesting or advocating such a policy.
It means, quite simply, going over the circuit and seeing where a
cheaper design or a cheaper, _compatible_ substitute can be used. If
the device has a 12 month warranty, and it dies after that period
expires, then nobody really cares which component was the first to
fail. Especially in disposable consumer electronics!

561. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 22:22:44 UTC
From: Walter Harley <walterh@cafewalterNOSPAM.com>
Message-ID: <1010j9ms0t0vl15@corp.supernews.com>
Source record: 29148
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:1010hb9gigfli91@corp.supernews.com...
> analyzed the circuit carefully, and discovered that at an extreme
> setting of one control, the tantalum cap could have a very small reverse
> voltage applied. I modified the circuit to eliminate the possibility of
> any reverse voltage of any level, and the capacitors quit failing.

How much voltage? We talking tens, hundreds, or thousands of mV?

562. Re: How do I eliminate noise from a pc monitor?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-22 23:53:13 UTC
From: k9sqg@aol.com
Message-ID: <20040122185313.19027.00000572@mb-m28.aol.com>
Source record: 29149

Remidies depend on determining first if the noise is being conducted and/or radiated...

563. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 00:08:12 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <1010pfjods0qk28@corp.supernews.com>
Source record: 29150
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

Walter Harley wrote:
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:1010hb9gigfli91@corp.supernews.com...
>
>>analyzed the circuit carefully, and discovered that at an extreme
>>setting of one control, the tantalum cap could have a very small reverse
>>voltage applied. I modified the circuit to eliminate the possibility of
>>any reverse voltage of any level, and the capacitors quit failing.
>
>
> How much voltage? We talking tens, hundreds, or thousands of mV?
>

As I recall, it was a couple of tenths of a volt. The capacitor was probably a 12 or 25 volt unit.

A quick scan of the web shows that some manufacturers claim their tantalum capacitors will withstand something like 10% of rated voltage (not to exceed 1 volt) at 25 degrees C, and 3 - 5% of rated voltage (not to exceed 0.5 volt) at 85 degrees C, with a time limit on application of reverse voltage. Because of my experience, though, I'd consider it to be bad design practice to allow any reverse voltage at all until I saw some reliability figures for capacitors used under those conditions. The problem is that it doesn't cause immediate failure, or even assured failure -- it just increases the probability of failure. Some applications can tolerate the increased failure rate, and some can't. At Tek, a great deal of importance was placed on reliability.

Roy Lewallen, W7EL

564. Re: How do I eliminate noise from a pc monitor?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 00:23:32 UTC
From: "Dan Richardson"
Message-ID: <naq010tk0lol97kudjchsu3ofuj7tu2bq9@4ax.com>
Source record: 29152

What worked for me was to replace the sucker with an LCD monitor.

Danny, K6MHE

On 22 Jan 2004 18:13:07 GMT, fazamy@aol.com (FAZAMY) wrote:

>I have a noise source. It is from a pc monitor sharing the same desk as my
>rig, and it is connected to the pc that is linked to my rig via of ribbon cable
>to a comm port. The noise doesn't cover an entire band. It just is on one
>frequency and harmonics of that frequency.
>
>What are the remedies.
>
>73,
>KB2AMY

565. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 00:25:33 UTC
From: Charles Edmondson <cedmonds@cadence.com>
Message-ID: <401069fd$1@news.cadence.com>
Source record: 29151
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

jimp@specsol-spam-sux.com wrote:

>In rec.radio.amateur.homebrew Ken Finney <kenneth.c.finney@boeing.com> wrote:
>
>
>
>
>>Silver cased wet slug tantalums DO explode, most contracts that
>>allow the use of wet slugs require the use of tantalum cased parts.
>>
>>
>
>Some years ago I wandered into one of the design labs to ask some questions
>about a new thingy we were doing.
>
>On a bench was a metal trash can with wires leading to a power supply,
>thermometer, and a chart recorder.
>
>"What's all this", I ask.
>
>"Getting some real data on stressing tantalums. The trash can is a blast
>shield just in case" was the answer.
>
>Just after the guy running the test uttered the words "looks like nothing
>bad is going to happen" the cap exploded with the trash can acting as
>a megaphone for the bang and director for the shrapnel; everyone around
>hit the deck.
>
>We got off the floor and looked up to the acoustical ceiling where there
>was capacitor pieces and an alligator clip embedded therein.
>
>When the guy running the test said "Maybe we had better rethink this
>design", I decided to go back to my lab and come back on a better day.
>
>We continued to use tantalums (aerospace), but there were a lot more
>explosions in the lab to make sure they didn't happen on the shipped
>product.
>
>
Few years ago, my boss came in, laid a printed schematic on my desk, and
said "Put this in PSpice, so we can demo it to a customer. I said OK,
and started entering the design. He comes in a couple of hours later,
and wants to know if it is finished! I go, SaWha? He now tells me that

he is getting on a plane in a few hours, and has a meeting with the customer in the morning! So I get to it, end up emailing it to him the next morning, as there were some digital parts not in the standard libraries, had several components that I had to create, etc. There are still major bugs in the simulation, etc. That afternoon, he calls, and says that they were mad because they didn't see what they were looking for in the simulation. I ask, What were they looking for? And he tells me, this cap in the power supply keeps exploding! I then realize he is talking about the tantalum! Since I had just seen a thread like this one, I knew about tantalums, so I told him that there was no way we were going to create a special model for PSpice for tantalum caps! Most designers just knew not to use them as power supply filters!

Got a bad review from him that year. I now know that, when you get an assignment, ask LOTS of questions, to the actual customer whenever possible! 8-)

Charlie
Edmondson Engineering
Unique Solutions to Unusual Problems

566. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 01:36:57 UTC
From: k7itm@aol.com
Message-ID: <3200347.0401221736.13a164b@posting.google.com>
Source record: 29153
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:<100u2kvskpbroc8@corp.supernews.com>...
> Over the last few years I've acquired quite a few consumer electronincs pcbs
> including TVs, VCRs, stereos, etc, so when I discovered that I needed a
> tantalum to repair some test equipment I was going to salvage a tantalum. I
> couldn't find one anywhere, so I assume they're too expensive or too
> unrelaible for high end consumer electronics. A couple of the boards were
> from my personal stuff purchased new. One example is a MGA Mitsubishi rear
> projection TV that operated flawlessly for nearly 20 years of daily use.
> Most of my test equipment comes from hamfests and is surplus after becoming
> obsolete and non-operative in less than 20 years. That leads me to wonder
> what the real story is behind tantalum capacitors. What do the experts have
> to say?
> tnx
> hank wd5jfr

Didn't see anyone else mention that aluminum electrolytics don't work
well when cold, but tantalums keep working fine.

Your test equipment probably became "obsolete" because the things
being tested were newer and more sophisticated than the equipment was
designed for, and therefore it was no longer needed. Technology moves
along rather swiftly these days. If all analog TV signals were
discontinued with only digital available, your old rear projection TV
would also be obsolete. Test equipment is commonly much more
sophisticated than consumer...drifts that are practically unnoticable
in consumer electronics would be intolerable in test equipment. But
even so, I have plenty of test equipment that's 20+ years old that
still works fine. I've had to repair (or toss) a higher percentage of
my consumer electronics than of my test equipment, for sure.
"Discman" type CD players seem to have an especially short life, but
I've had tape recorders, TVs and at least one stereo amplifier fail as
well.

Cheers,
Tom

567. Re: Datasheet info wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 01:59:26 UTC
From: LA8AK@online.no
Message-ID: <40107a29.4384169@news.online.no>
Source record: 29154

On Wed, 21 Jan 2004 23:01:10 +0000 (UTC), Joe McElvenney
<ximac@btinternet.com> wrote:

>Hi,
>
>
>> Having surfed for a datasheet for a Mitsubishi PA unit named M57741,
>> all I found was "pay-only" info.
>>
>> If someone know where to find it, I would like to hear :-)
>
>
> OM LA8AK seems to know a thing or two about how to use the M57741,
>so you could try this page of his site.
>
> http://home.online.no/~la8ak/d25.htm
>
>
> 73 de Joe, G3LLV
>
>

no, not really, I suffered the same information problems, but - you
know - most such devices are almost equal, so if you have an old
Motorola, RCA or Philips data book and look at the connections in an
application you can extract a lot of info and don't need to have exact
info. Often the gain is higher, so when the manufacturer says it needs
100mV it may sometimes work perfectly well on 10mW, and when they say
that Vc1 and Vc2 should be 12V, you may even key Vc1 or put a
potmeter in series to adjust the output, but electrolytics on the
supply voltages seem important to avoid spurious

73 JM
http://home.online.no/~la8ak/c.htm
--
Amount of SPAM is so large that MailWasher must delete 99% of the incoming mails
Cannot check every email manually. Please use intelligent title for email.
Mails without titles or using just "hi" is deleted

568. Homebrew related

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 03:45:34 UTC
From: Bob Liesenfeld <wb0poq@visi.com>
Message-ID: <401098DE.F9659AF8@visi.com>
Source record: 29155

Hi gang,
Does anyone remember a product from the late 60's or early 70's called "Norelco Electronics Lab"? It was a lot like the current "100 in one" electronic sets, but on a more sophisticated level. Seems to me it had some early Ge transistors in it.

Thanks

Bob WB0POQ

569. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 04:09:25 UTC
From: John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com>
Message-ID: <3e7110dnp4fqkejs8apmmvqqavb6cu62ja@4ax.com>
Source record: 29156
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

```
On Thu, 22 Jan 2004 18:12:20 GMT, "Ken Finney"
<kenneth.c.finney@boeing.com> wrote:

>
>"John Larkin" <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> wrote in
>message news:c0tv0013s1ate0ods8264p7gur0o0fecu8@4ax.com...
>> On Wed, 21 Jan 2004 22:21:31 -0800, "Tim Wescott"
>> <tim@wescottnospamdesign.com> wrote:
>>
>> >I wouldn't assume that just because your test equipment comes to you
>broken
>> >is a result of tantalum caps -- perhaps your sample is skewed by buying
>at
>> >hamfests instead of burgling active technology companies? Maybe if you
>only
>> >acquired your home entertainment equipment from dumpsters you'd conclude
>> >that aluminum electrolytics are bad?
>> >
>> >I recently escaped from a company that does aero (but not space) systems.
>> >They get mounted on aircraft and are expected to survive being shipped in
>an
>> >unpressurized cargo hold at 50000 feet. At that altitude a wet aluminum
>> >electrolytic will dry out, but a tantalum will be fine. There are even
>> >wet-slug tantalums for high-altitude applications that will not dry out
>at
>> >these altitudes.
>> >
>>
>> Wet-slug tants are expensive (do they still have silver cases?) but
>> don't blow up like the dry ones. The dry slugs coat the sintered
>> tantalum (fuel) with MnO2 (oxidizer).
>>
>
>< snip >
>
>Silver cased wet slug tantalums DO explode, most contracts that
>allow the use of wet slugs require the use of tantalum cased parts.
>
>
>

Sure, any cap will explode if you dump enough energy into it. The
difference is that the dry Ta:MnO2 guys only need a tiny bit of energy
to ignite, then chemically explode on their own. Just a high dV/dT
```

will set one off.

John

570. Re: Homebrew related

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 05:02:25 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1011amlicqpd866@corp.supernews.com>
Source record: 29157

Did it have a bunch of little sugar-cube sized pieces, with four- or five-contact gizmos that you stuck wire into for each componant lead (like a single-row proto board)? You stuck the pieces down on a board and wired them together. I had a bachelor uncle who was an EE, and I always pestered him for electronics stuff for Christmas. One year he gave me such a beast. I remember really liking it, but it must not have lasted very long, because I sure don't have it now!

"Bob Liesenfeld" <wb0poq@visi.com> wrote in message
news:401098DE.F9659AF8@visi.com...
> Hi gang,
> Does anyone remember a product from the late 60's or early 70's called
> "Norelco Electronics Lab"? It was a lot like the current "100 in one"
> electronic sets, but on a more sophisticated level. Seems to me it had
> some early Ge transistors in it.
>
> Thanks
>
> Bob WB0POQ
>

571. Re: How do I eliminate noise from a pc monitor?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 05:09:10 UTC
From: Brian Oakley <brianoakley@ispwest.com>
Message-ID: <bur3t202ari@enews3.newsguy.com>
Source record: 29162

"FAZAMY" <fazamy@aol.com> wrote in message
news:20040122131307.11385.00000515@mb-m05.aol.com...
> I have a noise source. It is from a pc monitor sharing the same desk as
my
> rig, and it is connected to the pc that is linked to my rig via of ribbon
cable
> to a comm port. The noise doesn't cover an entire band. It just is on
one
> frequency and harmonics of that frequency.
>
> What are the remedies.
>
> 73,
> KB2AMY
>
Most CRT monitors radiate enough noise to raise the noise floor to an
unacceptable level. One of the best remedies is to use good quality coax and
to keep the antenna as far away from the monitor as possible.

572. Re: Homebrew related

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 05:45:39 UTC
From: Bob Liesenfeld <wb0poq@visi.com>
Message-ID: <4010B502.AF8D04F0@visi.com>
Source record: 29158

Tim Wescott wrote:

> Did it have a bunch of little sugar-cube sized pieces, with four- or five-
> contact gizmos that you stuck wire into for each componant lead (like a
> single-row proto board)?

No, I don't think so. As I recall it had regular components that were connected between spring loaded posts. I think it had a schematic sheet that you laid down on a board like pegboard, put the posts in and then added the components.

Bob

573. Re: Homebrew related

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 08:11:09 UTC
From: Graham <graham.ogle@ntlworld.com>
Message-ID: <AG4Qb.29$aB.29818@newsfep2-gui.server.ntli.net>
Source record: 29159

I remember a similar product here in the UK called the Philips Electronic Engineer Kit. I had hours of fun with it in the early '70's. The only transistors I remember were BC548's mounted on small PCBs which depressed the spring contacts and were held in place when other components were added.

But now I try to remember which transistors they were, I not so sure about the BC548 bit. Childhood memories can be very unreliable!

Graham

"Bob Liesenfeld" <wb0poq@visi.com> wrote in message news:4010B502.AF8D04F0@visi.com...
>
>
> Tim Wescott wrote:
>
> > Did it have a bunch of little sugar-cube sized pieces, with four- or five-
> > contact gizmos that you stuck wire into for each componant lead (like a
> > single-row proto board)?
>
> No, I don't think so. As I recall it had regular components that were
> connected between spring loaded posts. I think it had a schematic sheet that
> you laid down on a board like pegboard, put the posts in and then added the
> components.
>
> Bob
>

574. Re: Homebrew related

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 10:32:03 UTC
From: Tom Twist <tom@twist.no>
Message-ID: <7ut110hk0sbka8i9sn8r95lh0knqg823ns@4ax.com>
Source record: 29160

On Fri, 23 Jan 2004 08:11:09 -0000, "Graham"
<graham.ogle@ntlworld.com> wrote:

>I remember a similar product here in the UK called the Philips Electronic
>Engineer Kit. I had hours of fun with it in the early '70's. The only
>transistors I remember were BC548's mounted on small PCBs which depressed
>the spring contacts and were held in place when other components were added.
>
>But now I try to remember which transistors they were, I not so sure about
>the BC548 bit. Childhood memories can be very unreliable!
>
<snip>

Hi

I think they were AC126 (audio) and AF116 (HF) germanium transistors.

Tom

Email: tom@twist.no (lb8x@qsl.net)
Phone: +47 35972928/90662366, Ham call sign: LB8X Locator: JO49UA
Snail: Tom Twist, Kirkeveien 8A, N3970 Langesund, Norway

575. Re: Homebrew related

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 10:57:25 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <4010fe16$0$23462$cc9e4d1f@news.dial.pipex.com>
Source record: 29161

Graham wrote:

> I remember a similar product here in the UK called the Philips Electronic
> Engineer Kit. I had hours of fun with it in the early '70's. The only
> transistors I remember were BC548's mounted on small PCBs which depressed
> the spring contacts and were held in place when other components were added.
>
> But now I try to remember which transistors they were, I not so sure about
> the BC548 bit. Childhood memories can be very unreliable!

I vaguely remember it. Norelco is a Philips trade name, it seems to be
used now for their shavers in the US. It probably used Mullard devices
(Mullard was taken over by Philips).

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

576. Re: Datasheet info wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 12:59:20 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <aX8Qb.25297$OA3.7973474@newsfep2-win.server.ntli.net>
Source record: 29163

> >> Having surfed for a datasheet for a Mitsubishi PA unit named M57741,
> >> all I found was "pay-only" info.
> >>
> >> If someone know where to find it, I would like to hear :-)
> >
> >
> > OM LA8AK seems to know a thing or two about how to use the M57741,
> >so you could try this page of his site.
> >
> > http://home.online.no/~la8ak/d25.htm
> >
> >
> > 73 de Joe, G3LLV
> >
> >
> no, not really, I suffered the same information problems, but - you
> know - most such devices are almost equal, so if you have an old
> Motorola, RCA or Philips data book and look at the connections in an
> application you can extract a lot of info and don't need to have exact
> info. Often the gain is higher, so when the manufacturer says it needs
> 100mV it may sometimes work perfectly well on 10mW, and when they say
> that Vc1 and Vc2 should be 12V, you may even key Vc1 or put a
> potmeter in series to adjust the output, but electrolytics on the
> supply voltages seem important to avoid spurious
==========
From Mainline Electronics -Leicester /Mitsubishi catalogue here it goes :
M57741UL 135-148 MHz ,Po=28W, Gp=21.4dB, Pin=200mW, Vcc=12.5V, Pin=3.3 ?
M57741L 148-160 MHz , 30 ditto
M57741M 156-168 MHz , 28 ditto

Don't know what Pin (no dimension) =3.3 means ,perhaps idle power without
input signal.
Since Vbb is not specified a note says that the power modules are NOT
suitable for SSB operation .
Package outline code : H2 ,showing dimensions and 4 wire connections (no
connection designations included)

For max. Vcc=17 V ,Pout is 35W
However personal experience with this range of power modules is that to
ensure reliable long term operation it is better to operate them below their
rated specs.
Example: A 25 W module used in a 2m Packet Radio BBS transceiver (FM) which
operates on a 24/7 basis has been set for 10 W operation. This is 4dB down
or just over half an S-point on rx.

Frank GM0CSZ / KN6WH

577. High Inductance Toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 14:13:09 UTC
From: Graham <graham.ogle@ntlworld.com>
Message-ID: <_Z9Qb.25307$OA3.8001471@newsfep2-win.server.ntli.net>
Source record: 29164

I am trying to make some high value toroids, about 1mH. I have a commercial one using a half inch core with about 20turns on it to give 3.3mH. Does anyone know what the core material/description is or an UK source please? The normal ones such as T37-2s etc only give a few uH.

Thanks

Graham

578. Coil Spring Solderless Terminals

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 14:35:56 UTC
From: kizerian@xmission.com
Message-ID: <ee6182da.0401230635.3999f1d0@posting.google.com>
Source record: 29165

Does anyone know where I can buy IN QUANTITY the coil spring
solderless terminals commonly used on hobby kits like the "100 in One"
experimenters kits sold by Radio Shack, etc.?

Bruce Kizerian kk7zz
www.elmerdude.com

579. Re: How do I eliminate noise from a pc monitor?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 14:46:57 UTC
From: fazamy@aol.com
Message-ID: <20040123094657.22686.00000351@mb-m19.aol.com>
Source record: 29166

How do I eliminate noise from a pc monitor?

I solved my problem by changing the monitor color display from 256 to 16. This cut the noise right out.

After looking for a real easy and uncomplicated solution, with pc and tcvr on, I rebooted the pc in dos mode and when the b&w screen appeared there was no noise from monitor.

Then I went to control panel, found the display info and changed the color to 16.
For some reason, too many colors create noise. (Why?)

Thanks to all for your help.

73,
Evan
KB2AMY

580. Re: How do I eliminate noise from a pc monitor?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 14:55:38 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <401135E0.23AEC3BE@earthlink.net>
Source record: 29167

FAZAMY wrote:
>
> How do I eliminate noise from a pc monitor?
>
> I solved my problem by changing the monitor color display from 256 to 16. This
> cut the noise right out.
>
> After looking for a real easy and uncomplicated solution, with pc and tcvr on,
> I rebooted the pc in dos mode and when the b&w screen appeared there was no
> noise from monitor.
>
> Then I went to control panel, found the display info and changed the color to
> 16.
> For some reason, too many colors create noise. (Why?)
>
> Thanks to all for your help.
>
> 73,
> Evan
> KB2AMY

Less colors use a simpler drive signal to the CRT. Also, selecting a
different video resolution will move the sweep frequency.

--
We now return you to our normally scheduled programming.

Michael A. Terrell
Central Florida

581. Tantalums and test eqpt.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 15:22:38 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <1012f225l61me6e@corp.supernews.com>
Source record: 29168

I like good test equipment and when I started in the 1950s good was homebrew, war surplus and the local radio TV shop. Then in the RCAF it was a Tek 545 and later at university it was a Tek 545B. (I worked my way thru college as a TV repairman working 20 to 30 hrs per week!) After university and when I had spare cash I graduated from homebrew and surplus to kits. Then my first good bad scope was an HP 120. Nothing but problems with the HV supply. Now unwllingly retired at 63 one of my passions is to build a up a small lab for personal enjoyment by finding at good prices test equipment made by the best mfgs such as Tektronix , GR, HP, Fluke, Boonton, and others, but the others usually don't hold a candle to the top 4. Others include Wavetek, Racal, Philips, Systron Donner, etc. There's a third class that includes Heathkit, Eico, RCA, Sencore, B&K and others who furnish radio and TV test bench eqpt and I have some that is very, very good. A fourth class is foreign like Marconi, Meguro, Siemens, Rohde & Schwarz, all excellent but that I generally shy away from them because information and parts are in the unobtanium category.
Generally finding a very good deal at a swapmeet means there's something wrong with it, either unknown or undisclosed by the previous owner. Finding docs for the best is hard enough but an order of magnitude harder for the others and that goes another order of mag for parts. Sometimes one needs 2 or 3 junkers to succeed or give up.
I don't like to leave a swapmeet without some good deal that I can take home and plug into the Variac to see what it does. Generally I'll look inside to see if it's complete with no obvious missing parts and no char babies. Then I turn the Variac up and watch the current and look and smell to see if all the smoke the the factory sealed-in is still there. If it is but it doesn't work I check power supply voltages. It never ceases to amaze me that very few of the mfgs have figured out how to build a reliable power supply. In my work, Telecom, most critical hicap stuff had dual supplies so it could still operate if one supply failed and to top that off they migrated to hot swapable supplies! My own theory on power supply unreliability is that the companies assign newly graduated engineers to design power supplies and those guys don't have enough experience to understand the ravages of long term heat, continual cycling and the crazy stuff that can come down the AC power line! One exception today may be PC power supplies as I don't see boatloads at the meets like I used to but maybe it's because I'm not looking!
First, I check the supply voltages and if they're down I check the rectifiers and capacitors. Many times I'm lucky and find the problem right away but other times if its a short it a arduos process on pcb. After much wasted time the bad cap is found, an Al electrolytic if there are no or few tantalums but if there's lot of tants there's a very good chance it's one of the tantalums with a dead short and not exploded. Partial short are best because they make char babies!

If the fault isn't in the power supply or on a supply rail it soon
becomes a waste of time without a manual.
To end this mild diatribe, obsolescence of test eqpt is a matter of
economics for business and sadly me! I still like my Boonton 260 Q meter but
I'd rather have an HP 4342A and I'd rather have an HP 8921A to replace my HP
141T, a newer Tektronix TDS to replace my Tek 465. Space, time, dollars,
and performance all suffer in my lab but it's there for my enjoyment and
entertainment. and most likely to be upgraded with smaller, higher
performing, newer, less obsolete gadgets.
73
hank wd5jfr

582. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 15:22:41 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <1012fras8solid6@corp.supernews.com>
Source record: 29169
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

I've started a new thread with a partial respnse to your comments Subject:
Tantalums and test eqpt
73
hank wd5jfr
"Tom Bruhns" <k7itm@aol.com> wrote in message
news:3200347.0401221736.13a164b@posting.google.com...
> "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:<100u2kvskpbroc8@corp.supernews.com>...
> > Over the last few years I've acquired quite a few consumer electronincs
pcbs
> > including TVs, VCRs, stereos, etc, so when I discovered that I needed a
> > tantalum to repair some test equipment I was going to salvage a
tantalum. I
> > couldn't find one anywhere, so I assume they're too expensive or too
> > unrelaible for high end consumer electronics. A couple of the boards
were
> > from my personal stuff purchased new. One example is a MGA Mitsubishi
rear
> > projection TV that operated flawlessly for nearly 20 years of daily use.
> > Most of my test equipment comes from hamfests and is surplus after
becoming
> > obsolete and non-operative in less than 20 years. That leads me to
wonder
> > what the real story is behind tantalum capacitors. What do the experts
have
> > to say?
> > tnx
> > hank wd5jfr
>
> Didn't see anyone else mention that aluminum electrolytics don't work
> well when cold, but tantalums keep working fine.
>
> Your test equipment probably became "obsolete" because the things
> being tested were newer and more sophisticated than the equipment was
> designed for, and therefore it was no longer needed. Technology moves
> along rather swiftly these days. If all analog TV signals were
> discontinued with only digital available, your old rear projection TV
> would also be obsolete. Test equipment is commonly much more
> sophisticated than consumer...drifts that are practically unnoticable
> in consumer electronics would be intolerable in test equipment. But
> even so, I have plenty of test equipment that's 20+ years old that
> still works fine. I've had to repair (or toss) a higher percentage of
> my consumer electronics than of my test equipment, for sure.

> "Discman" type CD players seem to have an especially short life, but
> I've had tape recorders, TVs and at least one stereo amplifier fail as
> well.
>
> Cheers,
> Tom

583. Re: High Inductance Toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 15:48:13 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <6nf210hv7e5g9ag9ulpdibrerilatrv6vd@4ax.com>
Source record: 29170

On Fri, 23 Jan 2004 14:13:09 -0000, "Graham"
<graham.ogle@ntlworld.com> wrote:

>I am trying to make some high value toroids, about 1mH. I have a commercial
>one using a half inch core with about 20turns on it to give 3.3mH. Does
>anyone know what the core material/description is or an UK source please?
>The normal ones such as T37-2s etc only give a few uH.

I got some from Bardwells that were about 20mm dia and when
close-wound all round with one layer of 0.7mm enamel wire came out at
exactly 1mH (which was handy since that was the objective!). Give them
a try. They do mail order and are very reasonable.
--

My opinion is worth what you've paid for it.

584. Re: How do I eliminate noise from a pc monitor?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 16:32:39 UTC
From: fazamy@aol.com
Message-ID: <20040123113239.12686.00000555@mb-m29.aol.com>
Source record: 29171

Don't count your chickens before they hatch. Haste makes waste. Sometimes "simple" solutions don't work.

Info on an earlier post today proclaims my solution. Not so :-(Changing color display to 16 merely cut the noise on one frequency, and the noise appears on a couple of different frequencies.

Therefore, before I post solutions - like a good scientist - I will carefully observe and test and re-test.

73,
KB2AMY

585. Re: How do I eliminate noise from a pc monitor?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 17:09:07 UTC
From: Eddie Haskel <wiseguy@clever.com>
Message-ID: <TycQb.4993$IO5.1743@newssvr29.news.prodigy.com>
Source record: 29172

Sounds like the *BEST* damned reason to purchase a new flat screen LCD monitor I have ever heard! Going to try that one on the better-half this weekend.....Eddie
"FAZAMY" <fazamy@aol.com> wrote in message news:20040122131307.11385.00000515@mb-m05.aol.com...
> I have a noise source. It is from a pc monitor sharing the same desk as my
> rig, and it is connected to the pc that is linked to my rig via of ribbon cable
> to a comm port. The noise doesn't cover an entire band. It just is on one
> frequency and harmonics of that frequency.
>
> What are the remedies.
>
> 73,
> KB2AMY
>

586. Re: High Inductance Toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 17:28:10 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <401159AA.7B8F6F29@rica.net>
Source record: 29173

Graham wrote:
>
> I am trying to make some high value toroids, about 1mH. I have a commercial
> one using a half inch core with about 20turns on it to give 3.3mH. Does
> anyone know what the core material/description is or an UK source please?
> The normal ones such as T37-2s etc only give a few uH.
>
> Thanks
>
> Graham

There are two basic categories of toroid cores. Those that contain distributed gaps between bits or sections of high permeability material (to increase their energy storage capability) and those made with a single material that has a high permeability (may be metal, metal tape or ferrite ceramic).

The T series are the distributed gap type. Their claim to fame is their ability to have stable inductance with high ampere turns applied. So before you can choose a core material, you not only have to specify the inductance required, but the ampere turns this inductance must support.

Here are links to a few ferrite manufacturers:
http://www.fair-rite.com/
http://www.mag-inc.com/ (also makes the powdered iron cores)
http://www.neosid.com/fercor/toroids/tormn.htm
http://www.ferroxcube.com/prod/assets/fertor.htm
http://tciceramics.com/f_toroid.htm

Many others are available through Google. The first link includes an inductor design tutorial at the back of their catalog that may be helpful.

--
John Popelish

587. How good is ferrite 75 material for crystal AM radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 17:29:43 UTC
From: beginner <beginner@nowhere.com>
Message-ID: <1012mg7devgth5c@corp.supernews.com>
Source record: 29174

I made an inductor by winding 14 turns on T82-75 torroid.
Using 180 pF variable capacitor, in a crystal radio circuit I could not pick up any signal but even with a 470 uH modded inductor I picked up a few signals.

Is this material not suitable for this appication?

Thanks

588. Re: Tantalums and test eqpt.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 17:35:42 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1012mr3nidoi747@corp.supernews.com>
Source record: 29175

Many companies view power supply design as unchallenging, and many engineers see it as boring. So power supply design often gets relegated to dull people or new grads. There is a grain of truth there, in that power supply design is a lot about remembering all the ways that previous designs have failed and not doing that again, and not so much about applying the latest technology that's coming down the pike.

The two best power supplier designers that I can bring to mind are (one) a guy who never did get his BS in EE, but designed power supplies for decades and could tell you every possible way that one could fail and what to do about it, and (two) a guy who usually does video design, but only because he does _everything_ right -- and when he does a power supply or is the technical lead over someone doing a power supply it always works. Both of these guys are technically paranoid and have long memories, which is really what it takes.

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message news:1012f225l61me6e@corp.supernews.com...

<snip some>

> My own theory on power supply
> unreliability is that the companies assign newly graduated engineers to
> design power supplies and those guys don't have enough experience to
> understand the ravages of long term heat, continual cycling and the crazy
> stuff that can come down the AC power line!

<snip some more>

> 73
> hank wd5jfr
>
>

589. ransey pa1 amp question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 18:11:28 UTC
From: g <gg@ghj.com>
Message-ID: <ktdQb.41129$6N3.15@charlie.risq.qc.ca>
Source record: 29176

Good day,

I would like to get spec for the transistor in the ramsey pa1 vhf
amplifer and or other equivalent transistor.
reply in news group please.

Thanks
gil

590. Re: How good is ferrite 75 material for crystal AM radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 18:27:13 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <40116781.B809CB78@rica.net>
Source record: 29177

beginner wrote:
>
> I made an inductor by winding 14 turns on T82-75 torroid.
> Using 180 pF variable capacitor, in a crystal radio circuit I could not
> pick up any signal but even with a 470 uH modded inductor I picked up a few
> signals.
>
> Is this material not suitable for this appication?
>
> Thanks

I am not familiar with this core number, but if it is actually made of
Fair-Rite type 75 ferrite, it is not very good for making 1 MHz
inductors. It is low resistivity (acts as a loaded turn in parallel
with your inductance) and quite a bit of hysterisis loss. Are you
sure it is ferrite? Can you measure the contact resistance between
two points on the core with your ohm meter?

--
John Popelish

591. Re: How good is ferrite 75 material for crystal AM radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 18:37:17 UTC
From: Fred Bartoli <fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo>
Message-ID: <40116a0c$0$29080$636a55ce@news.free.fr>
Source record: 29178

"John Popelish" <jpopelish@rica.net> a crit dans le message news:
40116781.B809CB78@rica.net...
> beginner wrote:
> >
> > I made an inductor by winding 14 turns on T82-75 torroid.
> > Using 180 pF variable capacitor, in a crystal radio circuit I could not
> > pick up any signal but even with a 470 uH modded inductor I picked up a
few
> > signals.
> >
> > Is this material not suitable for this appication?
> >
> > Thanks
>
> I am not familiar with this core number, but if it is actually made of
> Fair-Rite type 75 ferrite, it is not very good for making 1 MHz
> inductors. It is low resistivity (acts as a loaded turn in parallel
> with your inductance) and quite a bit of hysterisis loss. Are you
> sure it is ferrite? Can you measure the contact resistance between
> two points on the core with your ohm meter?
>
> --

Whatever the material, a core shape is not well suited to pickup fields.

Instead, use an opened one, like ferrite sticks. Unfortunately you'll have
to have many more turns.

Fred.

592. Re: How good is ferrite 75 material for crystal AM radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 18:49:09 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <40116CA5.30EDBCC@rica.net>
Source record: 29179

Fred Bartoli wrote:

> Whatever the material, a core shape is not well suited to pickup fields.
>
> Instead, use an opened one, like ferrite sticks. Unfortunately you'll have
> to have many more turns.

Yep. Went right past me without even a whoosh noise. ;-)

--
John Popelish

593. Re: Homebrew related

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 19:13:37 UTC
From: Alex Flinsch <alex@localhost.localdomain>
Message-ID: <slrnc12sqm.e99.alex@homer.linux1.lan>
Source record: 29180

In article <1011amlicqpd866@corp.supernews.com>, Tim Wescott wrote:
> Did it have a bunch of little sugar-cube sized pieces, with four- or five-
> contact gizmos that you stuck wire into for each componant lead (like a

I had something like that, but IIRC it was called "Electro" the components were enclosed in small plastic cubes (about 1 inch) with clear sides and white tops with the schematic symbol printed on them. The cubes had flat metal plates on the sides and a magnet on the bottom to hold them to a metal ground plane plate.

To build projects all you needed to do, was copy the schematic in the book by lining up the cubes on the metal ground board.

Alex / AB2RC

594. Re: How good is ferrite 75 material for crystal AM radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 19:21:40 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1012t1psgk7dmde@corp.supernews.com>
Source record: 29181

If you have a good antenna do you _want_ to use a coil that's going to pick up fields? I would think you'd want to control the energy getting into your set.

What ever happened to buying a bottle of fancy whiskey and using the cardboard tube it came in for a coil?

"John Popelish" <jpopelish@rica.net> wrote in message news:40116CA5.30EDBCC@rica.net...
> Fred Bartoli wrote:
>
> > Whatever the material, a core shape is not well suited to pickup fields.
> >
> > Instead, use an opened one, like ferrite sticks. Unfortunately you'll have
> > to have many more turns.
>
> Yep. Went right past me without even a whoosh noise. ;-)
>
> --
> John Popelish

595. TELETTRA TL/TRC-184

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 19:34:24 UTC
From: Bruno <bruno.lusu@tin.it>
Message-ID: <4HeQb.135926$VW.5448148@news3.tin.it>
Source record: 29182

Hi to all hamradio friends...
Recently I've bought an Italian military receiver TELETTRA mod. TL/TRC-184
0.060 to 30 MHz
Can anyone help me to find electrical diagram or technical manual relative?
Thanks and 73 de IK1VHX
Bruno
(lux.bruno@virgilio.it)

596. Re: High Inductance Toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 20:17:07 UTC
From: beginner <beginner@nowhere.com>
Message-ID: <10130a3ns9cq75f@corp.supernews.com>
Source record: 29183

These are ferrite, the other type is iron powder.
I found this site useful for unknown cores.

http://www.alan.melia.btinternet.co.uk/toroids.htm

"Graham" <graham.ogle@ntlworld.com> wrote in
news:_Z9Qb.25307$OA3.8001471@newsfep2-win.server.ntli.net:

> I am trying to make some high value toroids, about 1mH. I have a
> commercial one using a half inch core with about 20turns on it to give
> 3.3mH. Does anyone know what the core material/description is or an UK
> source please? The normal ones such as T37-2s etc only give a few uH.
>
> Thanks
>
> Graham
>

597. Re: simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 21:10:55 UTC
From: Jake Brodsky <frussle@erols.com>
Message-ID: <fa3310d1869vqn2cubgbcrpfgqonhot87p@4ax.com>
Source record: 29184

On Wed, 21 Jan 2004 22:09:37 -0800, "Tim Wescott"
<tim@wescottnospamdesign.com> wrote:

>I was just looking at my 2002 handbook, and there was a circuit for a
>synchronous detector, in the receiver chapter. It wasn't "simple", but it
>was there. It also uses NE604s (the companion chip to the '602), which
>might not be available any more.

I constructed and tested that circuit with a Yaesu FRG-100. It works
reasonably well for ground wave signals. However, it has problems
staying locked during carrier fades. I tinkered extensively with the
phase lock gain and time constants, but to little avail.

The audio quality for local MW stations was amazingly good, however...

Jake Brodsky, AB3A mailto:frussle@erols.com
"Beware of the massive impossible!"

598. WWV Receiver Schematic Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 22:00:42 UTC
From: ray_d_o_mann@hotmail.com
Message-ID: <b387a6ab.0401231400.4d8522a3@posting.google.com>
Source record: 29185

Hello,
Does anyone have any schematics or recommendations for such for
building a WWV receiver? I can't afford to buy one due to
disability-related medical expenses, but I could afford to build one
with some help. The help I can get. The schematic I have not. Can you
please help? Thank you very much.~~Ray

599. Re: WWV Receiver Schematic Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 22:25:52 UTC
From: mcalhoun@ksu.edu
Message-ID: <bus71g$i4j@unix2.cc.ksu.edu>
Source record: 29187

> Does anyone have any schematics or recommendations for such for
>building a WWV receiver? I can't afford to buy one due to
>disability-related medical expenses, but I could afford to build one
>with some help. The help I can get. The schematic I have not. Can you
>please help? Thank you very much.~~Ray

On pages 75-76 of 73 Magazine for some month ending in "ER" in 1971
(I can't be more specific; years ago I tore the article from
the magazine and punched holes so I could put it in a three-ring
binder. The bottom hole wipped out the rest of the month name!)
is an article "Converting the AC/DC for WWV" by John S. Hollar, Jr.,
W3JJU. The "AC/DC" was also known as an "All American Five".

In the article, Mr. Hollar described how he rebuilt the converter
circuit to receive WWV at 10MHz; he said it worked fine in Pennsylvania,
even during daylight hours.

--Myron.
--
Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge
PhD EE (retired). "Barbershop" tenor. CDL(PTXS). W0PBV. (785) 539-4448
NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle, Pistol)

600. Re: WWV Receiver Schematic Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 22:35:47 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <10138ea6cgltvbd@corp.supernews.com>
Source record: 29186

Just about any shortwave radio that covers 5, 10, 15, and 20 MHz will easily
pickup WWV. You can find relativily cheap transistor ones that will serve
the purpose and save you lots of time and perhpas money.
73
hank wd5jfr
"Ray D. O'Mann" <ray_d_o_mann@hotmail.com> wrote in message
news:b387a6ab.0401231400.4d8522a3@posting.google.com...
> Hello,
> Does anyone have any schematics or recommendations for such for
> building a WWV receiver? I can't afford to buy one due to
> disability-related medical expenses, but I could afford to build one
> with some help. The help I can get. The schematic I have not. Can you
> please help? Thank you very much.~~Ray

601. Re: WWV Receiver Schematic Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 22:46:06 UTC
From: Gavin Jacobs <nochancey@mrwhalen.com>
Message-ID: <OuhQb.15886$oj2.12238@edtnps89>
Source record: 29188

Ray,
Assuming that your emphasis is on building rather than buying,
you can do a google search for "shortwave receiver schematic" which yields
numerous choices including this very simple one:
http://braincambre500.freeservers.com/shortwave%20receiver.htm

Gavin

"Ray D. O'Mann" <ray_d_o_mann@hotmail.com> wrote in message
news:b387a6ab.0401231400.4d8522a3@posting.google.com...
> Hello,
> Does anyone have any schematics or recommendations for such for
> building a WWV receiver? I can't afford to buy one due to
> disability-related medical expenses, but I could afford to build one
> with some help. The help I can get. The schematic I have not. Can you
> please help? Thank you very much.~~Ray

602. How to operate an LCR Bridge ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 22:55:36 UTC
From: Adrian <adrian@ambquality.co.uk>
Message-ID: <sd931015cmu6ij66i1h3dbm3c8b83ajbum@4ax.com>
Source record: 29189

Hi All

I have a TestLab LCR bridge - model LCR-3000A.

Unfortunately it didn't come with any instructions - so I can't tll whether it's not working - or if it's me that's not operating it correctly <g>

There's a picture of the front panel at

http://www.ambquality.co.uk/lcr-bridge.jpg

If any kind soul has a manual - or even generic instructions on how to drive it then I'd be very grateful.

Thanks
Adrian (G0THW)
Suffolk UK

603. Re: Datasheet info wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 23:09:56 UTC
From: Tull <finnostervig@hotmail.com>
Message-ID: <4011a9fb$0$214$edfadb0f@dread12.news.tele.dk>
Source record: 29190

Thank you for the usefull info !

Finn

604. Re: High Inductance Toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-23 23:40:21 UTC
From: LA8AK@online.no
Message-ID: <4011803b.71484849@news.online.no>
Source record: 29191

On Fri, 23 Jan 2004 15:48:13 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>On Fri, 23 Jan 2004 14:13:09 -0000, "Graham"
><graham.ogle@ntlworld.com> wrote:
>
>>I am trying to make some high value toroids, about 1mH. I have a commercial
>>one using a half inch core with about 20turns on it to give 3.3mH. Does
>>anyone know what the core material/description is or an UK source please?
>>The normal ones such as T37-2s etc only give a few uH.
>
>I got some from Bardwells that were about 20mm dia and when
>close-wound all round with one layer of 0.7mm enamel wire came out at
>exactly 1mH (which was handy since that was the objective!). Give them
>a try. They do mail order and are very reasonable.
>--
>
>My opinion is worth what you've paid for it.

my conclusion worth a penny is that it depends on whether you are
building a transformer or inductor, in the first place the core you
refer to may be good for a transformer, but suppose it is useless for
most applications as an inductor

73
LA8AK
--
Amount of SPAM is so large that MailWasher must delete 99% of the incoming mails
Cannot check every email manually. Please use intelligent title for email.
Mails without titles or using just "hi" is deleted

605. Re: Tantalums and test eqpt.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 00:35:51 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <1013ffjq55sajb8@corp.supernews.com>
Source record: 29192

One thing I forgot to ask is how good are old, burned-in tantalums that test
good if salvaged for reuse from older equipment. Anyone have any data?
tnx
hank wd5jfr
"Tim Wescott" <tim@wescottnospamdesign.com> wrote in message
news:1012mr3nidoi747@corp.supernews.com...
> Many companies view power supply design as unchallenging, and many
engineers
> see it as boring. So power supply design often gets relegated to dull
> people or new grads. There is a grain of truth there, in that power
supply
> design is a lot about remembering all the ways that previous designs have
> failed and not doing that again, and not so much about applying the latest
> technology that's coming down the pike.
>
> The two best power supplier designers that I can bring to mind are (one) a
> guy who never did get his BS in EE, but designed power supplies for
decades
> and could tell you every possible way that one could fail and what to do
> about it, and (two) a guy who usually does video design, but only because
he
> does _everything_ right -- and when he does a power supply or is the
> technical lead over someone doing a power supply it always works. Both of
> these guys are technically paranoid and have long memories, which is
really
> what it takes.
>
> "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
> news:1012f225l61me6e@corp.supernews.com...
>
> <snip some>
>
> > My own theory on power supply
> > unreliability is that the companies assign newly graduated engineers to
> > design power supplies and those guys don't have enough experience to
> > understand the ravages of long term heat, continual cycling and the
crazy
> > stuff that can come down the AC power line!
>
> <snip some more>
>
> > 73
> > hank wd5jfr
> >

> >
>
>

606. Specification for Antena tuners-radio interfaces

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 02:40:26 UTC
From: JB <Jbonilla11@cfl.rr.com>
Message-ID: <uWkQb.90011$873.1627202@twister.tampabay.rr.com>
Source record: 29193

I would like to know the specifications on how the Kenwood and Yaesu radios interface with their automatic antenna tuners.

Thank you in advace,

JB
jbonilla11@cfl.rr.com

607. Re: How good is ferrite 75 material for crystal AM radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 06:12:19 UTC
From: beginner <beginner@nowhere.com>
Message-ID: <10143632fa85ocf@corp.supernews.com>
Source record: 29194

Yes it is definitely a core T82-75 from the labeling on the package.
Which parameter specifies that it has low resistivity?
Can this be used as a transmission line transformer of a balanced mixer?

Which ferrite material works well for the AM band around 1 MHz?

I can get core #43, 61, and 63.

Thanks for the input folks.

608. advice on how to cascade directional couplers?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 07:13:02 UTC
From: The Eternal Squire <eternalsquire@comcast.net>
Message-ID: <e-adnS6sLqDfiY_dRVn-hg@comcast.com>
Source record: 29195

Hi all,

I'm needing to make several attenuator strips but I don't have much in the way of precision
resistors... I do however have a boatload of FT-37-43 toroids!

In "Solid State Design for the Radio Amateur", there is a schematic for making a 20-db
directional coupler for the purpose of attenuation. My question to the group is how
to cascade the couplers as an attenuator strip, and what type of resistive termination
I am likely to need.

I can't assume that either the source or load of the strip will be 50-ohms, so I wonder if
I need to place a 50 ohm resistor between couplers, and whether I the connection needs
to be series or shunt?

Thanks in advance,

The Eternal Squire

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.564 / Virus Database: 356 - Release Date: 1/19/04

609. Re: How good is ferrite 75 material for crystal AM radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 07:16:31 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <40121bd1$0$28128$cc9e4d1f@news.dial.pipex.com>
Source record: 29196

beginner wrote:
> Yes it is definitely a core T82-75 from the labeling on the package.
> Which parameter specifies that it has low resistivity?
> Can this be used as a transmission line transformer of a balanced mixer?
>
> Which ferrite material works well for the AM band around 1 MHz?
>
> I can get core #43, 61, and 63.
>
>
> Thanks for the input folks.

I wouldn't use ferrite at all for this application. A suitable iron
powder core would be a lot better:

http://www.amidoncorp.com/aai_ironpowdercores.htm

One of the #15 material cores would be ideal.

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

610. Re: Noise in Ford F-150

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 11:54:03 UTC
From: Scott <acepilot@bloomer.net>
Message-ID: <k_sQb.2656$tU6.3828@reggie.win.bright.net>
Source record: 29197

Well, the truck is going in to Ford this coming week. Needs the CD player replaced and they will install the filter in the fuel tank at no charge, so I might as well have it done. Is anybody aware of any other tech service bulletins for noise? My Ford dealer says if there is a TSB, they will do it as warranty work at no charge. Sure would like to load up on all the RFI bulletins while it's still in warranty!

Scott

"Randy Chavis" <wb4una@aol.com> wrote in message news:20040118065815.22874.00000223@mb-m04.aol.com...
> the fuel pump will run for a few seconds when you turn the key on and then stop
> because it builds up pressure in the line. when you turn the engine over the
> pump will start up again to keep the pressure up for all the injectors.it will
> never stop till you shut the car off . it has a return presure valve in the
> line to return fuel to the tank...bet it is the pump giving you the noise..
>
> randy
>
> ARS: WB4UNA
> Randy Chavis
> 247 Goff Court
> West Columbia
> S.C. 29172
>

611. Re: How good is ferrite 75 material for crystal AM radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 12:26:51 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <YAtQb.28130$OA3.8466509@newsfep2-win.server.ntli.net>
Source record: 29198

> > Yes it is definitely a core T82-75 from the labeling on the package.
> > Which parameter specifies that it has low resistivity?
> > Can this be used as a transmission line transformer of a balanced mixer?
> >
> > Which ferrite material works well for the AM band around 1 MHz?
> >
> > I can get core #43, 61, and 63.
> >
> >
> > Thanks for the input folks.
>
> I wouldn't use ferrite at all for this application. A suitable iron
> powder core would be a lot better:
==========
Am I getting confused ? I thought the designation T82-75 identifies a
powder iron toroid , having a 0.82 inch outer diameter and is made of 75
type (mix)of material.
If ferrite it would be labelled FT82-75.

In my file I keep a snippet from QST ? in which Zack Lau (ARRL Lab)
highlights identification of Ferrite type of materials as follows:
Quote ----------

You may be able to grade your ferrites by resistivity. Just stick an
Ohmmeter across or bead in question and measure its resistance.
The readings you'll may not be narrowly definitive ,but if your parts
collection contains toroids of only a few types ,you may be able to separate
one mix from another according to Table 2.

Table 2
Typical Resistances of Small Ferrite Beads/Toroids

Material / Resistance
43 10 MOhm
61 > 30 MOhm
63 > 30 MOhm
64 > 30 MOhm
72 > 30 MOhm
73 20 KOhm to 100KOhm
75 5 KOhm to 20KOhm

Note by WJ1Z : It's a good idea to color-code your ferrite materials as you
require them (example : mix 43= red , mix61 =blue ,
mix 75 = green . When your cores arrive ,segregate them by mix and working
with each type in turn ,spread each lot on a sheet of newsprint and

spray-paint them (one face will will do) according to your color code .
Be sure to record and save the key !

Unquote ----------

From the above table it shows that with its relatively low resistivity ,mix
75 contains relatively much iron ,which indicates the material is suitable
for low frequencies only , perhaps even not RF.

Frank GM0CSZ / KN6WH

612. winding sheilded coils

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 13:08:05 UTC
From: Jill Fryer <fryer@melbpc.org.au>
Message-ID: <butqnl$o5b$1@possum.melbpc.org.au>
Source record: 29199

Could someone help me to determine how many turns I would need to make
0.68uh and 0.2uh coils, I am totally lost with math so if some kind person
could just give me the number of turns,that would be great the coils in
question are the size that you see in most portable radios
thanks Mark

613. Re: winding sheilded coils

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 13:21:50 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <OjuQb.2554$lg2.915@nwrdny02.gnilink.net>
Source record: 29200

Mark
Send me an email and I'll send a Windows program that should do the job:
joe@roccis.com

Joe
W3JDR
"Jill Fryer" <fryer@melbpc.org.au> wrote in message
news:butqnl$o5b$1@possum.melbpc.org.au...
> Could someone help me to determine how many turns I would need to make
> 0.68uh and 0.2uh coils, I am totally lost with math so if some kind person
> could just give me the number of turns,that would be great the coils in
> question are the size that you see in most portable radios
> thanks Mark
>
>

614. Re: How good is ferrite 75 material for crystal AM radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 13:22:13 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <40127185$0$16734$cc9e4d1f@news.dial.pipex.com>
Source record: 29201

Frank Dinger wrote:

>>>Yes it is definitely a core T82-75 from the labeling on the package.
>>>Which parameter specifies that it has low resistivity?
>>>Can this be used as a transmission line transformer of a balanced mixer?
>>>
>>>Which ferrite material works well for the AM band around 1 MHz?
>>>
>>>I can get core #43, 61, and 63.
>>>
>>>
>>>Thanks for the input folks.
>>
>>I wouldn't use ferrite at all for this application. A suitable iron
>>powder core would be a lot better:
>
> ==========
> Am I getting confused ? I thought the designation T82-75 identifies a
> powder iron toroid , having a 0.82 inch outer diameter and is made of 75
> type (mix)of material.
> If ferrite it would be labelled FT82-75.

The OP said it was ferrite. Assuming he is referring to an Amidon
product 75 is a ferrite mix:

MATERIAL ' J '/75 (ï¿½ = 5000) Low volume resistivity and low core loss
from 1 KHZ to 1MHz. Used for pulse transformers and low level wide band
transformers. Excellent frequency attenuation from 0.5 MHZ to 20 MHz.
Available in toroidal form and ferrite beads as standard off the shelf
in stock. Also available in pot cores, RM cores, E & U cores as custom
ordered parts with lead time for delivery.

I'd say this was quite unsuitable for his purpose. It would be OK for a
wide-band transformer, as he suggests.

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

615. Re: winding sheilded coils

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 13:25:00 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <4012722d$0$16734$cc9e4d1f@news.dial.pipex.com>
Source record: 29202

Jill Fryer wrote:

> Could someone help me to determine how many turns I would need to make
> 0.68uh and 0.2uh coils, I am totally lost with math so if some kind person
> could just give me the number of turns,that would be great the coils in
> question are the size that you see in most portable radios
> thanks Mark
>
>

It depends on the frequency (you need to make sure that the correct core
is used), the core and the size.

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

616. Re: High Inductance Toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 13:42:50 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <3bv310p6onmfvfu11234sgvbafc8694olp@4ax.com>
Source record: 29205

On Fri, 23 Jan 2004 23:40:21 GMT LA8AK@online.no (J M Noeding) wrote:

>On Fri, 23 Jan 2004 15:48:13 +0000, Paul Burridge
><pb@osiris1.notthisbit.co.uk> wrote:
>
>>On Fri, 23 Jan 2004 14:13:09 -0000, "Graham"
>><graham.ogle@ntlworld.com> wrote:
>>
>>>I am trying to make some high value toroids, about 1mH. I have a commercial
>>>one using a half inch core with about 20turns on it to give 3.3mH. Does
>>>anyone know what the core material/description is or an UK source please?
>>>The normal ones such as T37-2s etc only give a few uH.
>>
>>I got some from Bardwells that were about 20mm dia and when
>>close-wound all round with one layer of 0.7mm enamel wire came out at
>>exactly 1mH (which was handy since that was the objective!). Give them
>>a try. They do mail order and are very reasonable.

>my conclusion worth a penny is that it depends on whether you are
>building a transformer or inductor, in the first place the core you
>refer to may be good for a transformer, but suppose it is useless for
>most applications as an inductor

As long as you're talking about an inductor or a transformer operating
at the same frequency, I think any core material that works well for
one will work well for the other.

What the best core material might be for a particular application
depends heavily on the operating frequency.

For the original poster, you might want to look into powdered iron
toroids, assuming your frequency is not too high.

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA
---

617. Re: Coil Spring Solderless Terminals

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 13:42:52 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <aiv310hh2cgt2lqrcns28loa96hursfmb5@4ax.com>
Source record: 29204

On 23 Jan 2004 06:35:56 -0800 kizerian@xmission.com (Bruce Kizerian)
wrote:

>Does anyone know where I can buy IN QUANTITY the coil spring
>solderless terminals commonly used on hobby kits like the "100 in One"
>experimenters kits sold by Radio Shack, etc.?

I'll bet that any number of spring companies would be happy to make
them for you.

I've never seen them offered as a standard product by anyone, but they
MIGHT be out there somewhere.

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA
---

618. Re: Tantalums and test eqpt.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 13:42:54 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <uqv310lk5b3r2ee7nt63gng6qqsl9ue5vd@4ax.com>
Source record: 29203

On Fri, 23 Jan 2004 18:35:51 -0600 "Henry Kolesnik"
<wd5jfr@oklahoma.net> wrote:

>One thing I forgot to ask is how good are old, burned-in tantalums that test
>good if salvaged for reuse from older equipment. Anyone have any data?

I like the tantalums that come in the metal cylindrical cases with the
glass seals. I've never seen a bad one. Look for them at swap meets
and use them instead of small alum electrolytics as a higher
reliabilty replacement.

I've not had a lot of experience with the teardrop tantalums, but I
have seen a few bad ones.

While you will see aluminum electrolytics in all stages of ageing from
perfectly good to dead short or open, my impression of the teardrop
tantalums is that they are either perfectly good or completely bad.
There doesn't seem to be any middle ground.

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA
---

619. Re: Tantalums and test eqpt.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 13:57:27 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <1014uedph745813@corp.supernews.com>
Source record: 29206

It would be nice to find a set of bath tub curves on each kink of old
tantalum. Maybe we'll get enough inof here to sort the good from the bad.
I don't even have a cluse as to how many mfgs there were and how many time
they improved their designs as they experienced failures. Iguess what we
need to know is which one fail themost.
73
hank wd5jfr
"Jim Adney" <jadney@vwtype3.org> wrote in message
news:uqv310lk5b3r2ee7nt63gng6qqsl9ue5vd@4ax.com...
> On Fri, 23 Jan 2004 18:35:51 -0600 "Henry Kolesnik"
> <wd5jfr@oklahoma.net> wrote:
>
> >One thing I forgot to ask is how good are old, burned-in tantalums that
test
> >good if salvaged for reuse from older equipment. Anyone have any data?
>
> I like the tantalums that come in the metal cylindrical cases with the
> glass seals. I've never seen a bad one. Look for them at swap meets
> and use them instead of small alum electrolytics as a higher
> reliabilty replacement.
>
> I've not had a lot of experience with the teardrop tantalums, but I
> have seen a few bad ones.
>
> While you will see aluminum electrolytics in all stages of ageing from
> perfectly good to dead short or open, my impression of the teardrop
> tantalums is that they are either perfectly good or completely bad.
> There doesn't seem to be any middle ground.
>
> -
> --
> Jim Adney jadney@vwtype3.org
> Madison, WI 53711 USA
> --

620. Re: Coil Spring Solderless Terminals

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 15:52:17 UTC
From: MR NO SPAM <NOSPAM@NOSPAM.COM>
Message-ID: <sxwQb.5881$5M.142379@dfw-read.news.verio.net>
Source record: 29207

"Jim Adney" <jadney@vwtype3.org> wrote in message
news:aiv310hh2cgt2lqrcns28loa96hursfmb5@4ax.com...
> On 23 Jan 2004 06:35:56 -0800 kizerian@xmission.com (Bruce Kizerian)
> wrote:
>
> >Does anyone know where I can buy IN QUANTITY the coil spring
> >solderless terminals commonly used on hobby kits like the "100 in One"
> >experimenters kits sold by Radio Shack, etc.?
>
> I'll bet that any number of spring companies would be happy to make
> them for you.
>
> I've never seen them offered as a standard product by anyone, but they
> MIGHT be out there somewhere.
>
> -
> ---
> Jim Adney jadney@vwtype3.org
> Madison, WI 53711 USA
> ---

Seems to me, I've seen some springs for sale via some electronics
companies. Not sure what they titled them as, but I am damned sure I've seen
them! Most of my catalogs are boxed in preparation to move or I'd look
through them to try to find those items. I could be wrong, but it does seem
to me I have seen them! MNS

621. Re: Coil Spring Solderless Terminals

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 16:01:05 UTC
From: MR NO SPAM <NOSPAM@NOSPAM.COM>
Message-ID: <IFwQb.5882$5M.142397@dfw-read.news.verio.net>
Source record: 29208

Sitting here thinking, if the company sells terminal strips, then they probably sell the springs. I've seen them in same category. Try maybe MCM Electronics, JP Martin (Marlin) - sorry brain freeze on this one, Hosfelt, Mouser, Digikey. MNS

"MR NO SPAM" <NOSPAM@NOSPAM.COM> wrote in message news:sxwQb.5881$5M.142379@dfw-read.news.verio.net...
> "Jim Adney" <jadney@vwtype3.org> wrote in message
> news:aiv310hh2cgt2lqrcns28loa96hursfmb5@4ax.com...
> > On 23 Jan 2004 06:35:56 -0800 kizerian@xmission.com (Bruce Kizerian)
> > wrote:
> >
> > >Does anyone know where I can buy IN QUANTITY the coil spring
> > >solderless terminals commonly used on hobby kits like the "100 in One"
> > >experimenters kits sold by Radio Shack, etc.?
> >
> > I'll bet that any number of spring companies would be happy to make
> > them for you.
> >
> > I've never seen them offered as a standard product by anyone, but they
> > MIGHT be out there somewhere.
> >
> > -
> > --
> > Jim Adney jadney@vwtype3.org
> > Madison, WI 53711 USA
> > --
>
> Seems to me, I've seen some springs for sale via some electronics
> companies. Not sure what they titled them as, but I am damned sure I've seen
> them! Most of my catalogs are boxed in preparation to move or I'd look
> through them to try to find those items. I could be wrong, but it does seem
> to me I have seen them! MNS
>
>

622. Re: Homebrew related

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 16:26:30 UTC
From: LA8AK@online.no
Message-ID: <4012709b.60483820@news.online.no>
Source record: 29209

On Fri, 23 Jan 2004 11:32:03 +0100, Tom Twist <tom@twist.no> wrote:

>
>I think they were AC126 (audio) and AF116 (HF) germanium transistors.
>
Philco 2N525 and 2N1147 over there....

--
Amount of SPAM is so large that MailWasher must delete 99% of the incoming mails
Cannot check every email manually. Please use intelligent title for email.
Mails without titles or using just "hi" is deleted

623. Re: How good is ferrite 75 material for crystal AM radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 18:13:57 UTC
From: beginner <beginner@nowhere.com>
Message-ID: <1015df5erkfi6fc@corp.supernews.com>
Source record: 29210

It is FT82-75 and the resistance is only 5 KOhm, so the mix is accurate.

I will have to make use of them in wideband tranmission transformers.
Can you folks suggest a frequency range?

I can get ferrite #61 or #63, but iron core only comes in mix #2 or #6
locally.

Thanks for all the help!

>>Table 2
Typical Resistances of Small Ferrite Beads/Toroids

Material / Resistance
43 10 MOhm
61 > 30 MOhm
63 > 30 MOhm
64 > 30 MOhm
72 > 30 MOhm
73 20 KOhm to 100KOhm
75 5 KOhm to 20KOhm
> The OP said it was ferrite. Assuming he is referring to an Amidon
> product 75 is a ferrite mix:
>
> MATERIAL ' J '/75 (&#65533; = 5000) Low volume resistivity and low core
> loss from 1 KHZ to 1MHz. Used for pulse transformers and low level
> wide band transformers. Excellent frequency attenuation from 0.5 MHZ
> to 20 MHz. Available in toroidal form and ferrite beads as standard
> off the shelf in stock. Also available in pot cores, RM cores, E & U
> cores as custom ordered parts with lead time for delivery.
>
> I'd say this was quite unsuitable for his purpose. It would be OK for
> a wide-band transformer, as he suggests.
>
> Leon

624. Re: How good is ferrite 75 material for crystal AM radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 18:45:09 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <4012bd36$0$28121$cc9e4d1f@news.dial.pipex.com>
Source record: 29211

beginner wrote:

> It is FT82-75 and the resistance is only 5 KOhm, so the mix is accurate.
>
> I will have to make use of them in wideband tranmission transformers.
> Can you folks suggest a frequency range?
>
> I can get ferrite #61 or #63, but iron core only comes in mix #2 or #6
> locally.

Mix #2 should be OK for your crystal set.

With a transmission line transformer you should be able to go up to 100
MHz or more, the core is only important at the lower part of the
frequency range.

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

625. Re: simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 21:03:03 UTC
From: Pete Beals <Pbeals@noaddress.com>
Message-ID: <1015nc7fmh4336e@corp.supernews.com>
Source record: 29212

I like to try the quasi sync circuit with a limiter and product detector on
AM band. Will this work with a TRF receiver?
This probably won't work with weak signals but has anyone tried this?

I'm also looking into a SDR. Basically the computer and soundcard can do
the sync using DSP.
This work be interesting for a HAM or SW receiver.

Pete

626. Re: How good is ferrite 75 material for crystal AM radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 21:11:49 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <4012DF95.E4C1080A@rica.net>
Source record: 29213

beginner wrote:
>
> Yes it is definitely a core T82-75 from the labeling on the package.
> Which parameter specifies that it has low resistivity?
> Can this be used as a transmission line transformer of a balanced mixer?
>
> Which ferrite material works well for the AM band around 1 MHz?
>
> I can get core #43, 61, and 63.
>
> Thanks for the input folks.

Go to the makers catalog (available as a big PDF) at:
http://www.fair-rite.com/fr_catalog-14thed_rev3.pdf
and read about the various types (starting with the parametric
comparison on page 4, including the frequency recommendations under
the low flux density row). Type 43 is normally used in RFI absorbing
devices but has pretty good properties for indictors for low flux
applications up to 10 MHz. Type 60 is recommended for up to 100 MHz,
and type 63 isn't a Fair-Rite type listed in this catalog. In the
same table type 75 is limited to .75 MHz for low flux applications.
Based on this table, alone, I would probably try the type 43.

--
John Popelish

627. Re: How good is ferrite 75 material for crystal AM radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 21:20:10 UTC
From: Sverre Holm <la3za.0junk4me@qsl.net>
Message-ID: <buunidblf1@maud.ifi.uio.no>
Source record: 29214

> > Which ferrite material works well for the AM band around 1 MHz?
> >

Here's what seems like a hi-Q a crystal set using toroids:
http://www.crystalradio.net/contest/paul.html

It uses "two toroid cores, Palomar Engineering T-130, broadcast band frequency material". Unfortunately it doesn't say the kind of core, but from the number of turns and the capacitance I figured that it must be type 26 (yellow/white). I think this is a rather uncommon kind of material, it has one of the highest mu's, 75, compared to mu=10 for type 2 and mu=8 for type 6. Anybody with experience with this kind of material?

Sverre
LA3ZA

628. Re: Coil Spring Solderless Terminals

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 22:33:47 UTC
From: mzenier@eskimo.com
Message-ID: <bv0ung$35n$1@eskinews.eskimo.com>
Source record: 29222

In article <aiv310hh2cgt2lqrcns28loa96hursfmb5@4ax.com>,
Jim Adney <jadney@vwtype3.org> wrote:
>On 23 Jan 2004 06:35:56 -0800 kizerian@xmission.com (Bruce Kizerian)
>wrote:
>
>>Does anyone know where I can buy IN QUANTITY the coil spring
>>solderless terminals commonly used on hobby kits like the "100 in One"
>>experimenters kits sold by Radio Shack, etc.?
>
>I'll bet that any number of spring companies would be happy to make
>them for you.
>
>I've never seen them offered as a standard product by anyone, but they
>MIGHT be out there somewhere.

Vector used to have the T30 and T32 series of terminals that were
spring loaded, but they weren't on their web site when I checked today.
Maybe one of their competitors like Keystone or OK Tool. Or perhaps
some East Asian company. What do to they sell for prototyping stuff
in Hong Kong?

Mark Zenier mzenier@eskimo.com Washington State resident

629. Re: Automotive GPS Radio Interfacing for APRS use?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 22:59:46 UTC
From: "Leland C. Scott" <no-spam@junk-mail.net>
Message-ID: <D_KdnQS3RL11ZY_d4p2dnA@comcast.com>
Source record: 29215

"Steve Nosko"
<suteuve.nosukowicuz@moutouroula.com> wrote in
message news:buhnqg$c15$1@newshost.mot.com...
>
> You kept saying GPRS. I think you meant APRS,
no?

Right. And thanks for the pointer.

--
Leland C. Scott
KC8LDO

ARRL Member
NCI Member

Charter member of the
Lawrence Technological University
Wireless Society W8LTU

630. Re: How good is ferrite 75 material for crystal AM radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 23:05:18 UTC
From: mzenier@eskimo.com
Message-ID: <bv0unk$35q$1@eskinews.eskimo.com>
Source record: 29223

In article <1015df5erkfi6fc@corp.supernews.com>,
beginner <beginner@nowhere.com> wrote:
>It is FT82-75 and the resistance is only 5 KOhm, so the mix is accurate.
>
>I will have to make use of them in wideband tranmission transformers.
>Can you folks suggest a frequency range?
>
>I can get ferrite #61 or #63, but iron core only comes in mix #2 or #6
>locally.

>Thanks for all the help!

Digging out an old Amidon spec. sheet, they used #61 and #33 for their ferrite (antenna) rods. Type #61 for medium wave and up to 10 MHz, and type #33 for VLF.

The real question is "Are you using it in a tuned circuit?", where you want the coil loss to be negligable. If you're making an antenna coil that's tuned with a capacitor for AM broadcast (.54-1.7 MHz), use the type 61.

For wideband transformers, where frequencies are higher than tuned circuit use, Amidon specs type 61 as good for 10-200 MHz, and type 63 as good for 25-200 Mhz. For HF use #43, #77, #72, or #F.

Mark Zenier mzenier@eskimo.com Washington State resident

631. Re: Coil Spring Solderless Terminals

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-24 23:53:56 UTC
From: "Gary S." <Idontwantspam@net>
Message-ID: <591610tarueqcfklfo1cqb9qdt24hp3iln@4ax.com>
Source record: 29216

On Sat, 24 Jan 2004 10:52:17 -0500, "MR NO SPAM" <NOSPAM@NOSPAM.COM>
wrote:

>"Jim Adney" <jadney@vwtype3.org> wrote in message
>news:aiv310hh2cgt2lqrcns28loa96hursfmb5@4ax.com...
>> On 23 Jan 2004 06:35:56 -0800 kizerian@xmission.com (Bruce Kizerian)
>> wrote:
>>
>> >Does anyone know where I can buy IN QUANTITY the coil spring
>> >solderless terminals commonly used on hobby kits like the "100 in One"
>> >experimenters kits sold by Radio Shack, etc.?
>>
>Seems to me, I've seen some springs for sale via some electronics
>companies. Not sure what they titled them as, but I am damned sure I've seen
>them! Most of my catalogs are boxed in preparation to move or I'd look
>through them to try to find those items. I could be wrong, but it does seem
>to me I have seen them! MNS
>
I recall seeing them some years ago, used for breadboarding and
experimentation. Try the usual suspects like Newark.

I would expect them to be problematic at higher frequencies.

Happy trails,
Gary (net.yogi.bear)
---
at the 51st percentile of ursine intelligence

Gary D. Schwartz, Needham, MA, USA
Please reply to: garyDOTschwartzATpoboxDOTcom

632. Re: simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-25 00:31:12 UTC
From: LA8AK@online.no
Message-ID: <4012efdb.17768770@news.online.no>
Source record: 29217

On Sat, 24 Jan 2004 21:03:03 -0000, Pete Beals <Pbeals@noaddress.com>
wrote:

>I like to try the quasi sync circuit with a limiter and product detector on
>AM band. Will this work with a TRF receiver?
>This probably won't work with weak signals but has anyone tried this?
>
>I'm also looking into a SDR. Basically the computer and soundcard can do
>the sync using DSP.
>This work be interesting for a HAM or SW receiver.
>
>Pete
>
It was an article in Wireless World describing AM receiver with
MC1330P8 - suppose it was sort of TRF, but I never had any success
with it, while MC1351P worked far better

-jm
http://home.online.no/~la8ak/c11.htm
--
Amount of SPAM is so large that MailWasher must delete 99% of the incoming mails
Cannot check every email manually.
Please use intelligent title for email.
Mails without titles or using just "hi" are deleted

633. Re: simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-25 03:28:11 UTC
From: Pete Beals <PBeals@noaddress.com>
Message-ID: <1016dub287tp9fe@corp.supernews.com>
Source record: 29218

So all I need is a limiter and a double balanced mixer.
Well I do have a SA602. How does one make the limiter from discrete transistors?

I wish to avoid very old/obsolete ICs.

Pete

634. Re: simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-25 04:59:05 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <buvieppht1@freenet9.carleton.ca>
Source record: 29219

Pete Beals (Pbeals@noaddress.com) writes:
> I like to try the quasi sync circuit with a limiter and product detector on
> AM band. Will this work with a TRF receiver?
> This probably won't work with weak signals but has anyone tried this?
>
An obvious point about using it as a TRF is how much selectivity will
you be putting at the front end?

Any time you are using a mixer to convert down to audio (as with SSB
or synchronous detection of some kind for AM), you can get selectivity
at audio, since it's a frequency translation.

But, if you've just got a limiter open to the world, at the very least
it's going to limit on the strongest local signal. If you don't have
enough front end selectivity, I would think you would get relatively
little tuning ability. The strongest signal will "capture" the limiter,
and that will be the "carrier" that beats against the incoming signal
in the mixer.

When people made synchronous receivers out of the old Signetics analog
PLL ICs, at least the PLL had a lock range that provided "selectivity".
so they could run with little or no front end selectivity. Except for
mixer overload, what you got out of the mixer was limited by the audio
circuitry and your hearing, since only one frequency (plus the image)
could convert down to say 0 to 3KHz from the oscilaltor frequency. The same
applies to direct conversion CW/SSB receivers.

A quasi-synchronous receiver will work the same way, in that the output
of the mixer will be within the audio range from the "carrier" out of
the limiter. But if you have no selectivity on the input to the mixer,
enough to separate out signals, then the strongest signal into the
limiter will prevail.

Much of what I've seen about "quasi-synchronous" detectors have placed
them in the IF of a superheterodyne receiver, where the IF bandwidth
ensures that it only reacts to the wanted signal. The only TRF that
I can think of seeing was in an old Technical Topics book from the RSGB,
where there was an MC1330 (which is a quasi-synchronous detector, for
TV use, though I believe the datasheet simply calls it synchronous)
as the detector, but there was an stage of amplification (I think
an MC1350P) ahead of it, with a couple of stages of tuned circuits.
With a quasi, you do indeed need some TRF before the detector.

Michael VE2BVW

635. am loop

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-25 11:53:18 UTC
From: lou1@westnet.com
Message-ID: <9f565180.0401250353.1c8afba@posting.google.com>
Source record: 29220

am selling a radio shack AM loop. comes with box. only used once.
contact me by email if interested.
Lou1@westnet.com

636. ZL2BMI DSB transceiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-25 12:29:58 UTC
From: David Roper <davidandpearl@m0dad.freeserve.co.uk>
Message-ID: <bv0cj4$6ve$1@news6.svr.pol.co.uk>
Source record: 29221

I am going to build the ZL2BMI DSB QRP transceiver. I would like to build this tx for 40M instead of 80M.
I would like to know how many turns I would need on L1. I would be very interested to hear from anyone who has built this circuit or who has any back issues of this transceiver from Break-in Magazine.
David (M0DAD).

637. Language Translator (Was La chance de votre vie)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-25 17:40:51 UTC
From: AuContraire <TM@primo.net>
Message-ID: <DcTQb.60643$zs4.49104@fed1read01>
Source record: 29224

If you English only types absolutely have to know what a message in another language is saying -- use a language translator like this one at URL: http://babelfish.altavista.com/translate.dyn

Not perfect but gives the essence of it all.

If you post in other than English -- the above URL will translate to English for you if you wish to reach a wider audience.

But perhaps the post below in French was intended for French readers only (:-)

--
73 From Au Contraire

"Marc" <Marc_X4@hotmail.com> wrote in message news:8YSQb.48305$vj.44326@charlie.risq.qc.ca...
> Faite de l'argent facilement avec un commerce internet paliers multiples.
> L'achat de ce commerce comprend sa propre promotion aupr s de 3600 personnes par mois et ne demande aucune connaissance commerciale.
> Tout ce que vous avez faire est de vous inscrire.
> P.S.: Parlez en vos ami(e)s si vous voulez qu'ils vous accompagnent dans votre futur train de vie.
>
> Inscription et informations additionnelles cette adresse:
> http://marcjr.carrefourinternet.com/fr/

638. Re: Tantalums and test eqpt.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-25 20:16:53 UTC
From: Yrrah <harke.smits@hccnet.nl>
Message-ID: <40142039$0$133$3a628fcd@reader1.nntp.hccnet.nl>
Source record: 29225

Hi Henry,

I like what you write about test equipment. I have a nice collection of HP stuff of my own. Maybe even more than 40 items. I like HP because it was well known at my university at that time (the 70ties). Also it is well documented and it can be repaired at times. There are many other good brands available but I prefer HP. On the other hand: a lot of HP equipment needs repair at present. And indeed: the power supply is the culprit in many cases. Either tubes or caps. About tantalum: not much specific experience available over here, but I seem to like the axial metal ones with glass sealed terminations. So keep up the good work!
Btw: is there a site or community to exchange experience on how to repair HP equipment and how to obtain spare parts?
regards,
Harke PA0HRK

Henry Kolesnik <wd5jfr@oklahoma.net> schreef in berichtnieuws
1012f225l61me6e@corp.supernews.com...
>

639. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-25 20:25:08 UTC
From: Ian Stirling <root@mauve.demon.co.uk>
Message-ID: <ECVQb.27631$qx2.3238291@stones.force9.net>
Source record: 29226
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

In sci.electronics.design Tom Bruhns <k7itm@aol.com> wrote:
> "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:<100u2kvskpbroc8@corp.supernews.com>...
>> Over the last few years I've acquired quite a few consumer electronincs pcbs
>> including TVs, VCRs, stereos, etc, so when I discovered that I needed a
>> tantalum to repair some test equipment I was going to salvage a tantalum. I
>> couldn't find one anywhere, so I assume they're too expensive or too
>> unrelaible for high end consumer electronics. A couple of the boards were
>> from my personal stuff purchased new. One example is a MGA Mitsubishi rear
>> projection TV that operated flawlessly for nearly 20 years of daily use.
>> Most of my test equipment comes from hamfests and is surplus after becoming
>> obsolete and non-operative in less than 20 years. That leads me to wonder
>> what the real story is behind tantalum capacitors. What do the experts have
>> to say?

<snip>
> along rather swiftly these days. If all analog TV signals were
> discontinued with only digital available, your old rear projection TV
> would also be obsolete. Test equipment is commonly much more

To take this as an example, set-top boxes to act as a TV tuner will be
available for a long while after analog switchoff.

640. Re: Tantalums and test eqpt.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-25 20:49:46 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <40142BE1.5ABD6F39@earthlink.net>
Source record: 29227

Yrrah wrote:
>
> Hi Henry,
>
> I like what you write about test equipment. I have a nice collection of HP
> stuff of my own. Maybe even more than 40 items. I like HP because it was
> well known at my university at that time (the 70ties). Also it is well
> documented and it can be repaired at times. There are many other good brands
> available but I prefer HP. On the other hand: a lot of HP equipment needs
> repair at present. And indeed: the power supply is the culprit in many
> cases. Either tubes or caps. About tantalum: not much specific experience
> available over here, but I seem to like the axial metal ones with glass
> sealed terminations. So keep up the good work!
> Btw: is there a site or community to exchange experience on how to repair HP
> equipment and how to obtain spare parts?
> regards,
> Harke PA0HRK

news:sci.electronics.equipment has some discussion about test equipment.

--
We now return you to our normally scheduled programming.

Michael A. Terrell
Central Florida

641. FS: Xmtr Tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-25 20:59:13 UTC
From: Walter Treftz <pendragon@netsignia.net>
Message-ID: <40142E02.DE83CBAD@netsignia.net>
Source record: 29228

Contact: Walt Treftz (N4GL) -XXXXXhvalver@hotmail.com-
(352) 637-1755 or XXXXXpendragon@netsignia.net. (take out the X's)

Items are mostly being disposed of by our groups "widow's committee" helping SK estates. Generally, no extra charge for packing and taking to PO/UPS. Large/heavy items requiring special handling taken to a local packing agent at no charge but shipping is responsibilty of buyer. Free delivery in north/central Florida between Ocala and St.Pete/Orlando when one of our group is making the trip. If interested, make a reasonable offer.

Some items are personal equipment of myself or other group members.

Digital pictures available on all items (numbers in parenthesis refer to photo number)
TUBES:

(62) 810, RCA, New, in original carton. Untested.

(63) 810, RCA, New, In original carton. Untested.

(64) 810, RCA, New, in original carton. Untested.

(65) 812, RCA, new, in original carton. Untested.

(66) 812, RCA, new, in original carton. Untested.

(67) 966A, United, new, in original carton. Tear-drop- shaped. Untested.

304TL, New, in original carton. Untested.

642. Re: Tantalums and test eqpt.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-25 21:28:47 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <1018d8o1fufl2d1@corp.supernews.com>
Source record: 29229

There's a Tektronix group on Yahoo Groups that's quite active but I've not seen any on HP ;-)..
We need to keep hoping..
73
hank wd5jfr
"Yrrah" <harke.smits@hccnet.nl> wrote in message news:40142039$0$133$3a628fcd@reader1.nntp.hccnet.nl...
> Hi Henry,
>
> I like what you write about test equipment. I have a nice collection of HP
> stuff of my own. Maybe even more than 40 items. I like HP because it was
> well known at my university at that time (the 70ties). Also it is well
> documented and it can be repaired at times. There are many other good brands
> available but I prefer HP. On the other hand: a lot of HP equipment needs
> repair at present. And indeed: the power supply is the culprit in many
> cases. Either tubes or caps. About tantalum: not much specific experience
> available over here, but I seem to like the axial metal ones with glass
> sealed terminations. So keep up the good work!
> Btw: is there a site or community to exchange experience on how to repair HP
> equipment and how to obtain spare parts?
> regards,
> Harke PA0HRK
>
> Henry Kolesnik <wd5jfr@oklahoma.net> schreef in berichtnieuws
> 1012f225l61me6e@corp.supernews.com...
> >
>
>

643. Re: Language Translator (Was La chance de votre vie)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-25 23:01:44 UTC
From: tdonaly@aol.com
Message-ID: <20040125180144.04580.00000668@mb-m10.aol.com>
Source record: 29230

Au Contraire wrote,
>
>If you English only types absolutely have to know what a message in another
>language is saying -- use a language translator like this one at URL:
>http://babelfish.altavista.com/translate.dyn
>
>Not perfect but gives the essence of it all.
>
>If you post in other than English -- the above URL will translate to English
>for you if you wish to reach a wider audience.
>
>But perhaps the post below in French was intended for French readers only
>(:-)
>
>--
>73 From Au Contraire
>

I have a book around here, somewhere, by Mark Twain entitled "The Jumping Frog, in English, then in French, then clawed back into civilized language once more by patient unremunerated toil." In this book, Mr. Twain writes about an article in a French periodical concerning Mr. Twain's Jumping Frog story. "This gentleman's article is an able one," Mark wrote, "(as articles go, in the French, where they always tangle up everything to that degree that when you start into a sentence you never know whether you are going to come out alive or not)."
I'm not an English only chauvinist. Whenever I come across a posting in French
I politely say "gesundheit" and go on to the next post. After all, there's no honor in
making fun of a man with a cold.
73,
Tom Donaly, KA6RUH

644. Re: Eagle PCB layout question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-26 00:29:48 UTC
From: Richard Hosking <richardh@iinet.net.au>
Message-ID: <4014602d$0$1750$5a62ac22@freenews.iinet.net.au>
Source record: 29231

I am using the old Autotrax program which still works well - see the Airborn Electronics website for details. It has updated video and printer drivers and is free.

Richard

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message news:66so00hf4vpmbpp2bc7holvtvrdb9fugsf@4ax.com...
>
> Hi all,
>
> I'm just playing around with Eagle Lite this evening and cant seem to
> get the thing to connect up components in certain circumstances. I get
> a "this bit isn't a member of that bit" type of error message and the
> program just refuses me to make the connection. Any ideas?
>
> Secondly, I see that Autorouter is disabled in the Lite version. Does
> that mean that the main benefit of using layout software is denied
> me?! I mean, I can spend a few hours making up my own component
> footprints in any old drawing program and position them as I wish.
> What use is Eagle Lite in that case? Or is there something I haven't
> grasped yet?
>
> Thanks,
>
> p.
> --
>
> My opinion is worth what you've paid for it.

645. FS: TV Sweep tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-26 02:44:11 UTC
From: Roy Brock <roybro@sccoast.net>
Message-ID: <bv1v9k$fv4f$1@news3.infoave.net>
Source record: 29232

I have a box of TV sweep tubes to sell: 4-6LB6 (used once to test an amp design), 7-6JS6C, 3-36/40KD6, 1-24JE6, and 1-17JM6, all working when pulled. Make offer...Roy

646. How to cook my zeners properly ? :)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-26 04:23:35 UTC
From: The Eternal Squire <eternalsquire@comcast.net>
Message-ID: <LfCdnfMDW9AbEond4p2dnA@comcast.com>
Source record: 29233

Hi,

I'm going fast and furious into building things, which is the reason I am posting
so much. Latest project is a variable power supply.

Situation: Radio Shack wall transformer with 11 VDC unregulated output is going into an LM371. I want to shunt with a pair of 5.1 V , 1A Zeners in series
so that my adjustable output voltage is repeatable. Presently my Zener series resistor is 180 ohms.

Problem.. I'm frying my zeners!!

What should I be doing differently?

Thanks in advance,

The Eternal Squire

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.564 / Virus Database: 356 - Release Date: 1/19/04

647. Re: How to cook my zeners properly ? :)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-26 05:32:05 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <4014A655.C5F64CC7@rica.net>
Source record: 29234

The Eternal Squire wrote:
>
> Hi,
>
> I'm going fast and furious into building things, which is the reason I am
> posting
> so much. Latest project is a variable power supply.
>
> Situation: Radio Shack wall transformer with 11 VDC unregulated output is
> going into an LM371. I want to shunt with a pair of 5.1 V , 1A Zeners in
> series
> so that my adjustable output voltage is repeatable. Presently my Zener
> series resistor is 180 ohms.
>
> Problem.. I'm frying my zeners!!
>
> What should I be doing differently?

What are you shunting with the zeners? Describe the circuit after the
11 volt DC raw supply.

--
John Popelish

648. Re: How to cook my zeners properly ? :)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-26 12:30:05 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <9O7Rb.15$xF6.8@newsfep1-gui.server.ntli.net>
Source record: 29235

> Situation: Radio Shack wall transformer with 11 VDC unregulated output is
> going into an LM371. I want to shunt with a pair of 5.1 V , 1A Zeners in
> series
> so that my adjustable output voltage is repeatable. Presently my Zener
> series resistor is 180 ohms.
>
> Problem.. I'm frying my zeners!!
>
> What should I be doing differently?
=======================
Would you please indicate where the 2 Zener diodes (in series) are located
in the circuit .
Before or after the LM317
If before the LM317 why ? The LM317 provides excellent regulation even with
fluctuating 'upstream' voltage.
What is the LM317's adjustable output voltage range. And which max current
are you drawing ?

Are you sure the zeners are 5.1 V,1 Ampere and not 1 Watt. If the latter is
the case the permissible current must not exceed 200 mA. .

For getting best reliability ,I would suggest you load LM317 with a current
less than 0.4 Ampere .
If more current is required use a 'wrap around ' PNP power transistor.
This is described and shown on page 1.15 of the book : Experimental Methods
in RF Design ,by W7ZOI,KK7B and W&PUA .

Frank GM0CSZ / KN6WH

649. UHF tank circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-26 19:55:30 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <iora109ob2emkbliqpbglha04cj7j9ie0l@4ax.com>
Source record: 29236
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Hi guys,

I've just been doing some calculations out of sheer curiosity. It
turns out that to make a tank circuit for 450Mhz (which isn't *that*
high a frequency by today's standards) would take 5pF || 25nF. These
are both *very* low values. 5pF is getting perilously close to being
seriously affected by circuit board stray capacitance and 25nF isn't
much better; little more than a couple of turns of wire, I guess.
What does one do in such circumstances? Should one be thinking in
terms of etching these values out of the PCB by the time one gets of
to these frequencies, or is it still acceptable to make them up out of
discrete components?

p
--

The day Microsoft make a product that doesn't
suck, they'll be making vacuum cleaners.

650. Re: UHF tank circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-26 20:13:26 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <401574e7$0$2435$cc9e4d1f@news.dial.pipex.com>
Source record: 29237
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge wrote:
> Hi guys,
>
> I've just been doing some calculations out of sheer curiosity. It
> turns out that to make a tank circuit for 450Mhz (which isn't *that*
> high a frequency by today's standards) would take 5pF || 25nF. These
> are both *very* low values. 5pF is getting perilously close to being
> seriously affected by circuit board stray capacitance and 25nF isn't
> much better; little more than a couple of turns of wire, I guess.
> What does one do in such circumstances? Should one be thinking in
> terms of etching these values out of the PCB by the time one gets of
> to these frequencies, or is it still acceptable to make them up out of
> discrete components?

Don't you mean 5 pF || 25 nH? You could probably use a single turn or a
hairpin (1/2 turn) inductor and capacitor. It's quite workable at 450 MHz.

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

651. Re: UHF tank circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-26 20:40:29 UTC
From: John Larkin <jjlarkin@highSNIPlandTHIStechPLEASEnology.com>
Message-ID: <bbua105r1akc15ot6t74ui46s4ihdt05qr@4ax.com>
Source record: 29238
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 26 Jan 2004 19:55:30 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>Hi guys,
>
>I've just been doing some calculations out of sheer curiosity. It
>turns out that to make a tank circuit for 450Mhz (which isn't *that*
>high a frequency by today's standards) would take 5pF || 25nF. These
>are both *very* low values. 5pF is getting perilously close to being
>seriously affected by circuit board stray capacitance and 25nF isn't
>much better; little more than a couple of turns of wire, I guess.
>What does one do in such circumstances? Should one be thinking in
>terms of etching these values out of the PCB by the time one gets of
>to these frequencies, or is it still acceptable to make them up out of
>discrete components?
>
>p

You can buy surface-mount caps below 1 pF and inductors below 1 nH, so
a discrete LC is perfectly feasible at 450 MHz. Even with a couple of
pF of circuit stuff - say, the gate of a gaasfet or an IC - you should
still be able to make a resonator or a filter up there. A small
trimmer cap or varicap would help nail the resonant frequency.

PCB capacitance for 0805 or 0603-size parts is pretty small, and you
can keep connection inductance in the 1-2 nH range.

Helical resonators are nice, too, as are coaxial ceramic resonators.
450 MHz is sort of in the transition region between discrete and
distributed resonator domains.

John

652. Re: How to cook my zeners properly ? :)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-26 20:46:45 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <bv3ueu$r19$1@newshost.mot.com>
Source record: 29240

You need to first know the maximum and minimum current that your circuit will draw, then you can design the zener part. While this is over simplified, it should give you a start in the right direction:

The zener is sort of a current buffer in that it will absorb the current NOT taken by the load when the load is drawing its minimum current. Start thinking like this:

When the ckt being regulated is drawing maximum current, the series resistor in the zener leg is sized to provide a low zener current. When the ckt is drawing minimum current, all that extra current (the difference between the maximum and minimum current) goes through the zener. If it is too much you either need to get a higher dissipation zener, go to an amplified zener or some other regulator type.

--
Steve N, K,9;d, c. i My email has no u's.

"The Eternal Squire" <eternalsquire@comcast.net> wrote in message news:LfCdnfMDW9AbEond4p2dnA@comcast.com...
> Hi,
>
> I'm going fast and furious into building things, which is the reason I am
> posting
> so much. Latest project is a variable power supply.
>
> Situation: Radio Shack wall transformer with 11 VDC unregulated output is
> going into an LM371. I want to shunt with a pair of 5.1 V , 1A Zeners in
> series
> so that my adjustable output voltage is repeatable. Presently my Zener
> series resistor is 180 ohms.
>
> Problem.. I'm frying my zeners!!
>
> What should I be doing differently?
>
> Thanks in advance,
>
> The Eternal Squire
>
>
> ---
> Outgoing mail is certified Virus Free.
> Checked by AVG anti-virus system (http://www.grisoft.com).
> Version: 6.0.564 / Virus Database: 356 - Release Date: 1/19/04

>
>

653. Re: UHF tank circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-26 20:48:17 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <l2fRb.124$bx.23@nwrdny02.gnilink.net>
Source record: 29239
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul,
Once you get to these frequencies, it's often better and easier to use transmission lines (microstrip) rather than lumped LC components.

What is the application?

Joe
W3JDR

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message news:iora109ob2emkbliqpbglha04cj7j9ie0l@4ax.com...
> Hi guys,
>
> I've just been doing some calculations out of sheer curiosity. It
> turns out that to make a tank circuit for 450Mhz (which isn't *that*
> high a frequency by today's standards) would take 5pF || 25nF. These
> are both *very* low values. 5pF is getting perilously close to being
> seriously affected by circuit board stray capacitance and 25nF isn't
> much better; little more than a couple of turns of wire, I guess.
> What does one do in such circumstances? Should one be thinking in
> terms of etching these values out of the PCB by the time one gets of
> to these frequencies, or is it still acceptable to make them up out of
> discrete components?
>
> p
> --
>
> The day Microsoft make a product that doesn't
> suck, they'll be making vacuum cleaners.

654. Re: UHF tank circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-26 21:27:35 UTC
From: James Fenech <james.fenech@xxxnec.com.au>
Message-ID: <1075152455.800215@proxy.nec.com.au>
Source record: 29241
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Hi Paul,

I'm currently experimenting with VCO circuits (had an earlier thread about varactors). My current prototype uses a MPF5179, a pair of BB909 tuning diodes and a home made inductor. The inductor is about 4 turns on 0.25" centre (air cored), spread out to about 0.4" in length, giving about 150nH. This circuit operates to 350MHz and (if the tuning diode info is OK) indicates strays of less than 1pF. This is built "dead bug" style, and is really my first attempt at anything of this sort of high frequency.

I'm sure with a little care 450MHz is quite achievable.

James.

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message news:iora109ob2emkbliqpbglha04cj7j9ie0l@4ax.com...
> Hi guys,
>
> I've just been doing some calculations out of sheer curiosity. It
> turns out that to make a tank circuit for 450Mhz (which isn't *that*
> high a frequency by today's standards) would take 5pF || 25nF. These
> are both *very* low values. 5pF is getting perilously close to being
> seriously affected by circuit board stray capacitance and 25nF isn't
> much better; little more than a couple of turns of wire, I guess.
> What does one do in such circumstances? Should one be thinking in
> terms of etching these values out of the PCB by the time one gets of
> to these frequencies, or is it still acceptable to make them up out of
> discrete components?
>
> p
> --
>
> The day Microsoft make a product that doesn't
> suck, they'll be making vacuum cleaners.

655. Re: UHF tank circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-26 22:15:36 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <101b4c9asjhnp86@corp.supernews.com>
Source record: 29242
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

I haven't actually built anything out of it, but the ARRL UHF experamenter's manual seems to be well written. Get a copy if you're serious.

In general you get to a frequency/power level where you need to toss the notion of using discrete componants and start using distributed (i.e. some variation of a transmission line) instead. This happens sooner at higher power levels (1500W amplifiers start showing plate lines at 2 meters).

One of these days I _am_ going to build some VHF circuits -- really!

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message news:iora109ob2emkbliqpbglha04cj7j9ie0l@4ax.com...
> Hi guys,
>
> I've just been doing some calculations out of sheer curiosity. It
> turns out that to make a tank circuit for 450Mhz (which isn't *that*
> high a frequency by today's standards) would take 5pF || 25nF. These
> are both *very* low values. 5pF is getting perilously close to being
> seriously affected by circuit board stray capacitance and 25nF isn't
> much better; little more than a couple of turns of wire, I guess.
> What does one do in such circumstances? Should one be thinking in
> terms of etching these values out of the PCB by the time one gets of
> to these frequencies, or is it still acceptable to make them up out of
> discrete components?
>
> p
> --
>
> The day Microsoft make a product that doesn't
> suck, they'll be making vacuum cleaners.

656. Urgent-ish favour required

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-26 22:26:00 UTC
From: Richard <nearlynews_email@ntlworld.com>
Message-ID: <bv444d$o15eq$1@ID-150848.news.uni-berlin.de>
Source record: 29243

Hi

R&L Electronics in Ohio, gives number as 800-221-7735.

I'm in UK and want to phone sales up so I dial 011-800-221-7735. All I get is a single tone.

Can anyone in US just verify that that number is good, ie that it rings?

Thanks.

Rich.

657. Re: Urgent-ish favour required

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-26 22:35:41 UTC
From: Richard <nearlynews_email@ntlworld.com>
Message-ID: <bv44m7$nb0o2$1@ID-150848.news.uni-berlin.de>
Source record: 29244

Richard wrote:
> Hi
>
> R&L Electronics in Ohio, gives number as 800-221-7735.
>
> I'm in UK and want to phone sales up so I dial 011-800-221-7735. All I get
> is a single tone.
>
> Can anyone in US just verify that that number is good, ie that it rings?
>
> Thanks.
>
> Rich.

Actually from the UK I think I should put a 1 in front of the number ie
1-800-221-7735. But still nodice. Just silence. And I have no call barring
on. Weird.

658. Re: Urgent-ish favour required

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-26 22:39:34 UTC
From: mikea@mikea.ath.cx
Message-ID: <bv44v6$n38$3@puck.litech.org>
Source record: 29245

Richard <nearlynews_email@ntlworld.com> wrote:
> Richard wrote:
> > Hi
> >
> > R&L Electronics in Ohio, gives number as 800-221-7735.
> >
> > I'm in UK and want to phone sales up so I dial 011-800-221-7735. All I get
> > is a single tone.
> >
> > Can anyone in US just verify that that number is good, ie that it rings?
> >
> > Thanks.
> >
> > Rich.

> Actually from the UK I think I should put a 1 in front of the number ie
> 1-800-221-7735. But still nodice. Just silence. And I have no call barring
> on. Weird.

I think that US "800" numbers don't always work from outside the US;
I just called them and got their local number:

513-868-6399.

It's gonna cost you, though. *sigh*

--
Mike Andrews
mikea@mikea.ath.cx
Tired old sysadmin

659. Re: Urgent-ish favour required

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-26 22:46:00 UTC
From: Richard <nearlynews_email@ntlworld.com>
Message-ID: <bv45a2$obul1$1@ID-150848.news.uni-berlin.de>
Source record: 29246

Mike Andrews wrote:
> Richard <nearlynews_email@ntlworld.com> wrote:
>> Richard wrote:
>>> Hi
>>>
>>> R&L Electronics in Ohio, gives number as 800-221-7735.
>>>
>>> I'm in UK and want to phone sales up so I dial 011-800-221-7735. All I
>>> get is a single tone.
>>>
>>> Can anyone in US just verify that that number is good, ie that it rings?
>>>
>>> Thanks.
>>>
>>> Rich.
>
>> Actually from the UK I think I should put a 1 in front of the number ie
>> 1-800-221-7735. But still nodice. Just silence. And I have no call
>> barring on. Weird.
>
> I think that US "800" numbers don't always work from outside the US;
> I just called them and got their local number:
>
> 513-868-6399.
>
> It's gonna cost you, though. *sigh*

Aagh, then that is it, the 800 number. Hymph.

Thanks a bunch.

660. Re: UHF tank circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-26 23:06:49 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <lh6b10p5e1v403h21rilltt3fpokl0hikj@4ax.com>
Source record: 29247
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 26 Jan 2004 20:48:17 GMT, "W3JDR" <joe@roccis.com> wrote:

>Paul,
>Once you get to these frequencies, it's often better and easier to use
>transmission lines (microstrip) rather than lumped LC components.
>
>What is the application?

I'm just musing with the idea of building a TX for 70cm. Since it's
probably going to end up with a commercial, ready-built 3 stage 40W
module for the PA., I'm just considering what to use for the last
frequency multiplier and buffer stage...
--

The day Microsoft make a product that doesn't
suck, they'll be making vacuum cleaners.

661. Re: UHF tank circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-26 23:17:50 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <4015a01d$0$28121$cc9e4d1f@news.dial.pipex.com>
Source record: 29248
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge wrote:
> On Mon, 26 Jan 2004 20:48:17 GMT, "W3JDR" <joe@roccis.com> wrote:
>
>
>>Paul,
>>Once you get to these frequencies, it's often better and easier to use
>>transmission lines (microstrip) rather than lumped LC components.
>>
>>What is the application?
>
>
> I'm just musing with the idea of building a TX for 70cm. Since it's
> probably going to end up with a commercial, ready-built 3 stage 40W
> module for the PA., I'm just considering what to use for the last
> frequency multiplier and buffer stage...

Don't construct it like your FSM, please! 8-)

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

662. FR4 Laminate RF losses

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-26 23:43:57 UTC
From: MikeN <mnewman@clear.net.nz>
Message-ID: <6a9b1054ufjvdtg3ls0rnrgi2u0b1ffkvg@4ax.com>
Source record: 29249

Hi

A question.

Would the in-circuit losses for RF equipment operating around 1 - 3 GHz be greater if built on 1.6mm or on 0.8mm FR4 laminate?

In particular, on which laminate thickness would a VCO in this range be easier to get running?

Any explanation for the answers would be helpful.

Thanks

MikeN

663. Fluke 27 display problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 00:11:21 UTC
From: paule@sfu.ca
Message-ID: <bv4ab9$2og$1@morgoth.sfu.ca>
Source record: 29253

My Fluke 27's display is having trouble with some of the segments. Is this a known problem, and is there a solution for it other than sending it back to Fluke, which I doubt it is worth.

cheers, Paul - VA7NT - email: paule@sfu.ca

664. Re: distance of radio transmitter from receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 00:14:27 UTC
From: mikea@mikea.ath.cx
Message-ID: <bv4ah3$t73$1@puck.litech.org>
Source record: 29251

Christopher <christhomas@nospamfast24.net> wrote:
> Hi guys,

> ok, I've got an idea but it's based on determining the distance of a
> transmitter from a receiver, I originally thought about a synchronised
> clock in both units, the transmitter sends the time it has out, by the
> time the receiver unit gets this time a period has passed (probably a
> few millionth's of a second) and a diff time is detemined, combined with
> the speed those waves travel, will reveal the distance.

> however, physics decided this idea wouldnt work, since all
> electromagnetic radiation travels at the speed of light, apparently,
> DAMN, back to the drawing board.

> I'm here to see if anyone has any way they can determine the distance
> from transmitter to receiver, this isnt a great distance either and it
> needs to be fairly, accurate, if it's not possible, it's not possible, I
> just wanted to ask people far cleverer than i.

> signal strength perhaps?

> literally I am talking about a transmitter within a cuboid shaped
> enclosure around 10m maximum and being able to pinpoint that transmitter
> within that enclosure accurately, to around 1cm, perhaps 2cm.

> like I said, if it's not possible, well then hey, thanks anyway, but
> perhaps it is and therefore perhaps my idea will still be workable.

> thanks guys! I'll be waiting for your answers or solutions

You might want to look at how GPS works.

--
I think it likely that when the successor to IPV6 is just about to be deployed
througout the Solar System there will still be null routes and deny table
entries for 205.199.212.0/24 in an uncountable number of places.
-- Michael Rathbun <mdr@mail-abuse.org>

665. Re: UHF tank circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 00:18:17 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.00000027.002a57a6@btinternet.com>
Source record: 29252
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Hi,

Try a hairpin loop.

Transmission lines are still quite large at 450MHz and one less than a quarter-wave will have the inductive reactance necessary to resonate with your 5pF. The beauty of them is that you can tap up and down the line quite easily and variable coupling is a doddle.

Should they work out to be somewhat on the long side for the board, double them over. Some old ECM transmitters I came across had what looked like a conventional centre-tapped tank but which were really rolled up lines.

Cheers - Joe

666. Re: distance of radio transmitter from receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 00:32:55 UTC
From: Joel Kolstad <JKolstad71HatesSpam@Yahoo.Com>
Message-ID: <bv4bjoqlp1@news.oregonstate.edu>
Source record: 29258

Christopher <christhomas@NOSPAMfast24.net> wrote:
> Hi guys,
>
> ok, I've got an idea but it's based on determining the distance of a
> transmitter from a receiver, I originally thought about a synchronised
> clock in both units, the transmitter sends the time it has out, by the
> time the receiver unit gets this time a period has passed (probably a
> few millionth's of a second) and a diff time is detemined, combined with
> the speed those waves travel, will reveal the distance.

Yes, but as you've deduced, the problem is keeping the clocks synchronize.

On the other hand, there's no reason you can't have one unit send out a pulse and begin timing. The second unit receives it, immediate sends a 'reply' pulse, and you stop your clock when the first unit receives that. Now the accuracy is determined by the accuracy of just one clock, the amount of uncertainty in the 'turnaround' time of the second unit... and the variation in the speed of light as a function of athmospheric conditions. (The last one being more of a concern if you're trying to listen to satellites -- GPS receivers run into this problem.)

You can also use multiple transmitters with high-quality clocks and one receiver -- this is what GPS goes. The transmitters send out a message saying, 'I sent this at exactly this time... really I did!' You record on your local clock when you receive those messages and hence can perform triangulation to determine your position. Better yet, if you have yet another transmitter, you can solve for your position as well as the _relative error in your timebase_ and thereby synchronize one (or more) receivers to the high-quality clock in the transmitter. In GPS receivers, this additional satellite is what gets you a 2D fix vs. a 3D fix.

> signal strength perhaps?
> literally I am talking about a transmitter within a cuboid shaped
> enclosure around 10m maximum and being able to pinpoint that transmitter
> within that enclosure accurately, to around 1cm, perhaps 2cm.

Ah, OK, if it's enclosed field strength would be a reasonably reliable indicator. There was an article in Circuit Cellar Ink just a year or so back where a guy did this (and cited references -- the idea has been around for awhile), but it's sort of the oppposite of what you suggest: You stick large (transmitting) coils at the edges of your box and then detect the signal strength on a small receiver. 1cm in 10m is 1 part in 1000, which I would gander is right about in the middle of 'trivial' and 'pushing impossible.'

There are also '3D' computer mice (mouses?) out there that use a couple of ultrasonic receivers on the 'mouse pad' and perform triangulation after listening for the mouse's transmission. Same idea as with RF, but easier because sound waves are so much slower than electromagnetic waves -- times are measured in microseconds or milliseconds rather than picosecond and nanoseconds!

---Joel Kolstad

667. Re: Fluke 27 display problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 00:54:37 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <101bdmk4ktu8n0d@corp.supernews.com>
Source record: 29254

If it's a LCD display you might be able to fix it by opening the unit up , pulling out the lcd carefully and cleaning the contacts with a clean pencil eraser.
73
hank wd5jfr
"Paul Erickson" <paule@sfu.ca> wrote in message news:bv4ab9$2og$1@morgoth.sfu.ca...
> My Fluke 27's display is having trouble with some of the segments. Is this a known
> problem, and is there a solution for it other than sending it back to Fluke, which
> I doubt it is worth.
>
> cheers, Paul - VA7NT - email: paule@sfu.ca
>
>

668. Re: distance of radio transmitter from receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 00:55:44 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <101bdojk7sodsb4@corp.supernews.com>
Source record: 29255

That's basically how GPS works, except that you need more than one transmitter, or veddy expensive clocks in the receiver. Basically with GPS you receive accurate time signals from four satallites. Since your receiver doesn't know the time or it's position you have four equations (from four satellites) in four unknowns and voila! you have an answer. You can do differential GPS down to millimeter accuracy if you sense the phase of the carrier.

Loran uses the same basic concepts (synchronized transmitters, speed of light, yadda yadda), but it asks you to sense the phase difference between a master and a slave TX, and it isn't nearly so accurate.

"Christopher" <christhomas@NOSPAMfast24.net> wrote in message news:bv48fh013ls@enews2.newsguy.com...
> Hi guys,
>
> ok, I've got an idea but it's based on determining the distance of a
> transmitter from a receiver, I originally thought about a synchronised
> clock in both units, the transmitter sends the time it has out, by the
> time the receiver unit gets this time a period has passed (probably a
> few millionth's of a second) and a diff time is detemined, combined with
> the speed those waves travel, will reveal the distance.
>
> however, physics decided this idea wouldnt work, since all
> electromagnetic radiation travels at the speed of light, apparently,
> DAMN, back to the drawing board.
>
> I'm here to see if anyone has any way they can determine the distance
> from transmitter to receiver, this isnt a great distance either and it
> needs to be fairly, accurate, if it's not possible, it's not possible, I
> just wanted to ask people far cleverer than i.
>
> signal strength perhaps?
>
> literally I am talking about a transmitter within a cuboid shaped
> enclosure around 10m maximum and being able to pinpoint that transmitter
> within that enclosure accurately, to around 1cm, perhaps 2cm.
>
> like I said, if it's not possible, well then hey, thanks anyway, but
> perhaps it is and therefore perhaps my idea will still be workable.
>
> thanks guys! I'll be waiting for your answers or solutions
>
> kosh

669. Re: Fluke 27 display problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 01:02:48 UTC
From: "Gary P. Fiber" <g.fiber@verizon.net>
Message-ID: <l1eb109pi4vu96viqpucfpb3pthuf7d9r5@4ax.com>
Source record: 29256

On Tue, 27 Jan 2004 00:11:21 +0000 (UTC), paule@sfu.ca (Paul Erickson)
wrote:

>My Fluke 27's display is having trouble with some of the segments. Is this a known
>problem, and is there a solution for it other than sending it back to Fluke, which
>I doubt it is worth.
>
>cheers, Paul - VA7NT - email: paule@sfu.ca
>

I looked on the www.fluke.com web site and it says the Fluke 27 has a
limited lifetime warranty. http://www.fluke.com/service/warranty.asp
Might do well to drop them an email with your meters serial number
and description of the problem. I had a Fluke 75 from my job repaired
over a year ago and it was still under warranty. The job owned it for
over 3 years before I got there.

Gary K8IZ
Washington State Resident
Registered Linux User # 312991

670. Re: How to cook my zeners properly ? :)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 02:37:24 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <op-dnfKmL_f7XIjdRVn-tA@ctc.net>
Source record: 29257

>
> Situation: Radio Shack wall transformer with 11 VDC unregulated output is
> going into an LM371. I want to shunt with a pair of 5.1 V , 1A Zeners in
> series
> so that my adjustable output voltage is repeatable. Presently my Zener
> series resistor is 180 ohms.
>
> Problem.. I'm frying my zeners!!
>
> What should I be doing differently?

Are you sure the zeners are in the correct polarity ? Also I have not
looked at the way zeners are speced lately but aren't they specified as
Watts instead of Amps ?

671. distance of radio transmitter from receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 02:38:13 UTC
From: Christopher <christhomas@NOSPAMfast24.net>
Message-ID: <bv48fh013ls@enews2.newsguy.com>
Source record: 29250

Hi guys,

ok, I've got an idea but it's based on determining the distance of a transmitter from a receiver, I originally thought about a synchronised clock in both units, the transmitter sends the time it has out, by the time the receiver unit gets this time a period has passed (probably a few millionth's of a second) and a diff time is detemined, combined with the speed those waves travel, will reveal the distance.

however, physics decided this idea wouldnt work, since all electromagnetic radiation travels at the speed of light, apparently, DAMN, back to the drawing board.

I'm here to see if anyone has any way they can determine the distance from transmitter to receiver, this isnt a great distance either and it needs to be fairly, accurate, if it's not possible, it's not possible, I just wanted to ask people far cleverer than i.

signal strength perhaps?

literally I am talking about a transmitter within a cuboid shaped enclosure around 10m maximum and being able to pinpoint that transmitter within that enclosure accurately, to around 1cm, perhaps 2cm.

like I said, if it's not possible, well then hey, thanks anyway, but perhaps it is and therefore perhaps my idea will still be workable.

thanks guys! I'll be waiting for your answers or solutions

kosh

672. Re: FR4 Laminate RF losses

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 04:25:37 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <101bq2468ruqh24@corp.supernews.com>
Source record: 29259

Loss will be greater on the thicker board, because a greater fraction of the fields surrounding traces and components will be in the board material as opposed to being in the air. Having less field in the board material will also make your circuit less sensitive to the temperature and humidity dependency of the board material. The actual amount of loss or temperature/humidity sensitivity depends on a whole host of factors, so it's hard to say how much difference it'll really make in practice.

Roy Lewallen, W7EL

MikeN wrote:
> Hi
>
> A question.
>
> Would the in-circuit losses for RF equipment operating around 1 - 3
> GHz be greater if built on 1.6mm or on 0.8mm FR4 laminate?
>
> In particular, on which laminate thickness would a VCO in this range
> be easier to get running?
>
> Any explanation for the answers would be helpful.
>
> Thanks
>
> MikeN

673. Re: FR4 Laminate RF losses

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 04:38:51 UTC
From: Rick Karlquist N6RK <richard@karlquist.removethis.com>
Message-ID: <vXIRb.127882$nt4.569693@attbi_s51>
Source record: 29260

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:101bq2468ruqh24@corp.supernews.com...
> Loss will be greater on the thicker board, because a greater fraction of
> the fields surrounding traces and components will be in the board
> material as opposed to being in the air. Having less field in the board

This is correct as far as dielectric loss is concerned, but copper resistive
loss decreases as the board gets thicker. Which one will dominate depends
on frequency and characteristic impedance. At low frequencies, dielectric
loss will probably dominate. At high enough frequencies,
copper loss will dominate. For low enough impedance traces, the
field will be mostly in the air for either board thickness. Complex
problem to analyze.

Rick N6RK

674. Re: Urgent-ish favour required

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 04:52:58 UTC
From: bunnydawg <r.heenan@sympatico.ca>
Message-ID: <G8mRb.8746$mf4.658466@news20.bellglobal.com>
Source record: 29262

```
Seems to work in Canada. Where was i calling again lol
Robert
VE3MNK
"Richard" <nearlynews_email@ntlworld.com> wrote in message
news:bv45a2$obul1$1@ID-150848.news.uni-berlin.de...
> Mike Andrews wrote:
> > Richard <nearlynews_email@ntlworld.com> wrote:
> >> Richard wrote:
> >>> Hi
> >>>
> >>> R&L Electronics in Ohio, gives number as 800-221-7735.
> >>>
> >>> I'm in UK and want to phone sales up so I dial 011-800-221-7735. All I
> >>> get is a single tone.
> >>>
> >>> Can anyone in US just verify that that number is good, ie that it
rings?
> >>>
> >>> Thanks.
> >>>
> >>> Rich.
> >
> >> Actually from the UK I think I should put a 1 in front of the number ie
> >> 1-800-221-7735. But still nodice. Just silence. And I have no call
> >> barring on. Weird.
> >
> > I think that US "800" numbers don't always work from outside the US;
> > I just called them and got their local number:
> >
> > 513-868-6399.
> >
> > It's gonna cost you, though. *sigh*
>
> Aagh, then that is it, the 800 number. Hymph.
>
> Thanks a bunch.
>
>
```

675. Re: Urgent-ish favour required

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 05:00:27 UTC
From: manny <manny@mannynospamers.com>
Message-ID: <4015F06A.8E5C294C@mannynospamers.com>
Source record: 29261

hello rich,

just use their website / email and save on the phone calls !

http://randl.com/

73 manny

Richard wrote:

> Hi
>
> R&L Electronics in Ohio, gives number as 800-221-7735.
>
> I'm in UK and want to phone sales up so I dial 011-800-221-7735. All I get
> is a single tone.
>
> Can anyone in US just verify that that number is good, ie that it rings?
>
> Thanks.
>
> Rich.

676. Re: Urgent-ish favour required

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 05:27:06 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <bv4srahfs1@freenet9.carleton.ca>
Source record: 29263

"bunnydawg" (r.heenan@sympatico.ca) writes:
> Seems to work in Canada. Where was i calling again lol
> Robert
> VE3MNK

But, it makes sense that some businesses in the US would want
Canadians to have access to a US 1-800 number.

On the other hand, this is not automatic. Plenty of times I've
heard a 1-800 number mentioned on the radio, and then the host
says "wait, that's not useable from Canada".

Michael VE2BVW

> "Richard" <nearlynews_email@ntlworld.com> wrote in message
> news:bv45a2$obul1$1@ID-150848.news.uni-berlin.de...
>> Mike Andrews wrote:
>> > Richard <nearlynews_email@ntlworld.com> wrote:
>> >> Richard wrote:
>> >>> Hi
>> >>>
>> >>> R&L Electronics in Ohio, gives number as 800-221-7735.
>> >>>
>> >>> I'm in UK and want to phone sales up so I dial 011-800-221-7735. All I
>> >>> get is a single tone.
>> >>>
>> >>> Can anyone in US just verify that that number is good, ie that it
> rings?
>> >>>
>> >>> Thanks.
>> >>>
>> >>> Rich.
>> >>
>> >> Actually from the UK I think I should put a 1 in front of the number ie
>> >> 1-800-221-7735. But still nodice. Just silence. And I have no call
>> >> barring on. Weird.
>> >
>> > I think that US "800" numbers don't always work from outside the US;
>> > I just called them and got their local number:
>> >
>> > 513-868-6399.
>> >
>> > It's gonna cost you, though. *sigh*
>>
>> Aagh, then that is it, the 800 number. Hymph.

>>
>> Thanks a bunch.
>>
>>
>
>

677. Re: Fluke 27 display problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 05:49:11 UTC
From: paule@sfu.ca
Message-ID: <bv4u4n$rj9$1@morgoth.sfu.ca>
Source record: 29264

"Henry Kolesnik" <wd5jfr@oklahoma.net> writes:
Thanks very much.

cheers, Paul

>If it's a LCD display you might be able to fix it by opening the unit up ,
>pulling out the lcd carefully and cleaning the contacts with a clean pencil
>eraser.
>73
>hank wd5jfr
>"Paul Erickson" <paule@sfu.ca> wrote in message
>news:bv4ab9$2og$1@morgoth.sfu.ca...
>> My Fluke 27's display is having trouble with some of the segments. Is this
>a known
>> problem, and is there a solution for it other than sending it back to
>Fluke, which
>> I doubt it is worth.
>>
>> cheers, Paul - VA7NT - email: paule@sfu.ca
>>
>>

678. Re: Fluke 27 display problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 05:50:17 UTC
From: paule@sfu.ca
Message-ID: <bv4u6prkd1@morgoth.sfu.ca>
Source record: 29265

Gary P. Fiber <g.fiber@verizon.net> writes:
I have sent them an email. Thanks.

cheers, Paul

>On Tue, 27 Jan 2004 00:11:21 +0000 (UTC), paule@sfu.ca (Paul Erickson)
>wrote:

>>My Fluke 27's display is having trouble with some of the segments. Is this a known
>>problem, and is there a solution for it other than sending it back to Fluke, which
>>I doubt it is worth.
>>
>>cheers, Paul - VA7NT - email: paule@sfu.ca
>>
>I looked on the www.fluke.com web site and it says the Fluke 27 has a
>limited lifetime warranty. http://www.fluke.com/service/warranty.asp
> Might do well to drop them an email with your meters serial number
>and description of the problem. I had a Fluke 75 from my job repaired
>over a year ago and it was still under warranty. The job owned it for
>over 3 years before I got there.

>Gary K8IZ
>Washington State Resident
>Registered Linux User # 312991

679. Re: Urgent-ish favour required

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 06:06:12 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <4015FFC7.1AC3E878@earthlink.net>
Source record: 29266

Michael Black wrote:
>
> "bunnydawg" (r.heenan@sympatico.ca) writes:
> > Seems to work in Canada. Where was i calling again lol
> > Robert
> > VE3MNK
>
> But, it makes sense that some businesses in the US would want
> Canadians to have access to a US 1-800 number.
>
> On the other hand, this is not automatic. Plenty of times I've
> heard a 1-800 number mentioned on the radio, and then the host
> says "wait, that's not useable from Canada".

Some 800 numbers only work within the state where the number is
located.

--
We now return you to our normally scheduled programming.

Michael A. Terrell
Central Florida

680. APRS

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 06:51:03 UTC
From: lappi <ve6gte@eidnet.org>
Message-ID: <rTnRb.290766$JQ1.159748@pd7tw1no>
Source record: 29267

What program can I use to work APRS with a 386
32 MHZ computer ?
I there any programs that I can download off the net ?
Grateful for any info on this subject. Lappi

681. Re: distance of radio transmitter from receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 07:10:40 UTC
From: Sverre Holm <la3za.0junk4me@qsl.net>
Message-ID: <bv52tloia1@maud.ifi.uio.no>
Source record: 29268

> literally I am talking about a transmitter within a cuboid shaped
> enclosure around 10m maximum and being able to pinpoint that transmitter
> within that enclosure accurately, to around 1cm, perhaps 2cm.

This is a typical application of an acoustic positioning system. With a speed of sound of about 340 m/s, this is feasible. I have made such a system with acoustic tags on 40 kHz using 8 receiver nodes in the room. That's more than required, but it gives enough redundancy to be robust against shadowing as things move around in the room. Accuracy is in the 1-2 cm range.

--
Sverre Holm, LA3ZA
---
www.qsl.net/la3za

682. Re: distance of radio transmitter from receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 07:53:31 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <ei3c101u47qpg7b9ukspfdbjk4kaj8ners@4ax.com>
Source record: 29269

On Mon, 26 Jan 2004 16:55:44 -0800, "Tim Wescott"
<tim@wescottnospamdesign.com> wrote:

>That's basically how GPS works, except that you need more than one
>transmitter, or veddy expensive clocks in the receiver. Basically with GPS
>you receive accurate time signals from four satallites. Since your receiver
>doesn't know the time or it's position you have four equations (from four
>satellites) in four unknowns and voila! you have an answer. You can do
>differential GPS down to millimeter accuracy if you sense the phase of the
>carrier.

Since the measurement should be done in a confined space, why not
switch the roles and use one transmitter on the moving object and four
receivers on known fixed locations around the perimeter of that space?

With the receivers connected by cables receiving a common clock
signal, the accuracy of the clock is not important, contrary to the
situation in GPS, in which the four satellites must have atomic clocks
to have a common time base.

>Loran uses the same basic concepts (synchronized transmitters, speed of
>light, yadda yadda), but it asks you to sense the phase difference between a
>master and a slave TX, and it isn't nearly so accurate.

Space probe ranging is done by sending a high data rate pseudo noise
sequence from earth to the probe, in which a simple frequency
translation is done with a high accuracy local oscillator to a
different frequency and sent back to earth. From this, the total
earth-probe-earth phase difference of the PRN sequence (and possibly
also the total RF phase difference) can be determined and hence also
the distance.

However, in this case the accuracy requirement was 1 cm, so I guess
that at least 10 GHz (3 cm) radiation should be used.

Paul

683. Re: How to cook my zeners properly ? :)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 08:06:55 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <VxdlPiFfwhFAFAzF@ifwtech.co.uk>
Source record: 29270

The Eternal Squire wrote:
>I'm going fast and furious into building things, which is the reason I
>am posting so much. Latest project is a variable power supply.
>
>Situation: Radio Shack wall transformer with 11 VDC unregulated output
>is
>going into an LM371. I want to shunt with a pair of 5.1 V , 1A Zeners
>in series so that my adjustable output voltage is repeatable. Presently
>my Zener series resistor is 180 ohms.
>
>Problem.. I'm frying my zeners!!
>

Two 5.1V zeners in series, fed through 180R from 11V DC, can only be dissipating about 20 milliwatts each. In that circuit, they *cannot* fry.

Conclusion: something in the way you described the circuit *must* be incorrect. Once you've realised that, the problem shouldn't be hard to find.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

684. Re: FR4 Laminate RF losses

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 08:34:06 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <NiVTLkH+JiFAFAhk@ifwtech.co.uk>
Source record: 29271

Rick Karlquist N6RK wrote:
>"Roy Lewallen" <w7el@eznec.com> wrote in message
>news:101bq2468ruqh24@corp.supernews.com...
>> Loss will be greater on the thicker board, because a greater fraction of
>> the fields surrounding traces and components will be in the board
>> material as opposed to being in the air. Having less field in the board
>
>This is correct as far as dielectric loss is concerned, but copper resistive
>loss decreases as the board gets thicker. Which one will dominate depends
>on frequency and characteristic impedance. At low frequencies, dielectric
>loss will probably dominate. At high enough frequencies,
>copper loss will dominate. For low enough impedance traces, the
>field will be mostly in the air for either board thickness. Complex
>problem to analyze.
>
>
Yes, all of the above... and 0.8mm ("1/32in") FR4 also has many
practical advantages for home constructors.

One is that unlike the regular 1.6mm board, you can cut 0.8mm FR4 easily
with hand shears - or even strong scissors - without significantly
damaging either the board, the shears or yourself.

The thinner material is not as resistant to flexing as 1.6mm - it's
about as flexible as a credit card - but that's still strong enough for
most purposes. If it's an RF circuit, and you're going to add shielding
walls of hobby brass strip all around the outside, the resulting
assembly will be very rigid.

50-ohm microstrip on 0.8mm FR4 is about half its normal width on 1.6mm,
which makes it a much better match (in all senses) to the width of the
SMD components hanging off the ends. It's still wide enough to make the
impedance reasonably insensitive to HB fabrication tolerances.

Since 0.8mm FR4 is the basic material of multi-layer boards, increasing
numbers of PCB materials suppliers and board makers can now offer 0.8mm.

In the UK, Mega Electronics supply both SS and DS photo-resist-coated
0.8mm FR4 (and also many other specialist PCB-making materials):
http://www.megauk.com

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

685. Re: UHF tank circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 10:28:22 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <3ldc10dlq4pbca8snci3fncmeu5a5dlk0e@4ax.com>
Source record: 29272
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 26 Jan 2004 23:17:50 +0000, Leon Heller <aqzf13@dsl.pipex.com>
wrote:

>
>
>Paul Burridge wrote:
>> On Mon, 26 Jan 2004 20:48:17 GMT, "W3JDR" <joe@roccis.com> wrote:
>>
>>
>>>Paul,
>>>Once you get to these frequencies, it's often better and easier to use
>>>transmission lines (microstrip) rather than lumped LC components.
>>>
>>>What is the application?
>>
>>
>> I'm just musing with the idea of building a TX for 70cm. Since it's
>> probably going to end up with a commercial, ready-built 3 stage 40W
>> module for the PA., I'm just considering what to use for the last
>> frequency multiplier and buffer stage...
>
>Don't construct it like your FSM, please! 8-)

Hehe! No chance. :-)
On the subject of PA modules for the 400-500Mhz range, would anyone
care to recommend a suitable manufacturer?
--

The day Microsoft make a product that doesn't
suck, they'll be making vacuum cleaners.

686. Re: FR4 Laminate RF losses

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 13:13:13 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <101covb4okbd192@corp.supernews.com>
Source record: 29273

What's the mechanism for the copper loss decreasing as the board gets thicker? Of course, if you assume that the traces consist only of microstrip or stripline transmission lines with some fixed impedance, then the line width will be greater on the thicker material, resulting in lower loss. Is that the rationale, or is there some other phenomenon at work?

Roy Lewallen, W7EL

Rick Karlquist N6RK wrote:
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:101bq2468ruqh24@corp.supernews.com...
>
>>Loss will be greater on the thicker board, because a greater fraction of
>>the fields surrounding traces and components will be in the board
>>material as opposed to being in the air. Having less field in the board
>
>
> This is correct as far as dielectric loss is concerned, but copper resistive
> loss decreases as the board gets thicker. Which one will dominate depends
> on frequency and characteristic impedance. At low frequencies, dielectric
> loss will probably dominate. At high enough frequencies,
> copper loss will dominate. For low enough impedance traces, the
> field will be mostly in the air for either board thickness. Complex
> problem to analyze.
>
> Rick N6RK
>
>

687. Re: Urgent-ish favour required

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 14:11:25 UTC
From: Alex Flinsch <alex@localhost.localdomain>
Message-ID: <slrnc1cslc.92v.alex@homer.linux1.lan>
Source record: 29274

In article <bv444d$o15eq$1@ID-150848.news.uni-berlin.de>, Richard wrote:
> Hi
>
> R&L Electronics in Ohio, gives number as 800-221-7735.
>
> I'm in UK and want to phone sales up so I dial 011-800-221-7735. All I get

The 8xx number is a toll free number -- the terminating location pays for the call. When the number is originally provisioned by the telco that is providing the service, the client can specify locations that they are willing to pay from. Typical combinations are instate only, USA only USA/Canada/Mexico/Carribean. R&L is probably rejecting any inbound calls originating ovewrseas.

Alex / AB2RC
(10+ years in Telco Billing applications -- primarly 800 & LD)

688. Re: distance of radio transmitter from receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 17:42:22 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <101d8nr1h740vc6@corp.supernews.com>
Source record: 29275

You don't necessesarily need to have a carrier wavelength smaller than the distance you want to measure, as long as you can accurately measure phase. Assuming that you could measure phase to 10 degrees, for instance, a 1cm accuracy would only require 900MHz (33cm).

Surveyor-quality differential GPS uses the 2.4GHz GPS carrier and measures the differences in the carrier phase (not the phase of the pseudo-random sequence) to get sub-cm accuracies.

"Paul Keinanen" <keinanen@sci.fi> wrote in message
news:ei3c101u47qpg7b9ukspfdbjk4kaj8ners@4ax.com...
> On Mon, 26 Jan 2004 16:55:44 -0800, "Tim Wescott"
> <tim@wescottnospamdesign.com> wrote:

-- snip --

> However, in this case the accuracy requirement was 1 cm, so I guess
> that at least 10 GHz (3 cm) radiation should be used.
>
> Paul
>

689. Re: Coil Spring Solderless Terminals

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 17:47:17 UTC
From: averyfineman@aol.com
Message-ID: <20040127124717.07984.00000288@mb-m22.aol.com>
Source record: 29276

In article <bv0ung$35n$1@eskinews.eskimo.com>, mzenier@eskimo.com (Mark Zenier) writes:

>In article <aiv310hh2cgt2lqrcns28loa96hursfmb5@4ax.com>,
>Jim Adney <jadney@vwtype3.org> wrote:
>>On 23 Jan 2004 06:35:56 -0800 kizerian@xmission.com (Bruce Kizerian)
>>wrote:
>>
>>>Does anyone know where I can buy IN QUANTITY the coil spring
>>>solderless terminals commonly used on hobby kits like the "100 in One"
>>>experimenters kits sold by Radio Shack, etc.?
>>
>>I'll bet that any number of spring companies would be happy to make
>>them for you.
>>
>>I've never seen them offered as a standard product by anyone, but they
>>MIGHT be out there somewhere.
>
>Vector used to have the T30 and T32 series of terminals that were
>spring loaded, but they weren't on their web site when I checked today.
>Maybe one of their competitors like Keystone or OK Tool. Or perhaps
>some East Asian company. What do to they sell for prototyping stuff
>in Hong Kong?

A possible solution is (if those are still made), the "springs" used in cable harness wiring boards. Those are conventional springs with wide spacing, the ends slammed into nail-like points. When literally hammered into a wooden board, the springs still allow some flexure enough to hold an insulated wire in place.

Not a good solution since the turns on the spring are wide and I've never seen the spring surface plated with anything resisting corrosion. Those are (or were) quite cheap but available only from a few vendors. [I was in R&D, not in production...]

The push-into-place, hold-wire-ends-by-friction prototype bread-boards seem to be quite popular with hobbyists. Most of those I've seen are made offshore. Those are easier to use, hold as tightly as cable harness springs and have their own "backing board."

Len Anderson
retired (from regular hours) electronic engineer person

690. Re: distance of radio transmitter from receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 18:10:20 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <bv69ln$16r$1@newshost.mot.com>
Source record: 29278

Yep! acoustic is one. another is infrared

Over this short distance RF travel time is in the 30 nano second range.
This requires some pretty good timing measurements. Sound, on the other
hand, has a speed of around 30 mili seconds for 10M (30 ft).

Something I wanted to do for a long time is a model rocket altitude system.
Rocket has a one transistor 10M Rx (have the circuit around here from some
1960's Pop Electronics for a 1 tranny FM broadcast Rx) and a one or two
transistor 2M Tx (FM) -- rocket antenna easier.. Ground station on 10M
(lots of power available for the wooden rocket Rx) transmits a TONE (not a
pulse). Rocket transponds (retransmits it on 2M). Measure the zero
crossing time delay and subtract the overhead time. With proper (and
simple) digital design, you can have a digital readout in feet, inches,
whatever. With a tone, common ham radios are just fine.
With audio, pulses are easy except how do you keep the target from hearing
it's own echo and "oscillating by itself...?

or use subcarriers - this is a little harder. Transmit an FM modulated tone
(carrier, say 10KHz, tone 1KHz) and transponding it back on another
carrier, say 15 KHz.

Who was it that used to sell the sonar modules from the cameras for
experimentation

acoustic

"Sverre Holm" <la3za.0junk4me@qsl.net> wrote in message
news:bv52tloia1@maud.ifi.uio.no...
> > literally I am talking about a transmitter within a cuboid shaped
> > enclosure around 10m maximum and being able to pinpoint that transmitter
> > within that enclosure accurately, to around 1cm, perhaps 2cm.
>
> This is a typical application of an acoustic positioning system. With a
> speed of sound of about 340 m/s, this is feasible. I have made such a
system
> with acoustic tags on 40 kHz using 8 receiver nodes in the room. That's
more
> than required, but it gives enough redundancy to be robust against
shadowing
> as things move around in the room. Accuracy is in the 1-2 cm range.
>
> --
> Sverre Holm, LA3ZA
> ---------------------------------
> www.qsl.net/la3za

>
>
>
>

691. Re: APRS

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 18:19:12 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <bv6a68$1vp$1@newshost.mot.com>
Source record: 29279

Do a search. There's all kinds of stuff out there. 32 MHz might be a bit
slow, but DOSAPRS may be ok. Search on APRS or WinAPRS.

Here are some to start: The last is really neat (like the others aren't)

"lappi" <ve6gte@eidnet.org> wrote in message
news:rTnRb.290766$JQ1.159748@pd7tw1no...
> What program can I use to work APRS with a 386
> 32 MHZ computer ?.... Lappi

<http://aprs.rutgers.edu/DOSAPRS/DF.TXT> >APRS and DF

<http://members.aol.com/joek0ov/dopp2aprs.html> >Doppler-to-APRS Joel/K0OV

APRS
<http://www.nwaprs.org/> >Northwest APRS & WebRing

<http://www.tawg.org/> Tri-State APRS Working Group

<http://www.ew.usna.edu/~bruninga/index.html>
APRS Bob Bruninga's

<http://www.byonics.com/tinytrak> Mini TNC Pic Chip - Byonics

<http://www.users.bigpond.net.au/vk4go/aprs.htm>
aprs - UK

<http://www.nwaprs.org/aprssettings.htm>
NW APRS APRS TNC settings

<http://wes.johnston.net/aprs> The KD4RDB APRS Homepage

<http://web.usna.navy.mil/~bruninga/aprs.html>
APRS - Navy

<http://www.aprs.net> APRS: Net

<http://aprs.rutgers.edu> APRS - Rutgers

<http://www.wa3hrl.com/link700/index.html>
link700 Page

On Line tracking sites
<http://www.findu.com> FindU Home

<http://www.findu.com/cgi-bin/find.cgi?call=k9dci-2&radar=***>
Loc & Radar image of K9DCI-2 Location

<http://www.findu.com/cgi-bin/map-near.cgi?call=k9dci-2>
Show who's Near k9dci-2

<http://www.findu.com/cgi-bin/track1.cgi?call=k9dci-2>
Tracking of K9DCI-2

<http://www.findu.com/cgi-bin/near.cgi?call=k4hg&last=24&n=200>
List who's Near Steve ?

<http://www.findu.com/cgi-bin/mapurl.cgi?call=k9dci-2&last=24>
Where's Steve Zoomed out

<http://www.findu.com/cgi-bin/winlink.cgi?K9DCI-2>
WinLink: Where's K9DCI-2

http://www.findu.com/cgi-bin/radar-find.cgi?call=K9DCI-2&radar=lot&zoom=1
The latest National Weather Service weather radar with me.

692. 2A3 Tubes (3)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 18:21:16 UTC
From: bunnydawg <r.heenan@sympatico.ca>
Message-ID: <K_xRb.16066$mf4.759859@news20.bellglobal.com>
Source record: 29277

Still in boxes. Appear to not be used. Not tested as of yet.
Offers ?

693. Re: Fluke 27 display problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 19:03:05 UTC
From: LA8AK@online.no
Message-ID: <4016094f.54857691@news.online.no>
Source record: 29280

On Mon, 26 Jan 2004 18:54:37 -0600, "Henry Kolesnik"
<wd5jfr@oklahoma.net> wrote:

>If it's a LCD display you might be able to fix it by opening the unit up ,
>pulling out the lcd carefully and cleaning the contacts with a clean pencil
>eraser.
>73
>hank wd5jfr
>"Paul Erickson" <paule@sfu.ca> wrote in message
>news:bv4ab9$2og$1@morgoth.sfu.ca...
>> My Fluke 27's display is having trouble with some of the segments. Is this
>a known
>> problem, and is there a solution for it other than sending it back to
>Fluke, which
>> I doubt it is worth.
had a similar problem with my Fluke 8020B, but the problem was caused
by insufficient pressure on some contacts, so I must cure it with some
extra paper inside to press the display towards the pcb
LA8AK
http://home.online.no/~la8ak/m.htm
--
Amount of SPAM is so large that MailWasher must delete 99% of the incoming mails
Cannot check every email manually.
Please use intelligent title for email.
Mails without titles or using just "hi" are deleted

694. Re: distance of radio transmitter from receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 19:30:57 UTC
From: mikea@mikea.ath.cx
Message-ID: <bv6e9hudd14@puck.litech.org>
Source record: 29281

Steve Nosko <suteuve.nosukowicuz@moutouroula.com> wrote:

> Something I wanted to do for a long time is a model rocket altitude system.
> Rocket has a one transistor 10M Rx (have the circuit around here from some
> 1960's Pop Electronics for a 1 tranny FM broadcast Rx) and a one or two
> transistor 2M Tx (FM) -- rocket antenna easier.. Ground station on 10M
> (lots of power available for the wooden rocket Rx) transmits a TONE (not a
> pulse). Rocket transponds (retransmits it on 2M). Measure the zero
> crossing time delay and subtract the overhead time. With proper (and
> simple) digital design, you can have a digital readout in feet, inches,
> whatever. With a tone, common ham radios are just fine.
> With audio, pulses are easy except how do you keep the target from hearing
> it's own echo and "oscillating by itself...?

Block the RX input for a few ohnoseconds[1] longer

> or use subcarriers - this is a little harder. Transmit an FM modulated tone
> (carrier, say 10KHz, tone 1KHz) and transponding it back on another
> carrier, say 15 KHz.

Might be a useful alternative. Have to have sharp filters.

> Who was it that used to sell the sonar modules from the cameras for
> experimentation

Polaroid, IIRC.

[1] The shortest possible unit of time: the interval between hitting
the "do it" key and the realization that you shouldn't have.

--
I swear to god, if people treated their cars they way they treat their
computers, half the cars on the road would be covered in bumper stickers
advertising porno, and their trunks would be filled with rotting garbage.
-- Christian Wagner

695. Re: distance of radio transmitter from receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 21:08:48 UTC
From: Christopher <christhomas@NOSPAMfast24.net>
Message-ID: <bv6k39010ti@enews3.newsguy.com>
Source record: 29283

Hi Joel,

Joel Kolstad wrote:
> Christopher <christhomas@NOSPAMfast24.net> wrote:
>
>>Hi guys,
>>
>>ok, I've got an idea but it's based on determining the distance of a
>>transmitter from a receiver, I originally thought about a synchronised
>>clock in both units, the transmitter sends the time it has out, by the
>>time the receiver unit gets this time a period has passed (probably a
>>few millionth's of a second) and a diff time is detemined, combined with
>>the speed those waves travel, will reveal the distance.
>
>
> Yes, but as you've deduced, the problem is keeping the clocks synchronize.
>
> On the other hand, there's no reason you can't have one unit send out a
> pulse and begin timing. The second unit receives it, immediate sends a
> 'reply' pulse, and you stop your clock when the first unit receives that.
> Now the accuracy is determined by the accuracy of just one clock, the amount
> of uncertainty in the 'turnaround' time of the second unit... and the
> variation in the speed of light as a function of athmospheric conditions.
> (The last one being more of a concern if you're trying to listen to
> satellites -- GPS receivers run into this problem.)

my problem with this is that radio waves are electromagnetic radiation
which travels at the speed of light, therefore can travel 1 meter in 3.3
nanoseconds, if my range is around 10 meters (I was a bit conservative
before, lets say 30meter width/depth and 10 meters high, that'd be big
enough I think for any situation I'd use this system within.

Is there a clock out there that can measure accuracy on this scale, it
seems impossible. That's of course, if radio waves travel through our
atmosphere at almost the speed of light, I'm going to look now as to how
fast they travel through our atmosphere.

> You can also use multiple transmitters with high-quality clocks and one
> receiver -- this is what GPS goes. The transmitters send out a message
> saying, 'I sent this at exactly this time... really I did!' You record on
> your local clock when you receive those messages and hence can perform
> triangulation to determine your position. Better yet, if you have yet
> another transmitter, you can solve for your position as well as the
> _relative error in your timebase_ and thereby synchronize one (or more)
> receivers to the high-quality clock in the transmitter. In GPS receivers,

> this additional satellite is what gets you a 2D fix vs. a 3D fix.

well if you have one transmitter attached to say the top of your head,
you'd need multiple receivers to be able to triangulate that
transmitters position wouldnt you, you'd record the time it was sent and
diff it against the time you have in your local clock, that difference
would give you a rough distance to the transmitter, from each receiver
you'd have a distance/transmitter value, which would denote the RADIUS
of a circle from which the transmitter could be, of course, the location
of the transmitter is where all three circles overlap. More receiver
units could be used to increase the accuracy of those measurements.

the problem again is clock sync. I did originally think that you could
have one master receiver unit, whose clock all others are determined by,
this clock could send out it's time with a "reset" code that all the
other clocks would reset their time to, this would happen fairly
accurately would it? I think it would. Then you're clocks are fairly
sync'd. You'd probably not want to run them for long without resync'ing
again though

>
>>signal strength perhaps?
>>literally I am talking about a transmitter within a cuboid shaped
>>enclosure around 10m maximum and being able to pinpoint that transmitter
>>within that enclosure accurately, to around 1cm, perhaps 2cm.
>
>
> Ah, OK, if it's enclosed field strength would be a reasonably reliable
> indicator. There was an article in Circuit Cellar Ink just a year or so
> back where a guy did this (and cited references -- the idea has been around
> for awhile), but it's sort of the oppposite of what you suggest: You stick
> large (transmitting) coils at the edges of your box and then detect the
> signal strength on a small receiver. 1cm in 10m is 1 part in 1000, which I
> would gander is right about in the middle of 'trivial' and 'pushing
> impossible.'

hmmm, thats interesting idea. although I can't find much about it,
could you remember the article name?

>
> There are also '3D' computer mice (mouses?) out there that use a couple of
> ultrasonic receivers on the 'mouse pad' and perform triangulation after
> listening for the mouse's transmission. Same idea as with RF, but easier
> because sound waves are so much slower than electromagnetic waves -- times
> are measured in microseconds or milliseconds rather than picosecond and
> nanoseconds!
>
> ---Joel Kolstad
>
>

696. Re: FR4 Laminate RF losses

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 21:24:17 UTC
From: averyfineman@aol.com
Message-ID: <20040127162417.25517.00003907@mb-m15.aol.com>
Source record: 29282

In article <NiVTLkH+JiFAFAhk@ifwtech.co.uk>, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> writes:

>Rick Karlquist N6RK wrote:
>>"Roy Lewallen" <w7el@eznec.com> wrote in message
>>news:101bq2468ruqh24@corp.supernews.com...
>>> Loss will be greater on the thicker board, because a greater fraction of
>>> the fields surrounding traces and components will be in the board
>>> material as opposed to being in the air. Having less field in the board
>>
>>This is correct as far as dielectric loss is concerned, but copper resistive
>>loss decreases as the board gets thicker. Which one will dominate depends
>>on frequency and characteristic impedance. At low frequencies, dielectric
>>loss will probably dominate. At high enough frequencies,
>>copper loss will dominate. For low enough impedance traces, the
>>field will be mostly in the air for either board thickness. Complex
>>problem to analyze.
>>
>Yes, all of the above... and 0.8mm ("1/32in") FR4 also has many
>practical advantages for home constructors.

"Losses" due to substrate material don't begin showing up until
one gets into S Band (above 2 GHz or so). All of that microwave
stuff is rather old hat to the short wavelength folks, in texts for
over 3 decades...but expensive to collect due to textbook costs.
:-)

I've "designed" directional couplers, hybrids, Wilkinson dividers,
etc., (at 1 GHz) by simply copying textbook instructions while at
Teledyne Electronics, a place where lots of folks were busy with
distributed constant structures on stripline. The watchword ought
to be Dimensional Stability rather than "losses." In that case,
Duroid (Teflon-fiberglass) is a better substrate. That isn't needed
at 400 MHz and below since the "losses" in any circuit down
there are in the components, not the substrate.

The sole exception to "losses" is the case of substrate problems
such as I encountered at Hughes Aircraft way back in 1957, new
to southern California aerospace. Hughes had subcontracted a lot
of terminal board assemblies for airborne radar and was suddenly
encountering way-too-low insulation resistance in some assemblies.
At the time that was important to the relatively high impedances of
vacuum tube circuits. After organizing the lower classes in several
shifts and tying up every MegOhmMeter in the corporation, a crash
round-the-clock testing discovered a single fabricator being the

culprit. Said fabricator also made rubber products and some of the
(carbon?) dust in the fabricator's air system was drifting through
their plant and settling on the substrate press where they finished
raw "circuit board" material. Fine for overtime (one of the last
places where I got any overtime in the career) but a pain in the
posterior and most boring and dull to do. Problem solved and
the radar sets got finished. [weird old anecdote]

>One is that unlike the regular 1.6mm board, you can cut 0.8mm FR4 easily
>with hand shears - or even strong scissors - without significantly
>damaging either the board, the shears or yourself.
>
>The thinner material is not as resistant to flexing as 1.6mm - it's
>about as flexible as a credit card - but that's still strong enough for
>most purposes. If it's an RF circuit, and you're going to add shielding
>walls of hobby brass strip all around the outside, the resulting
>assembly will be very rigid.

Whether shielding or not, a simple strip of copperclad soldered in
perpendicular to the circuit board adds enormous stiffness and
dimensional stability.

I just uncovered the motherboard-backplane to a Midwest Scientific
6800 microprocessor kit in a workshop storage box. It used strips
of copperclad soldered to the backplane +5 VDC and ground traces
(roughly 0.37" wide). It had been in the box better than 20 years and
at a diagonal, other parts putting weight on it as if to bend or bow it.
Sighting down the surface, it was still as flat as it was when I put it
together two decades earlier!

>50-ohm microstrip on 0.8mm FR4 is about half its normal width on 1.6mm,
>which makes it a much better match (in all senses) to the width of the
>SMD components hanging off the ends. It's still wide enough to make the
>impedance reasonably insensitive to HB fabrication tolerances.
>
>Since 0.8mm FR4 is the basic material of multi-layer boards, increasing
>numbers of PCB materials suppliers and board makers can now offer 0.8mm.
>
>In the UK, Mega Electronics supply both SS and DS photo-resist-coated
>0.8mm FR4 (and also many other specialist PCB-making materials):
>http://www.megauk.com

One of my personal gripes is the cost of basic copperclad at dealers.
In bulk quantities the material is quite cheap in anyone's monetary
units, yet the dealers mark the prices up well above bulk cost. The
excuse is "cutting to manageable shipping size" and other mythology
to disguise getting as much for it as they can. :-)

I've found that true in the USA, especially around southern California,
once one of the aerospace centers and a big user of copperclad.
The few Canadian dealers doing mailorder have better prices for
copperclad than in the USA. I've gotten "surplus" copperclad (when

spotted with the bargain-hunter's eye) in sheets at less than a tenth of the price of cut copperclad from dealers. A small fee paid to a sheet metal fabricator and they will use a shear to cut such down to manageable size. Overall copperclad cost that way is still less than a tenth of dealers' cut copperclad prices.

The four-sided box type of circuit board shielding will do wonders for physical stability once soldered in place, even with the thin 0.032" thick single-sided copperclad.

Len Anderson
retired (from regular hours) electronic engineer person

697. Re: UHF tank circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 21:41:39 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <4QD+sLATstFAFwEC@ddwyer.demon.co.uk>
Source record: 29284
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

In article <1075152455.800215@proxy.nec.com.au>, James Fenech
<james.fenech@xxxnec.com.au> writes
>Hi Paul,
>
>I'm currently experimenting with VCO circuits (had an earlier thread about
>varactors). My current prototype uses a MPF5179, a pair of BB909 tuning
>diodes and a home made inductor. The inductor is about 4 turns on 0.25"
>centre (air cored), spread out to about 0.4" in length, giving about 150nH.
>This circuit operates to 350MHz and (if the tuning diode info is OK)
>indicates strays of less than 1pF. This is built "dead bug" style, and is
>really my first attempt at anything of this sort of high frequency.
in the early 80s I built some narrow band VCO employing a 450MHz Toko
helical resonator bandpass filter.
The trick was to get the phase including amplifier and a varicap phase
shifter to zero.
I recall a -125db /rootHZ at 10kHz with a bfr bipolar.
Never got anything better though was narrow band.

--
ddwyer

698. Re: distance of radio transmitter from receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 22:25:49 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <bv6okm$n5q$1@newshost.mot.com>
Source record: 29285

Yea. Easy.Steve N.

"Mike Andrews" <mikea@mikea.ath.cx> wrote in message
news:bv6e9hudd14@puck.litech.org...
> Steve Nosko <suteuve.nosukowicuz@moutouroula.com> wrote:
>
> > ...With audio, pulses are easy except how do you keep the target from
hearing
> > it's own echo and "oscillating by itself...?
>
> Block the RX input for a few ohnoseconds[1] longer
>
> > or use subcarriers - this is a little harder. Transmit an FM modulated
tone
> > (carrier, say 10KHz, tone 1KHz) and transponding it back on another
> > carrier, say 15 KHz.
>
> Might be a useful alternative. Have to have sharp filters.
>
> > Who was it that used to sell the sonar modules from the cameras for
> > experimentation
>
> Polaroid, IIRC.
>
> [1] The shortest possible unit of time: the interval between hitting
> the "do it" key and the realization that you shouldn't have.
>
> --
> I swear to god, if people treated their cars they way they treat their
> computers, half the cars on the road would be covered in bumper stickers
> advertising porno, and their trunks would be filled with rotting garbage.
> -- Christian Wagner

699. Need info: Varian 212MS microwave YIG filter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-27 22:54:27 UTC
From: k5dh@raytheon.com
Message-ID: <D_BRb.549$b77.1280@dfw-service2.ext.raytheon.com>
Source record: 29286
Cross-posted to: rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Here's one for you microwave guys...

I'm looking for any kind of info, specs, etc,
for a Varian model 212MS microwave YIG filter.
The data plate on the unit says it covers the
freq range of 1.8 to 12.4 GHz. It has Type N
connectors for input and output, and solder
pins for the DC control voltage. It came from
an old piece of HP test equipment. Anyone
have information on this filter? I was unable
to find anything on the internet using Google.

73,
Dean K5DH

700. 2m Amplifier Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 00:25:15 UTC
From: Jason Dugas <kb5urq@hotmail.com>
Message-ID: <101e0dhcjasuncf@corp.supernews.com>
Source record: 29287

I was looking through my old 1994 ARRL Handbook at the 2m amplifier designs. I thought the few they had there were interesting so I decided to look in the only other handbook I had (2000). I was stunned to see that there were NO VHF amplifier designs included. Even funnier, was the absence of the amplifier topic altogether in the VHF/UHF handbook-- no designs there either. where are they all hiding?!?!

If anyone has some good designs on the net, please point me to them!
Thanks,

Jason
KB5URQ

701. Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 00:30:25 UTC
From: Jason Dugas <kb5urq@hotmail.com>
Message-ID: <101e0n7p2jmhl84@corp.supernews.com>
Source record: 29288
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

Don't mean to beat a dead topic to a second death, but in case you wanted to know NASA uses tantalums extensively as replacements for electrolytics on-orbit (on station & shuttle). I don't can't recite the reasoning verbatim, but it is an M&P (materials and processes) issue, having to do with operating at low pressures and also the dangers of electrolytics entering various failure modes due to overheating in space (no bouyancy-driven convection). Tantalums tend not to fail catastrophically (pop or explode) when thermally stressed.

Jason Dugas
KB5URQ
NASA-JSC

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:100u2kvskpbroc8@corp.supernews.com...
> Over the last few years I've acquired quite a few consumer electronincs
pcbs
> including TVs, VCRs, stereos, etc, so when I discovered that I needed a
> tantalum to repair some test equipment I was going to salvage a tantalum.
I
> couldn't find one anywhere, so I assume they're too expensive or too
> unrelaible for high end consumer electronics. A couple of the boards were
> from my personal stuff purchased new. One example is a MGA Mitsubishi
rear
> projection TV that operated flawlessly for nearly 20 years of daily use.
> Most of my test equipment comes from hamfests and is surplus after
becoming
> obsolete and non-operative in less than 20 years. That leads me to wonder
> what the real story is behind tantalum capacitors. What do the experts
have
> to say?
> tnx
> hank wd5jfr
>
>

702. Re: 2m Amplifier Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 00:35:11 UTC
From: jimbo <jimbo@nospamforme.com>
Message-ID: <401703BE.7C063AE1@nospamforme.com>
Source record: 29289

hi jason,

Check out this site, many good amplifers from Motorola designs.

http://www.communication-concepts.com/default.htm

73 jimbo

Jason wrote:

> I was looking through my old 1994 ARRL Handbook at the 2m amplifier designs.
> I thought the few they had there were interesting so I decided to look in
> the only other handbook I had (2000). I was stunned to see that there were
> NO VHF amplifier designs included. Even funnier, was the absence of the
> amplifier topic altogether in the VHF/UHF handbook-- no designs there
> either. where are they all hiding?!?!
>
> If anyone has some good designs on the net, please point me to them!
> Thanks,
>
> Jason
> KB5URQ

703. Re: 2m Amplifier Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 00:41:55 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <101e1ai8bbir6f7@corp.supernews.com>
Source record: 29290

The 2002 book has both a 1500W linear and a 50W class C mobile amp, I was just drooling over them last night.

"Jason Dugas" <kb5urq@hotmail.com> wrote in message news:101e0dhcjasuncf@corp.supernews.com...
> I was looking through my old 1994 ARRL Handbook at the 2m amplifier designs.
> I thought the few they had there were interesting so I decided to look in
> the only other handbook I had (2000). I was stunned to see that there were
> NO VHF amplifier designs included. Even funnier, was the absence of the
> amplifier topic altogether in the VHF/UHF handbook-- no designs there
> either. where are they all hiding?!?!
>
> If anyone has some good designs on the net, please point me to them!
> Thanks,
>
> Jason
> KB5URQ
>
>

704. Need help decoding rtty signal

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 01:21:05 UTC
From: hexter@blazenet.net
Message-ID: <101e3k1rab1tlf2@corp.supernews.com>
Source record: 29291

There are four very strong signals here on the east coast of U.S.A., I here them best after dusk.

3.084mhz 3.102mhz 3.126mhz and 3.132mhz

Here is what I know,

1000hz center frequency
850hz shift
75baud / 13.3ms so it would appear

The signal stops erratically on both space and mark tones. Also, at times the baud rate seems like it becomes very fast, perhaps double.

I hear this same exact 'signature' signal in many places, on many bands, and can't seem to decode it with normal 5 level baudot programs. However, the signal doesn't seem to be ascii either.

Anyone want to give a listen, and tell me what I need. Are they encrypted, or do I just need a different rtty-to-text convertor?

TNX KD3SH

705. Re: 2m Amplifier Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 01:44:07 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <101e4v2pq4gtg31@corp.supernews.com>
Source record: 29292

(Jason replied to me via email):

Hmm, guess they must have skipped a year on the topic...
Does the 1.5kW linear require an external high voltage power supply? the
300W unit in 1994's handbook requires fabrication of both the amplifier &
the power supply..

Jason
KB5URQ

It requires one, either internal or external. If you can put the RF deck
together then you should be happy putting together the HV supply (may want
to buy a crane for the transformer, though).

-- Tim

"Tim Wescott" <tim@wescottnospamdesign.com> wrote in message
news:101e1ai8bbir6f7@corp.supernews.com...
> The 2002 book has both a 1500W linear and a 50W class C mobile amp, I was
> just drooling over them last night.
>
> "Jason Dugas" <kb5urq@hotmail.com> wrote in message
> news:101e0dhcjasuncf@corp.supernews.com...
> > I was looking through my old 1994 ARRL Handbook at the 2m amplifier
> designs.
> > I thought the few they had there were interesting so I decided to look
in
> > the only other handbook I had (2000). I was stunned to see that there
> were
> > NO VHF amplifier designs included. Even funnier, was the absence of the
> > amplifier topic altogether in the VHF/UHF handbook-- no designs there
> > either. where are they all hiding?!?!
> >
> > If anyone has some good designs on the net, please point me to them!
> > Thanks,
> >
> > Jason
> > KB5URQ
> >
> >
>
>

706. Re: 2m Amplifier Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 01:51:19 UTC
From: Wes Stewart <n7ws@_arrl.net>
Message-ID: <l25e1012opjmvfpmuvcma0ak93h92jlhi7@4ax.com>
Source record: 29293

On Wed, 28 Jan 2004 00:35:11 GMT, jimbo <jimbo@nospamforme.com> wrote:

|hi jason,
|
|Check out this site, many good amplifers from Motorola designs.
|
|http://www.communication-concepts.com/default.htm

Those aren't "amplifiers", they are "drivers."

These are amplifiers:

http://web.wt.net/~w5un/8877-1.htm

http://www.svetlana.com/docs/TechBulletins/technoteNo42.html

http://www.qsl.net/dl4mea/2g35.htm

http://www.qsl.net/wb5apd/144_new_amp.html

etc. etc...

707. Re: 2m Amplifier Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 02:01:19 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <101e5vbejrs2p9b@corp.supernews.com>
Source record: 29294

Down-East Microwave also has kits for "drivers" (jeesh).

Wes: Does the sky over your shack glow at night? During the day?

"Wes Stewart" <n7ws@_arrl.net> wrote in message
news:l25e1012opjmvfpmuvcma0ak93h92jlhi7@4ax.com...
> On Wed, 28 Jan 2004 00:35:11 GMT, jimbo <jimbo@nospamforme.com> wrote:
>
> |hi jason,
> |
> |Check out this site, many good amplifers from Motorola designs.
> |
> |http://www.communication-concepts.com/default.htm
>
> Those aren't "amplifiers", they are "drivers."
>
> These are amplifiers:
>
> http://web.wt.net/~w5un/8877-1.htm
>
> http://www.svetlana.com/docs/TechBulletins/technoteNo42.html
>
> http://www.qsl.net/dl4mea/2g35.htm
>
> http://www.qsl.net/wb5apd/144_new_amp.html
>
> etc. etc...

708. Re: 2m Amplifier Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 02:08:07 UTC
From: jimbo <jimbo@nospam.com>
Message-ID: <40171986.D52AA7CD@nospam.com>
Source record: 29295

http://www.communication-concepts.com/hf_amplifiers.htm

Am I missing something here ???

jimbo

Wes wrote:

> On Wed, 28 Jan 2004 00:35:11 GMT, jimbo <jimbo@nospamforme.com> wrote:
>
> |hi jason,
> |
> |Check out this site, many good amplifers from Motorola designs.
> |
> |http://www.communication-concepts.com/default.htm
>
> Those aren't "amplifiers", they are "drivers."
>
> These are amplifiers:
>
> http://web.wt.net/~w5un/8877-1.htm
>
> http://www.svetlana.com/docs/TechBulletins/technoteNo42.html
>
> http://www.qsl.net/dl4mea/2g35.htm
>
> http://www.qsl.net/wb5apd/144_new_amp.html
>
> etc. etc...

709. amateur radio/astronomy Web Site Updated

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 02:36:22 UTC
From: Brian Webb <kd6nrp@earthlink.net>
Message-ID: <GeFRb.30366$zj7.26301@newsread1.news.pas.earthlink.net>
Source record: 29296

Hi:

I recently updated my space and amateur radio web site. The address is:

http://www.spacearchive.info

73

Brian Webb, KD6NRP

710. Re: Need info: Varian 212MS microwave YIG filter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 03:24:49 UTC
From: mike <spamme0@juno.com>
Message-ID: <40172B81.8040003@juno.com>
Source record: 29097
Cross-posted to: rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

K5DH wrote:
> Here's one for you microwave guys...
>
> I'm looking for any kind of info, specs, etc,
> for a Varian model 212MS microwave YIG filter.
> The data plate on the unit says it covers the
> freq range of 1.8 to 12.4 GHz. It has Type N
> connectors for input and output, and solder
> pins for the DC control voltage. It came from
> an old piece of HP test equipment. Anyone
> have information on this filter? I was unable
> to find anything on the internet using Google.
>
> 73,
> Dean K5DH
>

Don't know anything about this particular unit,
but the frequency should be linear with input current.
Measure the frequency at two currents and you should
have what you need. For reference a 2-6 gig yig
oscillator (at least mine) is 20MHz./mA.
mike

--
Return address is VALID.
Bunch of stuff For Sale and Wanted at the link below.
Toshiba & Compaq LiIon Batteries, Test Equipment
Honda CB-125S $800 in PDX
TEK Sampling Sweep Plugin and RM564
Tek 2465 $800, ham radio, 30pS pulser
Tektronix Concept Books, spot welding head...
http://www.geocities.com/SiliconValley/Monitor/4710/

711. Re: distance of radio transmitter from receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 04:24:38 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <101eecc5ci0if17@corp.supernews.com>
Source record: 29098

Steve Nosko wrote:
> . . .
> Who was it that used to sell the sonar modules from the cameras for
> experimentation
>

It was Polaroid.

You can get sonar measuring devices at home handyman stores for a few bucks. They might be useful with a little hacking.

Roy Lewallen, W7EL

712. Re: 2m Amplifier Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 04:59:07 UTC
From: Wes Stewart <n7ws@_arrl.net>
Message-ID: <u9ge1058gbfk40tu0b76h9fnak7eiph393@4ax.com>
Source record: 29099

On Wed, 28 Jan 2004 02:08:07 GMT, jimbo <jimbo@nospam.com> wrote:

|http://www.communication-concepts.com/hf_amplifiers.htm
|
|Am I missing something here ???

Yes and I tried to respond to your email message but your spoofed your
return address, so forget about it. If it's over your head, so be it.

713. KIWA Air core Am loop details wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 05:09:59 UTC
From: Nocturnal1 <file13@nojunkmail.com>
Message-ID: <4017430d_2@newspeer2.tds.net>
Source record: 29100

Can anyone tell me how detailed the schematic diagram in the manual is? I can't afford to buy the loop, but am pretty good a cobbling and crafting and coming up with something that works. Is there a kind soul out there who is willing to scan and email a copy of the manual? Perhaps I could build a workable clone from the circuit details in the manual. I'm also looking for closeup pictures of details of the loop and circuitry - anything that would help in producing a viable clone (they don't make 'em anymore).

~Tom
nocone
at
uslink
dot
net

714. Re: 2m Amplifier Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 05:24:59 UTC
From: averyfineman@aol.com
Message-ID: <20040128002459.21457.00003672@mb-m10.aol.com>
Source record: 29101

In article <40171986.D52AA7CD@nospam.com>, jimbo <jimbo@nospam.com> writes:

>http://www.communication-concepts.com/hf_amplifiers.htm
>
>Am I missing something here ???
>
>jimbo

Communications Concepts is a company that supplies parts and whole kits for making a number of solid-state RF AMPLIFIERS, principally made according to Motorola application notes done mostly by Helge Granberg. C-C has some of those app notes available for download although the quality wasn't good when I checked them out about 3 years ago. I've heard good words about C-C but never ordered anything from them myself.

Some of the old Motorola app notes still exist in downloadable form from the archives of the Motorola website...or at least existed at one time. Some of the old Motorola RF amplifier transistors are now made by ON Semiconductor but the original Motorola solid-state organizations did a rather monstrous downsizing of production to more in-demand and profitable semiconductors.

Len Anderson
retired (from regular hours) electronic engineer person

715. Re: distance of radio transmitter from receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 05:25:01 UTC
From: averyfineman@aol.com
Message-ID: <20040128002501.21457.00003673@mb-m10.aol.com>
Source record: 29102

In article <bv6k39010ti@enews3.newsguy.com>, Christopher
<christhomas@NOSPAMfast24.net> writes:

>Joel Kolstad wrote:
>> Christopher <christhomas@NOSPAMfast24.net> wrote:
>>
>>>Hi guys,
>>>
>>>ok, I've got an idea but it's based on determining the distance of a
>>>transmitter from a receiver, I originally thought about a synchronised
>>>clock in both units, the transmitter sends the time it has out, by the
>>>time the receiver unit gets this time a period has passed (probably a
>>>few millionth's of a second) and a diff time is detemined, combined with
>>>the speed those waves travel, will reveal the distance.
>>
>> Yes, but as you've deduced, the problem is keeping the clocks synchronize.
>>
>> On the other hand, there's no reason you can't have one unit send out a
>> pulse and begin timing. The second unit receives it, immediate sends a
>> 'reply' pulse, and you stop your clock when the first unit receives that.
>> Now the accuracy is determined by the accuracy of just one clock, the
>amount
>> of uncertainty in the 'turnaround' time of the second unit... and the
>> variation in the speed of light as a function of athmospheric conditions.
>> (The last one being more of a concern if you're trying to listen to
>> satellites -- GPS receivers run into this problem.)
>
>my problem with this is that radio waves are electromagnetic radiation
>which travels at the speed of light, therefore can travel 1 meter in 3.3
> nanoseconds, if my range is around 10 meters (I was a bit conservative
>before, lets say 30meter width/depth and 10 meters high, that'd be big
>enough I think for any situation I'd use this system within.
>
>Is there a clock out there that can measure accuracy on this scale, it
>seems impossible. That's of course, if radio waves travel through our
>atmosphere at almost the speed of light, I'm going to look now as to how
>fast they travel through our atmosphere.

For some background on an established system, research aviation
navigational aids DME (Distance Measuring Equipment, civilian use)
and TACAN (TACtical Area Navigation, military use) for an aircraft
to get their slant range to a ground station.

DME, compatible with TACAN for range, has an aircraft interrogator-
receiver that sends a pulse pair at low L Band. A ground station

within range will receive that pair, wait 50 microseconds, then respond with another pulse pair. The aircraft determines range from the round-trip to get a response minus the fixed 50 uSec delay using the common radar round-trip time (which is approximately 500 uSec per mile for coarse estimation).

The reason for the pulse pairs is to avoid false responses and returns from noise spikes or stray single pulses or whatever. That is easy to implement by a delay line and the equivalent of an AND gate action. Single pulses won't get passed but a pair with the right spacing will.

To further cut down on false replies in a crowded airspace, the aircraft interrogator repetition rate is "dithered" slightly. Since the aircraft uses that interrogation as the start of its timing to a return, the dithered rep rate doesn't matter to it...but to the rest of the air-space, those interrogations and replies seem like so much noise from others ("fruit" in the civil avionics jargon).

TACAN has been in the U.S. military since the early 1950s (a USN development) and DME came shortly thereafter. Used daily by aircraft on civil airways. Accuracy depends on the calibration of the aircraft interrogator-receiver. Old ground stations used a supersonic delay line filled with mercury to achieve the fixed 50 uSec delay of replies to an interrogation from aircraft. Maximum duty cycle is rather higher than radar for ground stations but not a real problem. That fixed delay includes the turn-around time of receiving a pulse pair, determining that it is a pair, etc. A fixed delay allows checking out the system prior to takeoff, using a local VORTAC station at close range.

==========

Trying to use one-way signal strength for range isn't going to be good. If within 5 to 10 wavelengths for the path, the path is fraught with all kinds of variations just as a parasitic antenna works with field phasing. Unlike parasitic antennas, the path would not be straight line (such as a Yagi-Uda).

Beyond the "near field" effects, one would get Multipath reflections, some of which would be in-phase, some out-phase, all resulting in many decibels of strength variation at short relative positions.

Signal strength as a coarse distance indication is only good at very long ranges relative to wavelength. Even then it is uncertain. It's very difficult to get a true isotropic source with a spherical radiation pattern in a practical antenna, any RF wavelength.

Round-trip time is the only practical way to achieve ranging whether by RF or by acoustic means.

Len Anderson
retired (from regular hours) electronic engineer person

716. Re: 2m Amplifier Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 05:52:37 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <40174E1A.47BF3515@earthlink.net>
Source record: 29103

Avery Fineman wrote:
>
> In article <40171986.D52AA7CD@nospam.com>, jimbo <jimbo@nospam.com> writes:
>
> >http://www.communication-concepts.com/hf_amplifiers.htm
> >
> >Am I missing something here ???
> >
> >jimbo
>
> Communications Concepts is a company that supplies parts and
> whole kits for making a number of solid-state RF AMPLIFIERS,
> principally made according to Motorola application notes done
> mostly by Helge Granberg. C-C has some of those app notes
> available for download although the quality wasn't good when I
> checked them out about 3 years ago. I've heard good words about
> C-C but never ordered anything from them myself.
>
> Some of the old Motorola app notes still exist in downloadable form
> from the archives of the Motorola website...or at least existed at
> one time. Some of the old Motorola RF amplifier transistors are
> now made by ON Semiconductor but the original Motorola solid-
> state organizations did a rather monstrous downsizing of production
> to more in-demand and profitable semiconductors.
>
> Len Anderson
> retired (from regular hours) electronic engineer person

I tried to get an old Motorola datasheet yesterday, and the entire
archive section was gone.

--
We now return you to our normally scheduled programming.

Michael A. Terrell
Central Florida

717. Re: 2m Amplifier Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 06:45:54 UTC
From: averyfineman@aol.com
Message-ID: <20040128014554.25517.00003925@mb-m15.aol.com>
Source record: 29104

In article <40174E1A.47BF3515@earthlink.net>, "Michael A. Terrell"
<mike.terrell@earthlink.net> writes:

> I tried to get an old Motorola datasheet yesterday, and the entire
>archive section was gone.

To paraphrase the Latin - Sick transit, gloria mundi. :-(

Check ON Semiconductor. They might still have some of the
datasheets.

Len Anderson
retired (from regular hours) electronic engineer person

718. Re: distance of radio transmitter from receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 07:22:43 UTC
From: Sverre Holm <la3za.0junk4me@qsl.net>
Message-ID: <bv7o00$s0$1@maud.ifi.uio.no>
Source record: 29105

> Signal strength as a coarse distance indication is only good at very
> long ranges relative to wavelength. Even then it is uncertain.

New location systems based on WLAN (2.4 GHz) use field strength combined with what seems to be some sort of adaptive algorithm that learns the field strength vs environment through repeated tests. See www.ekahau.com and www.radionor.com. These companies promise location for 'free', as they can locate laptops by using the existing hardware infrastructure of the wireless network. This is a very hot topic these days, and large business opportunities are expected.

But accuracies are in the 1 m range, to get to 1 cm accuracy there does not seem to be any alternative to ultrasound systems, see demo on www.sonitor.com.

--
Sverre Holm, LA3ZA
---
www.qsl.net/la3za

719. Re: distance of radio transmitter from receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 10:50:14 UTC
From: no_email_addy@no_email_addy.com
Message-ID: <0v3f10htiftamlmmhhpgbgq7lu2db7pfth@4ax.com>
Source record: 29106

We did a unit at my last job called 'velocity of light'.

It was pretty simple and you cud accurately measure distance down to 1cm.

Infrared led emitter switched at 50MHz, focused using a lens to a 2 inch beam, reflected back by a mirror to an infrared detector (5 inches away from the emitter).

The tx 50MHz was generated using a 50MHz xtal which drove the tx led.

Their was a 50.025MHz second xtal osc which was used to mix down both the tx signal and the rx signal to 25KHz IF (we now have 2 25KHz waveforms), these two 25KHz carriers were then phase compared - so easy to see the smallest of movements in the mirror on a basic scope.

So all the hard work is done at 25KHz (phase measuring) - one of todays little mcpu's will do this easily (ATmega16 for example).

You could just as easily use laser or maybe rf in place of the IR led's, though directing RF at such low freq's would be somewhat difficult.

Obviously at 50MHz, the phase difference would cycle every 6 meters (total reflected path), but if your a bit cleverer (though not hard to do) you could get the freq to sweep from a low freq (say 5MHz) upto wot ever you like - using a pair of single xtal referenced PLL's to generate the two oscillator freq's (whilst maintaining the 25KHz difference) and then calculate an exact distance in the cpu.

This method is simple and relatively cheap to judge distances very accurately with no need for very short pulses (high bandwidths) and very fast logic.

Clive

720. Re: distance of radio transmitter from receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 11:33:40 UTC
From: no_email_addy@no_email_addy.com
Message-ID: <7d7f105mkgal5taofsp5vleo0imbkbbjak@4ax.com>
Source record: 29107

Forgot to say.

A 90deg phase change in the reflected beam (at 50MHz) also results in a 90deg phase change in the rx'ed 25KHz IF) - this is why no fast logic is required.

721. Time to update some datasheets

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 13:42:22 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <tpudnQ9KepXzJordRVn-sA@comcast.com>
Source record: 29108

I guess I have been using the same datasheet for LM317's etc. onto a decade now -- saw some SMT devices showing up on EBay.

National has updated the sheet (May 2003) with the new SMT devices -- and one more design idea

722. Re: FR4 Laminate RF losses

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 15:40:30 UTC
From: Rick Karlquist N6RK <richard@karlquist.removethis.com>
Message-ID: <NJQRb.175902$na.285635@attbi_s04>
Source record: 29109

If you keep the impedance constant, the loss goes down
for the simple reason you state that the width increases.
If you keep the width the same, the loss also goes down
because the characteristic impedance is higher. This is
because the copper resistance, relative the the characteristic
impedance, is lower. This is analogous to open wire line.
Suppose you make two OWL's with #14 wire. Suppose
one line has 1/2 inch spacing and the other has 1 inch
spacing. The 1 inch line will be lower loss owing to its
higher characterisitic impedance. OTOH, a #14 twisted
pair will be much higher loss due to its much lower impedance.

Rick N6RK

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:101covb4okbd192@corp.supernews.com...
> What's the mechanism for the copper loss decreasing as the board gets
> thicker? Of course, if you assume that the traces consist only of
> microstrip or stripline transmission lines with some fixed impedance,
> then the line width will be greater on the thicker material, resulting
> in lower loss. Is that the rationale, or is there some other phenomenon
> at work?
>
> Roy Lewallen, W7EL
>
>

723. Re: 2m Amplifier Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 19:06:11 UTC
From: Wes Stewart <n7ws@_arrl.net>
Message-ID: <qv1g10t1cg1fjcrpjuu0aoa2q9knuub773@4ax.com>
Source record: 29110

On Tue, 27 Jan 2004 18:01:19 -0800, "Tim Wescott"
<tim@wescottnospamdesign.com> wrote:

|Down-East Microwave also has kits for "drivers" (jeesh).
|
|Wes: Does the sky over your shack glow at night? During the day?

Not lately, my 2M EME station is in mothballs.

724. 1SS99

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 19:48:05 UTC
From: matrix <argh@nomail.it>
Message-ID: <ZIURb.918$HO2.132@news.edisontel.com>
Source record: 29111

Hi,
I am trying a diode 1S99 but in Italy I do not succeed to find it. You can say if I can replace it with one similar?

73 de IW9HFW Alberto

725. Parasitics in amplifier chain

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 21:03:14 UTC
From: kc0luy_usenet@comcast.net
Message-ID: <5bae94cc.0401281303.465db66b@posting.google.com>
Source record: 29112

Greetings All! I'm a long time lurker, but a first time poster.

I have been busy building a homebrew 20m SSB transceiver.

So far things are working fairly well, however, before I move on and Finish the final PA stage, I would like to solve a couple of mysteries with the driver stages leading up to the PA.

This is the project that I am copying: (Thanks to Ashar Farhan and to W8DIZ, for all of their help and patience with my questions!)

http://farhan.net.co.nr/xcvr1.html

I have made some component substitutions, added varactor tuning to the VFO, and I am using cascoded JFETs in the mixer instead of a single JFET.

My problem at the moment lies with the tx linear amp chain.

So far I have built up the tx chain to the point up to the final PA stage. I am using MRF517s instead of 2N3866s. I built the linear amp driver for this rig on a separate board not wired to the rest of the rig (so far). This consists of a chain of three nearly identical bipolar feedback amp stages. For my tests, I attached a 50 ohm load to the output of the third stage.

There are two strange things I have noticed about the transmit chain:

1) If the input to the first stage is shorted to ground through the coupling capacitor (grounding at RF, but not DC), then the amplifier will oscillate at about 45MHz. With a 50 ohm resistor grounding the input to the amp, it does *not* oscillate. (The amp has a strong peak in its gain around 45MHz, having twice the peak V as it does at 14MHz, could this peak be related to the parasitic resonance making it oscillate under the above conditions?) ((keep in mind that there are no tuned circuits (by design anyway!) in the amp and its not attached to any tuned outputs or filters yet.)) I've added 1K resistors across the bifilar transformers to kill parasitic oscillations, which they do an admirable job of with a normal impedance at the input. I've also used all monolithic ceramic capacitors for bypass, coupling, and emitter degeneration.

2) After I attached the amp chain to the rest of the rig and adjusted the mic level so that no clipping or over driving of the output was visible, I now have a residual carrier of about .5v peak when not speaking. The signal level at the input to the amp is too low to measure when not speaking. I substituted 1N5711s for the 1N4148 diodes in the

mixer, but I believe that is suppose to make it better because of the lower forward voltage drop and the faster speed of the 1N5711. The maximum output before clipping starts is 6V peak with 60mV peak input. Higher inputs drive it into distortion and clipping. Seems normal to me, but what do I know?

This amp is laid out very cleanly and constructed well. I have already eliminated parasitics from the amp when disconnected with no signal driving it.

With #1, I am concerned about the oscillation with the input shorted to ground because it seems related to the peak in the gain around the same frequency, even though I do not plan on operating it with its input shorted to ground, nor operating it anywhere near 45MHz.

Should I be concerned? If yes, some suggestions of things to try would be very welcome.

With #2, The residual carrier, I wish to eliminate or severely reduce it before I add the final PA section. I will appreciate any suggestions of things to try here too. BFO frequency adjustment? Bad mixer design? Bad mixer diodes?

I am not sure where to start looking for trouble on #2

All of your help and your suggestions will be most appreciated. I can supply photos of my layout and supply further details on where my implementation deviates from the original schematic of Farhan's rig, upon request.

Thanks in advance!

de Dan KC0LUY
kc0luy_usenet@comcast.net

726. Re: Parasitics in amplifier chain

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 21:58:46 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <qgWRb.25363$5D.4259@clgrps13>
Source record: 29113

Hi, welcome! :-)

Something you can try:

1) place a ferrite bead on the base(s)

2) Toss a low value resistor (10 ohms or less) on the collector as close
as possible to the transistor.

Good luck!

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

727. Re: 1SS99

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 22:05:33 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.0000002b.00141d65@btinternet.com>
Source record: 29114

Hi,

The 1SS99 Schottky is listed here at Euro 2.50.

http://www.xs4all.nl/~barendh/Indexeng.htm

73 de Joe, G3LLV

728. Re: Parasitics in amplifier chain

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-28 23:01:46 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <101gfqp36njvb6d@corp.supernews.com>
Source record: 29115

#1:

Yes, the 45MHz peak with a 50 ohm source is almost certainly related to the 45MHz oscillation with the input grounded. You can try to fix it, or you can decide not to worry about it. Shunting the transformers will certainly kill the peak, but at the cost of some gain. If you're _really sure_ that you'll always present that amplifier with a 50 ohm impedance you're probably OK. If it was me I'd probably try hard to chase it down, but I'd go on the air even if I couldn't entirely fix it.

#2:

Where are you measuring things? Is this the input and output of the mixer, or somewhere else?

Did you adjust the carrier balance (that 100 ohm pot that the diodes connect to after T5)? It should be diddled until your carrier is at a minimum. I would be very tempted to put some resistance in to reference the audio to ground, but I'm not sure if it would improve anything.

You may also want to match the forward drop of the diodes, but with the carrier balance control such measures are probably superfluous.

Even what you have probably meets minimum standards (whatever they are), but you probably want to fix it before you fly.

"Dan" <kc0luy_usenet@comcast.net> wrote in message news:5bae94cc.0401281303.465db66b@posting.google.com...
> Greetings All! I'm a long time lurker, but a first time poster.
>
> I have been busy building a homebrew 20m SSB transceiver.
>
> So far things are working fairly well, however, before I move on
> and Finish the final PA stage, I would like to solve a couple of
> mysteries with the driver stages leading up to the PA.
>
> This is the project that I am copying: (Thanks to Ashar Farhan and to
> W8DIZ, for all of their help and patience with my questions!)
>
> http://farhan.net.co.nr/xcvr1.html
>
> I have made some component substitutions, added varactor tuning to the
> VFO, and I am using cascoded JFETs in the mixer instead of a single
> JFET.
>
> My problem at the moment lies with the tx linear amp chain.

>
> So far I have built up the tx chain to the point up to the final PA
> stage. I am using MRF517s instead of 2N3866s. I built the linear amp
> driver for this rig on a separate board not wired to the rest of the
> rig (so far). This consists of a chain of three nearly identical
> bipolar feedback amp stages. For my tests, I attached a 50 ohm load to
> the output of the third stage.
>
> There are two strange things I have noticed about the transmit chain:
>
> 1) If the input to the first stage is shorted to ground through the
> coupling capacitor (grounding at RF, but not DC), then the amplifier
> will oscillate at about 45MHz. With a 50 ohm resistor grounding the
> input to the amp, it does *not* oscillate. (The amp has a strong peak
> in its gain around 45MHz, having twice the peak V as it does at 14MHz,
> could this peak be related to the parasitic resonance making it
> oscillate under the above conditions?) ((keep in mind that there are
> no tuned circuits (by design anyway!) in the amp and its not attached to
> any tuned outputs or filters yet.)) I've added 1K resistors across the
> bifilar transformers to kill parasitic oscillations, which they do an
> admirable job of with a normal impedance at the input. I've also used
> all monolithic ceramic capacitors for bypass, coupling, and emitter
> degeneration.
>
> 2) After I attached the amp chain to the rest of the rig and adjusted
> the mic level so that no clipping or over driving of the output was
> visible, I now have a residual carrier of about .5v peak when not
> speaking. The signal level at the input to the amp is too low to measure
> when not speaking. I substituted 1N5711s for the 1N4148 diodes in the
> mixer, but I believe that is suppose to make it better because of the
> lower forward voltage drop and the faster speed of the 1N5711. The
> maximum output before clipping starts is 6V peak with 60mV peak input.
> Higher inputs drive it into distortion and clipping. Seems normal to me,
> but what do I know?
>
> This amp is laid out very cleanly and constructed well. I have already
> eliminated parasitics from the amp when disconnected with no signal
> driving it.
>
> With #1, I am concerned about the oscillation with the input shorted to
> ground because it seems related to the peak in the gain around the same
> frequency, even though I do not plan on operating it with its input
> shorted to ground, nor operating it anywhere near 45MHz.
>
> Should I be concerned? If yes, some suggestions of things to try
> would be very welcome.
>
> With #2, The residual carrier, I wish to eliminate or severely reduce it
> before I add the final PA section. I will appreciate any suggestions of
> things to try here too. BFO frequency adjustment? Bad mixer design? Bad

> mixer diodes?
>
> I am not sure where to start looking for trouble on #2
>
> All of your help and your suggestions will be most appreciated. I can
> supply photos of my layout and supply further details on where my
> implementation deviates from the original schematic of Farhan's rig,
> upon request.
>
> Thanks in advance!
>
> de Dan KC0LUY
> kc0luy_usenet@comcast.net

729. Re: Need help decoding rtty signal

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 00:48:52 UTC
From: bg998@FreeNet.Carleton.CA
Message-ID: <bv9l9k$1k3$1@freenet9.carleton.ca>
Source record: 29116

You are right about the shift and keying speed (850 Hz at 75 baud). What appears to be a doubling of the keying speed is actually Mark-Space reversals, still sent at 75 baud.

The signal is not bulk encrypted but individual messages seem to be.

The reversals are sent before the beginning of a message and again after the end of it. I also observed periods of unmodulated carrier sent between periods of reversals, probably while the operator changed tapes or loaded another message into the computer or crypto device.

If I listened carefully, it seemed that the beginning of some messages contained a rhythmic pattern which lasted a few seconds. I looked for a frame pattern, out to 226.8 msec (the limit of my software) but found none, so this introductory pattern must be longer than that. Also I could find no frame pattern within the bits of a message (more evidence of encryption), out to 226 msec.

The freqs you mentioned aren't listed in my 2003 Klingenfuss list of utility stations, so I guess it is a relatively new station.

Have you checked the Worldwide Utility News (WUN) website?? (Sorry I don't have their URL.) Some of their monitors might be able to ID the station. (It's not in an exclusive Amateur band, so it's not a problem for me HI)

73,
... Martin VE3OAT

IARU Region 2 Monitoring System Coordinator
www.storm.ca/~iarumsr2
("the intruder watch folks")

gudmundur (hexter@blazenet.net) writes:
> There are four very strong signals here on the east coast of U.S.A., I here
> them best after dusk.
>
> 3.084mhz 3.102mhz 3.126mhz and 3.132mhz
>
> Here is what I know,
>
> 1000hz center frequency
> 850hz shift
> 75baud / 13.3ms so it would appear
>
>
> The signal stops erratically on both space and mark tones. Also, at

> times the baud rate seems like it becomes very fast, perhaps double.
>
> I hear this same exact 'signature' signal in many places, on many bands,
> and can't seem to decode it with normal 5 level baudot programs. However,
> the signal doesn't seem to be ascii either.
>
> Anyone want to give a listen, and tell me what I need. Are they encrypted,
> or do I just need a different rtty-to-text convertor?
>
> TNX KD3SH
>

730. Re: How good is ferrite 75 material for crystal AM radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 02:40:03 UTC
From: Xerjat <xerjat@yahoo.com>
Message-ID: <101i5at1vip5c3f@corp.supernews.com>
Source record: 29126

A good mix is 61, There is a winding table for the different cores located at www.crystalradio.us
Also there are plans listed. Cores are a easy way to get a respectable Q.
The worldwide crystal set contest starts this weekend look for info at the site

"beginner" <beginner@nowhere.com> wrote in message news:1012mg7devgth5c@corp.supernews.com...
> I made an inductor by winding 14 turns on T82-75 torroid.
> Using 180 pF variable capacitor, in a crystal radio circuit I could not
> pick up any signal but even with a 470 uH modded inductor I picked up a few
> signals.
>
> Is this material not suitable for this appication?
>
> Thanks

731. Re: KIWA Air core Am loop details wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 02:47:20 UTC
From: "Jim, N2VX" <ZZZjim_cronin@juno.comZZZ>
Message-ID: <b0tg10hln8rj9308g6fkenhllg0fpdqtff@4ax.com>
Source record: 29117

On Tue, 27 Jan 2004 23:09:59 -0600, "Nocturnal1"
<file13@nojunkmail.com> wrote:

>Can anyone tell me how detailed the schematic diagram in the manual is? I
>can't afford to buy the loop, but am pretty good a cobbling and crafting and
>coming up with something that works. Is there a kind soul out there who is
>willing to scan and email a copy of the manual? Perhaps I could build a
>workable clone from the circuit details in the manual. I'm also looking for
>closeup pictures of details of the loop and circuitry - anything that would
>help in producing a viable clone (they don't make 'em anymore).
>
>~Tom

Tuned loop antennas for AM broadcast band are easy to build and work
well. Do a search for National Radio Club, a MW DXer association.
You can build a simple loop that works with your ferrite rod antenna
radio or spend more time on something with a FET preamp or mount it
outside with remote tuning.

I got good results with a 2 foot tuned loop with a shielded pickup
loop inside it. You should be able to find it on the NRC site.

Don't know about the Kiwa, but there are only so many variations on
the theme.

73,
Jim
N2VX

732. NPO cap markings?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 06:08:35 UTC
From: n2cqr@clix.pt
Message-ID: <97f305da.0401282208.4cbda0ce@posting.google.com>
Source record: 29118

A while back I got the NORCAL capacitor kit. Very useful. But I've
forgotten how the NPO caps are marked. Does the black mark at the
top indicate NPO?
Thanks, 73 Bill N2CQR M0HBR

733. Re: KIWA Air core Am loop details wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 06:45:28 UTC
From: Nocturnal1 <file13@nojunkmail.com>
Message-ID: <4018aae8$1_3@newspeer2.tds.net>
Source record: 29119

I've built several loops and they are all similar as you say, but the KIWA loop is quite a different animal! I've have mild success with what I've done so far in my efforts to duplicate one, but I cannot seem to find much on the regenerative loop and circuitry contained within it.

~Tom in Mn

734. Re: NPO cap markings?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 06:53:37 UTC
From: matt wilson <mwilson2@nospam.bigpond.net.au>
Message-ID: <R52Sb.33039$Wa.15263@news-server.bigpond.net.au>
Source record: 29120

Yes (In all the ones I know of, at any rate.)
VK3ZMW

"Bill Meara" <n2cqr@clix.pt> wrote in message
news:97f305da.0401282208.4cbda0ce@posting.google.com...
> A while back I got the NORCAL capacitor kit. Very useful. But I've
> forgotten how the NPO caps are marked. Does the black mark at the
> top indicate NPO?
> Thanks, 73 Bill N2CQR M0HBR

735. Designing a directional coupler for 2m & 70cm

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 09:11:06 UTC
From: St&#65533;phane Rey <sre_prolem@yahoo.com>
Message-ID: <4018ce28$1@news.deckpoint.ch>
Source record: 29121

Hello,

I'm looking for documentation explaning how to design and built directional couplers for 2m and 70 cm application.

I've found a lot of links for the theory but nothing explaning how to compute the parameters and built it .

Any suggestion appreciated

Thanks
Stephane, F1TJJ

736. Anyone know of a source for a computer controlled vfo?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 09:27:39 UTC
From: harri.sillanpaa@lsk.fi
Message-ID: <a648a9be.0401290127.794705aa@posting.google.com>
Source record: 29122

Anyone know of a source for a computer controlled vfo?

Control via serial port to ex. Yeasu,Icom - remote control protocol.

I would like to update my old analog vfo to computer controlled vfo.

Remote vfo control to 4,9 - 5,5 Mhz.

73 Harri OH3PC

email: oh3pc@sral.fi

737. Re: Anyone know of a source for a computer controlled vfo?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 09:58:11 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <4018d935$0$27800$cc9e4d1f@news.dial.pipex.com>
Source record: 29123

OH3PC wrote:

> Anyone know of a source for a computer controlled vfo?
>
> Control via serial port to ex. Yeasu,Icom - remote control protocol.
>
> I would like to update my old analog vfo to computer controlled vfo.
>
> Remote vfo control to 4,9 - 5,5 Mhz.

Two options:

Use a DDS chip like the AD9850 controlled by an MCU with a serial interface.

Use a PLL synthesiser controlled by an MCU with a serial interface.

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

738. Re: Anyone know of a source for a computer controlled vfo?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 12:26:05 UTC
From: CC <Administrator@127.0.0.1>
Message-ID: <xZ6Sb.85390$f97.7974@fe3.columbus.rr.com>
Source record: 29124

http://www.njqrp.org/dds/index.html

OH3PC wrote:
> Anyone know of a source for a computer controlled vfo?
>
> Control via serial port to ex. Yeasu,Icom - remote control protocol.
>
> I would like to update my old analog vfo to computer controlled vfo.
>
> Remote vfo control to 4,9 - 5,5 Mhz.
>
> 73 Harri OH3PC
>
> email: oh3pc@sral.fi

739. DDS daughter card

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 13:11:38 UTC
From: tk <gamach1@ispwest.com>
Message-ID: <bvb0qj01hpt@enews1.newsguy.com>
Source record: 29125

can someone tell me a part number and source for a female receptacle
that fits the 8 prong plug that provides connections from the DDS DC.

Thabks

Ted in Atlanta KD4EE

740. Re: KIWA Air core Am loop details wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 14:27:47 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <DL8Sb.134777$6y6.2622331@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29127

I saw a schematic for the amplifier years ago. They key was what appeared to be linear optoisolators in the feedback circuitry.
I was going to build it up, but it looked as if the designer put quite a bit of work into the circuit design, so I took a pass on it.
I purged the details from my hard drive a few years back.

Pete

"Nocturnal1" <file13@nojunkmail.com> wrote in message news:4018aae8$1_3@newspeer2.tds.net...
> I've built several loops and they are all similar as you say, but the KIWA
> loop is quite a different animal! I've have mild success with what I've done
> so far in my efforts to duplicate one, but I cannot seem to find much on the
> regenerative loop and circuitry contained within it.
>
> ~Tom in Mn
>
>

741. Re: 2m Amplifier Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 14:32:45 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <hQ8Sb.134798$6y6.2622981@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29128

Hey Jim,
How is that HRO500 doing?

Pete

"jimbo" <jimbo@nospam.com> wrote in message
news:40171986.D52AA7CD@nospam.com...
> http://www.communication-concepts.com/hf_amplifiers.htm
>
> Am I missing something here ???
>
> jimbo
>
> Wes wrote:
>
> > On Wed, 28 Jan 2004 00:35:11 GMT, jimbo <jimbo@nospamforme.com> wrote:
> >
> > |hi jason,
> > |
> > |Check out this site, many good amplifers from Motorola designs.
> > |
> > |http://www.communication-concepts.com/default.htm
> >
> > Those aren't "amplifiers", they are "drivers."
> >
> > These are amplifiers:
> >
> > http://web.wt.net/~w5un/8877-1.htm
> >
> > http://www.svetlana.com/docs/TechBulletins/technoteNo42.html
> >
> > http://www.qsl.net/dl4mea/2g35.htm
> >
> > http://www.qsl.net/wb5apd/144_new_amp.html
> >
> > etc. etc...
>

742. EMI-RFI Banned for sale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 14:53:10 UTC
From: fazamy@aol.com
Message-ID: <20040129095310.17180.00001035@mb-m03.aol.com>
Source record: 29129

I've been trying to track down a source conductive spray paint. A rep from a electronics co. said that such stuff has been banned for sale by the EPA. He sounded convincing to me.

Is this kind of a product legally available in the US. I'd like to know?

73, de KB2AMY

743. FA: Zenith L515-W AM Telechron Clock Tube Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 15:20:01 UTC
From: tuber <havefun@aol.com>
Message-ID: <Xns947F69189C602tuber@207.250.5.36>
Source record: 29130

Up for auction is a nice Zenith L515-W AM Tube Radio from the early 1950's, featuring a Telechron Clock with sleep control, and Bakelite case. It is in very good condition.

Ebay item number: 2221510600

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=2221510600

744. Re: DDS daughter card

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 16:41:47 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <fJaSb.1342$ic.310@nwrdny01.gnilink.net>
Source record: 29131

Ted,
There are many manufacturers of compatible connectors and many different configurations. In general, they are referred to in the vernacular as .1" single-row headers, or .1" single row header sockets, or something similar. If you open a Digi-Key or Mouser catalog, you'll find many choices.

In order to recommend the right one for you , it's importamt to understand your application. Will the DDS board be PCB mounted or connected to a cable harness? If PCB mounted, do you want the DDS board to lay flat on the application PCB or at right angles to the board?

When you look at the catalogs you'll get a much better idea of the choices.

Joe
W3JDR

"tk" <gamach1@ispwest.com> wrote in message
news:bvb0qj01hpt@enews1.newsguy.com...
> can someone tell me a part number and source for a female receptacle
> that fits the 8 prong plug that provides connections from the DDS DC.
>
> Thabks
>
> Ted in Atlanta KD4EE

745. Re: EMI-RFI Banned for sale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 17:35:07 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <4019444B.753EF5EB@rica.net>
Source record: 29132

FAZAMY wrote:
>
> I've been trying to track down a source conductive spray paint. A rep from a
> electronics co. said that such stuff has been banned for sale by the EPA. He
> sounded convincing to me.
>
> Is this kind of a product legally available in the US. I'd like to know?
>
> 73, de KB2AMY

Have you searched Google yet?

--
John Popelish

746. Re: EMI-RFI Banned for sale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 17:37:19 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <101ih67iopdd7f8@corp.supernews.com>
Source record: 29133

It sounds like there was one type that people were using, and it must have had something nasty in it. I firmly believe that a conductive spray paint could be made that is durable and environmentally safe, however.

Someone will come out with something to replace it, or already has so keep digging. Perhaps you should consider some clever kluge like contact cement and foil for your immediate needs?

"FAZAMY" <fazamy@aol.com> wrote in message
news:20040129095310.17180.00001035@mb-m03.aol.com...
> I've been trying to track down a source conductive spray paint. A rep
from a
> electronics co. said that such stuff has been banned for sale by the EPA.
He
> sounded convincing to me.
>
> Is this kind of a product legally available in the US. I'd like to know?
>
> 73, de KB2AMY

747. Re: NPO cap markings?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 17:39:36 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <101ihaglhmsdjc6@corp.supernews.com>
Source record: 29134

It sounds like you just need to know for this one kit, but the designation "C0G" also indicates a zero temperature coefficient, it's just a different nomenclature than used with NP0.

"matt wilson" <mwilson2@nospam.bigpond.net.au> wrote in message news:R52Sb.33039$Wa.15263@news-server.bigpond.net.au...
> Yes (In all the ones I know of, at any rate.)
> VK3ZMW
>
> "Bill Meara" <n2cqr@clix.pt> wrote in message
> news:97f305da.0401282208.4cbda0ce@posting.google.com...
> > A while back I got the NORCAL capacitor kit. Very useful. But I've
> > forgotten how the NPO caps are marked. Does the black mark at the
> > top indicate NPO?
> > Thanks, 73 Bill N2CQR M0HBR
>
>

748. Re: DDS daughter card

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 17:52:53 UTC
From: Gavin Jacobs <nochancey@mrwhalen.com>
Message-ID: <VLbSb.31556$P51.15052@clgrps12>
Source record: 29135

For testing purposes, I have the DDS Daughtercard in a DIP socket that has wire-wrip legs. The socket fits snugly into the proto board and makes it easy to check out your newly built card.

"W3JDR" <joe@roccis.com> wrote in message news:fJaSb.1342$ic.310@nwrdny01.gnilink.net...
> Ted,
> There are many manufacturers of compatible connectors and many different
> configurations. In general, they are referred to in the vernacular as .1"
> single-row headers, or .1" single row header sockets, or something similar.
> If you open a Digi-Key or Mouser catalog, you'll find many choices.
>
> In order to recommend the right one for you , it's importamt to understand
> your application. Will the DDS board be PCB mounted or connected to a cable
> harness? If PCB mounted, do you want the DDS board to lay flat on the
> application PCB or at right angles to the board?
>
> When you look at the catalogs you'll get a much better idea of the choices.
>
> Joe
> W3JDR
>
>
> "tk" <gamach1@ispwest.com> wrote in message
> news:bvb0qj01hpt@enews1.newsguy.com...
> > can someone tell me a part number and source for a female receptacle
> > that fits the 8 prong plug that provides connections from the DDS DC.
> >
> > Thabks
> >
> > Ted in Atlanta KD4EE
>
>

749. Re: EMI-RFI Banned for sale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 17:56:11 UTC
From: mikea@mikea.ath.cx
Message-ID: <bvbhfrunf8@puck.litech.org>
Source record: 29136

FAZAMY <fazamy@aol.com> wrote:
> I've been trying to track down a source conductive spray paint. A rep from a
> electronics co. said that such stuff has been banned for sale by the EPA. He
> sounded convincing to me.

> Is this kind of a product legally available in the US. I'd like to know?

I'd be mildly surprised if conductive paint has been banned, as IBM
uses _a_ _lot_ of it in their mainframes, to make the enclosures as
close to Faraday cages as they can get them consistent with having
holes cut in the sides and bottoms for cable access.

But if you mean "conductive paint in spray cans", that may be a
totally different thing. I'd call some paint manufacturers -- Krylon
and Rustoleum for starters. Probably they have "800" numbers that are
on the cans in the hardware stores, and "800" number information calls
generally are free.

--
Mike Andrews
mikea@mikea.ath.cx
Tired old sysadmin

750. Re: EMI-RFI Banned for sale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 17:59:35 UTC
From: Eddie Haskel <wiseguy@clever.com>
Message-ID: <bSbSb.17720$Np5.8714@newssvr27.news.prodigy.com>
Source record: 29137

YES! I recently purchased some of it to coat the inside of a plastic cased radio scanner to shield the inside chassis. Bought it from "Electronic City" located in Burbank Ca. Their telephone number is (818) 842-5275.
I'm not at home right now or I could get the can and give you the data from it. Hopefully the folks at Electronic City can help you on this...Eddie

"FAZAMY" <fazamy@aol.com> wrote in message news:20040129095310.17180.00001035@mb-m03.aol.com...
> I've been trying to track down a source conductive spray paint. A rep from a
> electronics co. said that such stuff has been banned for sale by the EPA. He
> sounded convincing to me.
>
> Is this kind of a product legally available in the US. I'd like to know?
>
> 73, de KB2AMY

751. Re: Designing a directional coupler for 2m & 70cm

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 18:13:54 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <101ijarkbuunt69@corp.supernews.com>
Source record: 29138

The ARRL handbooks have these off and on -- no parameter computation, just things that work. The copy I have at my desk is 1976 (don't ask me why -- in 1976 they'd given up on tubes and were barely figuring out how to make decent solid-state circuits, but there you are). It has one for VHF/UHF, it's on page 636, and it's made mostly from copper pipe from a plumbing store.

The UHF experamenter's manual probably has something, too.

"St&#65533;phane Rey" <sre_prolem@yahoo.com> wrote in message
news:4018ce28$1@news.deckpoint.ch...
> Hello,
>
> I'm looking for documentation explaning how to design and built
directional
> couplers for 2m and 70 cm application.
>
> I've found a lot of links for the theory but nothing explaning how to
> compute the parameters and built it .
>
> Any suggestion appreciated
>
> Thanks
> Stephane, F1TJJ
>
>

752. Re: Language Translator (Was La chance de votre vie)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 18:45:35 UTC
From: ON5MJ <my_call_sign@skynet.be>
Message-ID: <401953f6$0$13246$ba620e4c@news.skynet.be>
Source record: 29139

Hi Tom,

> Whenever I come across a posting in French I politely say "gesundheit"

Could it be " ? votre sant? " ?

Prosit.

73 de Jacques - ON5MJ

753. Re: Designing a directional coupler for 2m & 70cm

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 19:49:05 UTC
From: k7itm@aol.com
Message-ID: <3200347.0401291149.459e55da@posting.google.com>
Source record: 29140

I'm not sure what's in current versions of the ARRL VHF/UHF manual,
but I know that older ones have articles on building SWR bridges. You
can just delete the detectors if you want to use them as directional
couplers. Also, you can download "RFSim99" for free, and you will
find in it a little design ap for directional couplers, in microstrip,
stripline, transformer-type, lumped and transmission line. The ap is
under "tools-->components-->coupler" in the pulldown menus. Note that
the microstrip and stripline assume the coupler is 1/4 wave long for
the given coupling--something the ap fails to point out.
Interestingly, 1/4 wave couplers (microstrip or stripline or the like)
give the same coupling at 3/4 wave...in other words, at the third
harmonic, which is useful for 146MHz and 440MHz. This is not true of
the lumped. The transformer style depends on the bandwidth of the
transformers.

Cheers,
Tom

"Stï¿½phane Rey" <sre_prolem@yahoo.com> wrote in message
news:<4018ce28$1@news.deckpoint.ch>...
> Hello,
>
> I'm looking for documentation explaning how to design and built directional
> couplers for 2m and 70 cm application.
>
> I've found a lot of links for the theory but nothing explaning how to
> compute the parameters and built it .
>
> Any suggestion appreciated
>
> Thanks
> Stephane, F1TJJ

754. field strength formula/program

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 20:31:49 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1075408448.114351@smtp-1.griffin.com>
Source record: 29141

i should have this but i dont..so has anyone the formula (or even better a working program) for working out relative field strength, x miles from transmitter, taking into account frequency and height above ground etc...

thanks Simon G0ZEN

755. field strength formula/program

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 20:34:07 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1075408449.831944@smtp-1.griffin.com>
Source record: 29142

i should have this but i dont..so has anyone the formula (or even better a working program) for working out relative field strength, x miles from transmitter, taking into account frequency and height above ground etc...

thanks Simon G0ZEN

756. Re: distance of radio transmitter from receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 20:44:36 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <bvbretkhf1@newshost.mot.com>
Source record: 29144

I these kind of system it is the field strength that is the most important
not the distance. A radio system needs signal strength and that is the
primary reason to measure it. There is a desire to get distance from it,
but this is more of a dream rather tham reality. In cellular systems, it
can be used and give pretty goos location in SOME cases.

I say, for the described situation, RF is NOT the way due to the timing
requirements.
Steve N.

"Sverre Holm" <la3za.0junk4me@qsl.net> wrote in message
news:bv7o00$s0$1@maud.ifi.uio.no...
> > Signal strength as a coarse distance indication is only good at very
> > long ranges relative to wavelength. Even then it is uncertain.
>
> New location systems based on WLAN (2.4 GHz) use field strength combined
> with what seems to be some sort of adaptive algorithm that learns the
field
> strength vs environment through repeated tests. See www.ekahau.com and
> www.radionor.com. These companies promise location for 'free', as they can
> locate laptops by using the existing hardware infrastructure of the
wireless
> network. This is a very hot topic these days, and large business
> opportunities are expected.
>
> But accuracies are in the 1 m range, to get to 1 cm accuracy there does
not
> seem to be any alternative to ultrasound systems, see demo on
> www.sonitor.com.
>
>
> --
> Sverre Holm, LA3ZA
> ---------------------------------
> www.qsl.net/la3za
>
>
>
>
>
>
>
>

757. Re: distance of radio transmitter from receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 20:53:26 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <bvbrvf$l7h$1@newshost.mot.com>
Source record: 29047

I think this will be easier than using RF. However, even though the IF is 25 kHz, you are still measuring small time differences. I just think this hardware will be easier than RF. Mostly because you can control where it goes better. This, of course, assumes you can do that in the target system The OP has to decide.

That being said.... oneof those 10 GHz door opener or motion detector units (does the GunnPlexer have a DC output from its detector?) would be another interesting method. You can easily see small motions in the reflected signal phase difference and this is at the 10GHz freq. so the resolution is high. You do need to insure that the desired reflection is the only one...similar to the LED type of system.

An aiming problem.

Steve N.

<no_email_addy@no_email_addy.com> wrote in message news:0v3f10htiftamlmmhhpgbgq7lu2db7pfth@4ax.com...
>
> We did a unit at my last job called 'velocity of light'.
>
> It was pretty simple and you cud accurately measure distance down to 1cm.
>
> Infrared led emitter switched at 50MHz, focused using a lens to a 2 inch beam,
> reflected back by a mirror to an infrared detector (5 inches away from the
> emitter).
>
> The tx 50MHz was generated using a 50MHz xtal which drove the tx led.
>
> Their was a 50.025MHz second xtal osc which was used to mix down both the tx
> signal and the rx signal to 25KHz IF (we now have 2 25KHz waveforms), these two
> 25KHz carriers were then phase compared - so easy to see the smallest of
> movements in the mirror on a basic scope.
>
> So all the hard work is done at 25KHz (phase measuring) - one of todays little
> mcpu's will do this easily (ATmega16 for example).
>
> You could just as easily use laser or maybe rf in place of the IR led's, though
> directing RF at such low freq's would be somewhat difficult.

>
> Obviously at 50MHz, the phase difference would cycle every 6 meters (total
> reflected path), but if your a bit cleverer (though not hard to do) you
could
> get the freq to sweep from a low freq (say 5MHz) upto wot ever you like -
using
> a pair of single xtal referenced PLL's to generate the two oscillator
freq's
> (whilst maintaining the 25KHz difference) and then calculate an exact
distance
> in the cpu.
>
> This method is simple and relatively cheap to judge distances very
accurately
> with no need for very short pulses (high bandwidths) and very fast logic.
>
> Clive
>

Forgot to say.

A 90deg phase change in the reflected beam (at 50MHz) also results in a
90deg
phase change in the rx'ed 25KHz IF) - this is why no fast logic is required.

758. Re: EMI-RFI Banned for sale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 21:03:07 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <bvbsea$m22$1@hercules.btinternet.com>
Source record: 29143

> Have you searched Google yet?
>
==========

Why worship Google?

Google offers the the same quality of information as is available on this newsgroup. There is no way of detecting the difference between good and bad.

759. Re: Need help decoding rtty signal

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 21:05:58 UTC
From: anc <anc@nospam.net>
Message-ID: <401975b9$0$204$fa0fcedb@lovejoy.zen.co.uk>
Source record: 29145

gudmundur wrote:

> There are four very strong signals here on the east coast of U.S.A., I
> here
> them best after dusk.
>
> 3.084mhz 3.102mhz 3.126mhz and 3.132mhz
>
> Here is what I know,
>
> 1000hz center frequency
> 850hz shift
> 75baud / 13.3ms so it would appear
>
>
> The signal stops erratically on both space and mark tones. Also, at
> times the baud rate seems like it becomes very fast, perhaps double.
>
> I hear this same exact 'signature' signal in many places, on many bands,
> and can't seem to decode it with normal 5 level baudot programs. However,
> the signal doesn't seem to be ascii either.
>
> Anyone want to give a listen, and tell me what I need. Are they
> encrypted,
> or do I just need a different rtty-to-text convertor?
>
> TNX KD3SH

You may need to look this up in the Klingenfuss Data handbook, many RTTY signals can be tuned in and received OK but are encrypted. There may be a copy of the latest edition in your library.

760. Re: field strength formula/program

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 21:07:29 UTC
From: anc <anc@nospam.net>
Message-ID: <40197614$0$204$fa0fcedb@lovejoy.zen.co.uk>
Source record: 29146

zindazenda wrote:

> i should have this but i dont..so has anyone the formula (or even better a
> working program) for working out relative field strength, x miles from
> transmitter, taking into account frequency and height above ground etc...
>
> thanks Simon G0ZEN

Have a look at this link, HTH.

http://www.zen22142.zen.co.uk/Analysis/efftxd.htm

761. Re: EMI-RFI Banned for sale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 22:00:44 UTC
From: dplatt@radagast.org
Message-ID: <101j0kcreqirfd4@corp.supernews.com>
Source record: 29048

>I've been trying to track down a source conductive spray paint. A rep from a
>electronics co. said that such stuff has been banned for sale by the EPA. He
>sounded convincing to me.
>
>Is this kind of a product legally available in the US. I'd like to know?

http://www.miller-stephenson.com/

Click on "Products", then on "Conductive Coating". Their MS-487N is a
nickel-based conductive paint, intended for RFI/EMI shielding.
Will attack acrylic, polycarbonate, polystyrene plastics. It's
available as a liquid but not as an aerosol. You might be able to use
it in a commercial airless paint sprayer.

Less formal solutions to the problem, which I have seen suggested but
have not actually tested myself, include:

- Carbon-based black spraypaint intended for high-temperature
applications such as woodstoves, stovepipes, etc.

- Zinc-based "cold galvanizing" spraypaint.

I have no idea what sort of attenuation you'd get from either of
these, or what sort of surface preparation, priming, or overcoating
might be required on various materials.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

762. Re: EMI-RFI Banned for sale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 22:41:29 UTC
From: donutbandit <none@none.com>
Message-ID: <bvc26p$3tq$4@news.snowcrest.net>
Source record: 29049

"Reg Edwards" <g4fgq.regp@ZZZbtinternet.com> wrote in
news:bvbsea$m22$1@hercules.btinternet.com:

> Why worship Google?
>
> Google offers the the same quality of information as is available on this
> newsgroup. There is no way of detecting the difference between good and
> bad.

A person should always do a Google search before asking a question in a newsgroup. It's likely been discussed dozens of times before. This could make the question not needing to be asked in the first place - or, the asker could then ask with some background of knowledge.

You will very likely find more than you ever wanted to know about the subject by searching Google.

763. Re: EMI-RFI Banned for sale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-29 23:04:04 UTC
From: Cambio <CAM@ripped.net>
Message-ID: <EjgSb.2014$IF1.1384@fed1read01>
Source record: 29050

I'll add to that -- a lot of folks don't know that Google can search not
only the Web -- but Newsgroups and Images as well.
URL: Google http://www.google.com/
See search for -- web, -- groups, -- images, -- directory

A good example is oil for a Heath Cantenna (or equivalent)

This question appears every month or so.

But using google GROUPS -- type in Dummy Load Oil -- get hundreds of
useful (and so not useful) advice.

Want to see an ARC-5 Command set -- use images.

Great resource -- googles the mind
.
73 Cambio

"donutbandit" <none@none.com> wrote in message
news:bvc26p$3tq$4@news.snowcrest.net...
> "Reg Edwards" <g4fgq.regp@ZZZbtinternet.com> wrote in
> news:bvbsea$m22$1@hercules.btinternet.com:
>
> > Why worship Google?
> > ---------------------
> > Google offers the the same quality of information as is available on
this
> > newsgroup. There is no way of detecting the difference between good and
> > bad.
>
> A person should always do a Google search before asking a question in a
> newsgroup. It's likely been discussed dozens of times before. This could
> make the question not needing to be asked in the first place - or, the
> asker could then ask with some background of knowledge.
>
> You will very likely find more than you ever wanted to know about the
> subject by searching Google.

764. Re: NPO cap markings?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 01:59:36 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <6iej10lqo15a7kj07k4pu9usup65vdhs9p@4ax.com>
Source record: 29052

On Thu, 29 Jan 2004 09:39:36 -0800 "Tim Wescott"
<tim@wescottnospamdesign.com> wrote:

>It sounds like you just need to know for this one kit, but the designation
>"C0G" also indicates a zero temperature coefficient, it's just a different
>nomenclature than used with NP0.

COG is the modern designation. It replaced NPO about 15-20 years ago.

I have no idea why.

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA
---

765. Submariners, Loran C question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 02:05:19 UTC
From: hexter@blazenet.net
Message-ID: <101jeuv4c3krla9@corp.supernews.com>
Source record: 29051

Is the 100khz Loran C signal useable while submerged? Do to it's
long wave nature, does it penetrate the surface to any depth beyond
a few feet?

766. pink top trimmer cap info req.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 03:30:33 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1075433555.868189@smtp-1.griffin.com>
Source record: 29053
Cross-posted to: rec.radio.amateur.homebrew,uk.radio.amateur

has anyone got the spec. on i think Philips made, pink top trimmers..they appear to be about 80pf, have a pink top.ptfe insulation.(i think).a black base.3 legs.the vanes being soldered to the centre pin..about the same physical size as blue spot;s but without thesquare frame...ie like the standard yellow 65pf trimmers...

looking for max voltage rating..
are they as good as philips blue spot???

cheers simon g0zen

767. pink top trimmer cap info req.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 03:32:25 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1075433558.108242@smtp-1.griffin.com>
Source record: 29054
Cross-posted to: rec.radio.amateur.homebrew,uk.radio.amateur

has anyone got the spec. on i think Philips made, pink top trimmers..they appear to be about 80pf, have a pink top.ptfe insulation.(i think).a black base.3 legs.the vanes being soldered to the centre pin..about the same physical size as blue spot;s but without thesquare frame...ie like the standard yellow 65pf trimmers...

looking for max voltage rating..
are they as good as philips blue spot???

cheers simon g0zen

768. help motorola msf5000 uhf repeater

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 05:18:42 UTC
From: Toby Hoover <n9fdf@verizon.net>
Message-ID: <SOISb.2631$pk1.2583@nwrddc03.gnilink.net>
Source record: 29055

look for info on converting it over to ham band.. and useing a cat 300
controller..
on.. it...
toby
n9fdf@verzion.com

769. Re: 2m Amplifier Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 06:43:48 UTC
From: jimbo <jimbo@don't_try_this_at_home.com>
Message-ID: <E2nSb.139707$6y6.2718433@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29056

hello Wes,

I will admit this is over my head if you'll admit trying to reply to
a .nospam.com email address is over your head !

lol,

share your info with all on usenet that is what it is for !

regards,

jimbo

Wes wrote:

> On Wed, 28 Jan 2004 02:08:07 GMT, jimbo <jimbo@nospam.com> wrote:
>
> |http://www.communication-concepts.com/hf_amplifiers.htm
> |
> |Am I missing something here ???
>
> Yes and I tried to respond to your email message but your spoofed your
> return address, so forget about it. If it's over your head, so be it.

770. Re: 2m Amplifier Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 06:44:14 UTC
From: jimbo <jimbo@don't_try_this_at_home.com>
Message-ID: <4019FD3D.CB0D0BFE@nospam.com>
Source record: 29057

hello Wes,

I will admit this is over my head if you'll admit trying to reply to
a .nospam.com email address is over your head !

lol,

share your info with all on usenet that is what it is for !

regards,

jimbo

Wes wrote:

> On Wed, 28 Jan 2004 02:08:07 GMT, jimbo <jimbo@nospam.com> wrote:
>
> |http://www.communication-concepts.com/hf_amplifiers.htm
> |
> |Am I missing something here ???
>
> Yes and I tried to respond to your email message but your spoofed your
> return address, so forget about it. If it's over your head, so be it.

771. Re: 2m Amplifier Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 06:44:35 UTC
From: jimbo <jimbo@don't_try_this_at_home.com>
Message-ID: <4019FD52.EE81977E@nospam.com>
Source record: 29058

hello Wes,

I will admit this is over my head if you'll admit trying to reply to
a .nospam.com email address is over your head !

lol,

share your info with all on usenet that is what it is for !

regards,

jimbo

Wes wrote:

> On Wed, 28 Jan 2004 02:08:07 GMT, jimbo <jimbo@nospam.com> wrote:
>
> |http://www.communication-concepts.com/hf_amplifiers.htm
> |
> |Am I missing something here ???
>
> Yes and I tried to respond to your email message but your spoofed your
> return address, so forget about it. If it's over your head, so be it.

772. Re: EMI-RFI Banned for sale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 06:47:26 UTC
From: donutbandit <none@none.com>
Message-ID: <bvculuibe2@news.snowcrest.net>
Source record: 29059

"Cambio" <CAM@ripped.net> wrote in news:EjgSb.2014$IF1.1384@fed1read01:

http://groups.google.com/

A search window for every newsgroup that Google hosts.

773. FS Ad - Electronic Components including TIL311 Hex Displays - LEDs - TTL Chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 06:58:32 UTC
From: jrparts@excite.com
Message-ID: <ed45b0c5.0401292258.6130710a@posting.google.com>
Source record: 29060
Cross-posted to: rec.ham-radio.swap,rec.radio.amateur.homebrew,uk.radio.amateur

All prices are in US Funds.

QTY. Part # Unit Price Description
---- --------- ---------- -----------
OPTO.

94 TIL311 $7.00 ea. The TI TIL-311 is a Hexadecimal Dot
Matrix Display with integral TTL driver
electronics to accept, store & display
4-bit binary data, Epoxy package
(Note: This part wholesales at about $16.50 each)

8 TIL311A $7.00 ea. The TI TIL-311A is a Hexadecimal Dot
Matrix Display with integral TTL driver
circuit to accept, store & display
4-bit binary data, Plastic package

11 DIS1417 $7.00 ea. The TI DIS-1417 is a Hexadecimal Dot
Matrix Display with integral TTL driver
circuit to accept, store & display
4-bit binary data, Epoxy package

For a copy of the TIL311 Datasheet see:
http://www-s.ti.com/sc/ds/til311.pdf and it is mirrored at
http://umwnt1.physics.lsa.umich.edu/mttc/images/til311.pdf

275 Green LED $0.10 ea. Rectangular 5mm x 2mm face/lens
$17.50 per bag of 250 ($0.07 each) and

8,250 Red LED $0.10 ea. T1 3/4, 5mm Diameter or 0.2" Diameter
Sharp P/N: GL5PR4 (5mA at 1.9V)
$17.50 per bag of 250 ($0.07 each) and
$100 per box of 2000 ($0.05 each)

106 MAN6440 $0.95 ea. Dual Digit, Green 7 Segment display,
0.56" tall character, Common Cathode
$15 per tube of 20 MAN- 6440 ($0.75 ea.)

85 FND6740 $0.95 ea. Dual Digit, Red 7 Segment display,
0.56" tall character, Common Cathode
$15 per tube of 20 FND-6740 ($0.75 ea.)

TTL CHIPS, DIP Package

525 7407N $0.18 ea. $4.00 per tube of 25 ($0.16 each)
Hex Non-Inverted Buffer with
Open-Collector outputs

605 74ALS20AN $0.19 ea. $4.00 per tube of 25 ($0.16 each)
Dual 4-Input Positive NAND Gates

240 74ALS27AN $0.19 ea. $4.00 per tube of 25 ($0.16 each)
Triple 3-Input Positive NOR Gates

1,325 74LS74AN $0.25 ea. $5.00 per tube of 25 ($0.20 each)
Dual D-Type Positive Edge-triggered
Flip-Flops with Preset and Clear.

100 74ALS74AN $0.25 ea. $5.00 per tube of 25 ($0.20 each)
Dual D-Type Positive Edge-triggered
Flip-Flops with Preset and Clear.

RESISTORS

55,000 100 Ohm, 5%, 1/4 Watt Carbon film resistor, $1 per 100,
$15 per box of 5000 or
$100 for 50,000 pieces.

3,400 220 Ohm, 5%, 1/4 Watt Carbon film resistor, $1 per 100,
$12 per box of 3400 or

3,400 680 Ohm, 5%, 1/4 Watt Carbon film resistor, $1 per 100,
$12 per box of 3400 or

A pack of 100 resistors is $4 inclusive shipping to anywhere
in the US and Canada

e-mail: jrparts@excite.com

Minimum purchase $4 including postage.

No shipping is included in the above prices. To quote a
total including shipping, I require your full ZIP code or
postal code in addition to a list of what you are interested
in. Please specify the country for international orders
outside of North America. The shipping you will be quoted
is the cost of the postage stamp (plus insurance if requested).

The only part that I will ship for a total of $4 (by regular
mail) to anywhere in the US and Canada is a pack of 100
resistors.

All components are new. All semi-conductors are stored in
anti-static tubes/bags or on anti-static foam if you purchase
less than a tube/bag.

Offers on the lot are welcome. Keep in mind that I am looking
for a price below wholesale, but more than the commercial buyers
of surplus electronic parts are offering.

774. Re: EMI-RFI Banned for sale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 07:43:36 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <2BjtjdCosgGAFA9u@ifwtech.co.uk>
Source record: 29061

Cambio wrote:
>I'll add to that -- a lot of folks don't know that Google can search
>not only the Web -- but Newsgroups and Images as well.
>URL:

The most useful URLs are the full-page "advanced searches". They are
easier and much more powerful than the standard one-line version.

Web search: http://www.google.com/advanced_search

Newsgroup search:
http://groups.google.com/advanced_group_search?hl=en

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

775. Re: Submariners, Loran C question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 08:02:23 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <pu0k105jv4saovau279b071gofpocl4gkc@4ax.com>
Source record: 29062

On Fri, 30 Jan 2004 02:05:19 -0000, hexter@blazenet.net (gudmundur)
wrote:

> Is the 100khz Loran C signal useable while submerged? Do to it's
>long wave nature, does it penetrate the surface to any depth beyond
>a few feet?

Losses are about 10 dB/m at 100 kHz.

Paul

776. Re: Designing a directional coupler for 2m & 70cm

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 10:53:27 UTC
From: St&#65533;phane Rey <sre_prolem@yahoo.com>
Message-ID: <401a37a4$1@news.deckpoint.ch>
Source record: 29063

Hey Tim, thanks for answer,
Could it be possible to have a copy of this page ?
Stephane

"Tim Wescott" <tim@wescottnospamdesign.com> wrote in message
news:101ijarkbuunt69@corp.supernews.com...
> The ARRL handbooks have these off and on -- no parameter computation, just
> things that work. The copy I have at my desk is 1976 (don't ask me why --
> in 1976 they'd given up on tubes and were barely figuring out how to make
> decent solid-state circuits, but there you are). It has one for VHF/UHF,
> it's on page 636, and it's made mostly from copper pipe from a plumbing
> store.
>
> The UHF experamenter's manual probably has something, too.
>
> "St&#65533;phane Rey" <sre_prolem@yahoo.com> wrote in message
> news:4018ce28$1@news.deckpoint.ch...
> > Hello,
> >
> > I'm looking for documentation explaning how to design and built
> directional
> > couplers for 2m and 70 cm application.
> >
> > I've found a lot of links for the theory but nothing explaning how to
> > compute the parameters and built it .
> >
> > Any suggestion appreciated
> >
> > Thanks
> > Stephane, F1TJJ
> >
> >
>
>

777. Re: Designing a directional coupler for 2m & 70cm

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 10:55:07 UTC
From: St&#65533;phane Rey <sre_prolem@yahoo.com>
Message-ID: <401a3809$1@news.deckpoint.ch>
Source record: 29064

Hey Tom,

Thanks a lot, I'm going to download this software and have a look. My mind was the power should be limited very low with PCB striplines, and I would like to design something up to about 100W.

Stephane

"Tom Bruhns" <k7itm@aol.com> wrote in message news:3200347.0401291149.459e55da@posting.google.com...
> I'm not sure what's in current versions of the ARRL VHF/UHF manual,
> but I know that older ones have articles on building SWR bridges. You
> can just delete the detectors if you want to use them as directional
> couplers. Also, you can download "RFSim99" for free, and you will
> find in it a little design ap for directional couplers, in microstrip,
> stripline, transformer-type, lumped and transmission line. The ap is
> under "tools-->components-->coupler" in the pulldown menus. Note that
> the microstrip and stripline assume the coupler is 1/4 wave long for
> the given coupling--something the ap fails to point out.
> Interestingly, 1/4 wave couplers (microstrip or stripline or the like)
> give the same coupling at 3/4 wave...in other words, at the third
> harmonic, which is useful for 146MHz and 440MHz. This is not true of
> the lumped. The transformer style depends on the bandwidth of the
> transformers.
>
> Cheers,
> Tom
>
>
> "St&#65533;phane Rey" <sre_prolem@yahoo.com> wrote in message news:<4018ce28$1@news.deckpoint.ch>...
> > Hello,
> >
> > I'm looking for documentation explaning how to design and built directional
> > couplers for 2m and 70 cm application.
> >
> > I've found a lot of links for the theory but nothing explaning how to
> > compute the parameters and built it .
> >
> > Any suggestion appreciated
> >
> > Thanks
> > Stephane, F1TJJ

778. Re: EMI-RFI Banned for sale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 14:07:09 UTC
From: fazamy@aol.com
Message-ID: <20040130090709.18989.00001216@mb-m28.aol.com>
Source record: 29065

Tnx Eddie for the tip. I called and ordered from your source.

To all the guys who were paising Google:
1. A search for conductive spray paint yields maybe 100k entries.
2. Overwhelmingly, conductive spray paint is an industrial/commercial product that has thousands of producers who sell and give info to industry types, not a consumer like me. (I learned a lot about the nature of this international industry.)
3. Those agents from these companies I reached on the landline were helpful, but yielded nothing for me.
4. My last resort was this GREAT newsgroup who I knew would come thru for me.

Thanks to all.
73, de KB2AMY

779. Re: 2m Amplifier Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 14:51:34 UTC
From: Wes Stewart <n7ws@_arrl.net>
Message-ID: <h1rk10l6pr96g9v5pr4hpnq0rlflov00dg@4ax.com>
Source record: 29066

I'll only respond to this once instead of three times.

Why would anyone send a private email to someone and not include a valid return email address? Selecting "reply" and typing a nice return message seemed like a logical thing to do. I didn't ever suppose that the idiot sending the message was just sending spam. Now I know better.

I was just trying to save you the embarrassment of further public ridicule.

Alas, I failed.

On Fri, 30 Jan 2004 06:44:35 GMT, jimbo
<jimbo@don't_try_this_at_home.com> wrote:

|hello Wes,
|
|I will admit this is over my head if you'll admit trying to reply to
|a .nospam.com email address is over your head !
|
|lol,
|
|share your info with all on usenet that is what it is for !
|
|regards,
|
|jimbo
|
|Wes wrote:
|
|> On Wed, 28 Jan 2004 02:08:07 GMT, jimbo <jimbo@nospam.com> wrote:
|>
|> |http://www.communication-concepts.com/hf_amplifiers.htm
|> |
|> |Am I missing something here ???
|>
|> Yes and I tried to respond to your email message but your spoofed your
|> return address, so forget about it. If it's over your head, so be it.

780. Re: help motorola msf5000 uhf repeater

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 16:32:49 UTC
From: "Dr. Anton.T. Squeegee" <SpammersArePondScum@dev.null>
Message-ID: <MPG.1a84270eda035d24989c30@192.168.42.131>
Source record: 29067

In article <SOlSb.2631$pk1.2583@nwrddc03.gnilink.net>, n9fdf@verizon.net says...

> look for info on converting it over to ham band.. and useing a cat 300
> controller..
> on.. it...
> toby
> n9fdf@verzion.com

First thing you need to worry about is which vintage of MSF it is.

Look at the model number, specifically the 3rd-6th characters (all letters). If they're "CLB," you will need the services of someone like Brinkley Electronics to program a new EPROM for your frequencies of choice.

If they're 'CXB,' you're better off in that the CXB series can be programmed with Motorola's MSF5000 RSS. Runs about $75 or so from Motorola, or there are folks (like me) who offer programming services. The kicker with that, of course, is that you would have to be local to me to get it done, and I don't think the '9' series calls show up anywhere near the Seattle region. ;-)

In addition to RSS, assuming your station is a CXB model, you will also need a 'RIB' (Radio Interface Box) and the appropriate cables. Lots of details along these (and other) lines may be had from the Batlabs site: http://www.batlabs.com

You may also want to look at: http://batboard.batlabs.com

The MSF5000 is a fine station. Enjoy it.

--
Dr. Anton Squeegee, Director, Dutch Surrealist Plumbing Institute
(Known to some as Bruce Lane, KC7GR)
kyrrin a/t bluefeathertech d-o=t c&o&m
Motorola Radio Programming & Service Available -
http://www.bluefeathertech.com/rf.html
"Quando Omni Flunkus Moritati" (Red Green)

781. Re: Submariners, Loran C question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 17:28:24 UTC
From: "J. Michael Milner" <jmmilner@att.not>
Message-ID: <YuwSb.36198$6O4.1013256@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29068

"Paul Keinanen" <keinanen@sci.fi> wrote in message
news:pu0k105jv4saovau279b071gofpocl4gkc@4ax.com...
> On Fri, 30 Jan 2004 02:05:19 -0000, hexter@blazenet.net (gudmundur)
> wrote:
>
> > Is the 100khz Loran C signal useable while submerged? Do to it's
> >long wave nature, does it penetrate the surface to any depth beyond
> >a few feet?
>
> Losses are about 10 dB/m at 100 kHz.
>
> Paul
>

The U.S. uses VLH to "communicate with submerged submarines on at
frequencies of 3-30 kHz" (http://www.fas.org/nuke/guide/usa/c3i/vlf.htm).
The data rate is 50 baud but it must work - there are Trident ballistic
missile subs waiting for launch orders on the receiving end.
The depth and receiver characteristics are likely classified.

782. Re: Designing a directional coupler for 2m & 70cm

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 18:32:05 UTC
From: Wim Ton <wimton@blueyonder.co.uk>
Message-ID: <GqxSb.4034$Q63.3239@news-binary.blueyonder.co.uk>
Source record: 29069

> I'm looking for documentation explaning how to design and built
directional
> couplers for 2m and 70 cm application.
>
This site has a design program

http://www.ee.bilkent.edu.tr/~microwave/programs/magnetic/dcoupler/dcoupler.
htm

Wim

783. Re: Designing a directional coupler for 2m & 70cm

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 18:48:20 UTC
From: k7itm@aol.com
Message-ID: <3200347.0401301048.54c6670d@posting.google.com>
Source record: 29070

Hi Stï¿½phane,

Just so you don't confuse people you talk with, "stripline" is a line
sandwiched between two ground planes (could be air dielectric or
circuit board dielectric), but if it's a PC board with ground plane on
one side and a trace on the other, that's "microstrip."

I think 1.6mm thick fiberglass epoxy, with a 50 ohm microstrip line on
it at about 3mm line width, will handle 100 W at 450MHz just fine.

You can make a stripline or microstrip coupler that's shorter than 1/4
wave, and it should still have good directionality. It just won't
have as much coupling as it does at 1/4 wave. The coupling at 1/4,
3/4, 5/4, etc., is all the same, and there are nulls at DC, 1/2 wave,
2/2, 3/3, etc. The maxima are rather broad, rounded, and not sharp
peaks. I think I found a plot of the response on the web recently,
but perhaps I made it from formulas.

If you don't get it somewhere else, I can scan and send the ARRL
article on making an SWR meter using copper pipe fittings. I suppose
they are US-standard fittings, but there should be reasonable
equivalents in the civilized metric world.

Cheers,
Tom

"Stï¿½phane Rey" <sre_prolem@yahoo.com> wrote in message
news:<401a3809$1@news.deckpoint.ch>...
> Hey Tom,
>
> Thanks a lot, I'm going to download this software and have a look. My mind
> was the power should be limited very low with PCB striplines, and I would
> like to design something up to about 100W.
>
> Stephane
>
> "Tom Bruhns" <k7itm@aol.com> wrote in message
> news:3200347.0401291149.459e55da@posting.google.com...
> > I'm not sure what's in current versions of the ARRL VHF/UHF manual,
> > but I know that older ones have articles on building SWR bridges. You
> > can just delete the detectors if you want to use them as directional
> > couplers. Also, you can download "RFSim99" for free, and you will
> > find in it a little design ap for directional couplers, in microstrip,
> > stripline, transformer-type, lumped and transmission line. The ap is
> > under "tools-->components-->coupler" in the pulldown menus. Note that
> > the microstrip and stripline assume the coupler is 1/4 wave long for

> > the given coupling--something the ap fails to point out.
> > Interestingly, 1/4 wave couplers (microstrip or stripline or the like)
> > give the same coupling at 3/4 wave...in other words, at the third
> > harmonic, which is useful for 146MHz and 440MHz. This is not true of
> > the lumped. The transformer style depends on the bandwidth of the
> > transformers.
> >
> > Cheers,
> > Tom
> >
> >
> > "Sti¿½phane Rey" <sre_prolem@yahoo.com> wrote in message
> news:<4018ce28$1@news.deckpoint.ch>...
> > > Hello,
> > >
> > > I'm looking for documentation explaning how to design and built
> directional
> > > couplers for 2m and 70 cm application.
> > >
> > > I've found a lot of links for the theory but nothing explaning how to
> > > compute the parameters and built it .
> > >
> > > Any suggestion appreciated
> > >
> > > Thanks
> > > Stephane, F1TJJ

784. Re: EMI-RFI Banned for sale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 19:31:30 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <401AB108.3AFFA845@earthlink.net>
Source record: 29071

FAZAMY wrote:
>
> Tnx Eddie for the tip. I called and ordered from your source.
>
> To all the guys who were paising Google:
> 1. A search for conductive spray paint yields maybe 100k entries.
> 2. Overwhelmingly, conductive spray paint is an industrial/commercial product
> that has thousands of producers who sell and give info to industry types, not a
> consumer like me. (I learned a lot about the nature of this international
> industry.)
> 3. Those agents from these companies I reached on the landline were helpful,
> but yielded nothing for me.
> 4. My last resort was this GREAT newsgroup who I knew would come thru for me.
>
> Thanks to all.
> 73, de KB2AMY

If you had already searched with Google, or other search engines, it
should have been stated in the original message. Incomplete requests for
help just make it harder to help anyone.

There are other resources, like the EEM or Tomcat online databases of
products and manufacturers. Still it helps to know what someone has done
other than wring their hands and cry for help.

--
We now return you to our normally scheduled programming.

Michael A. Terrell
Central Florida

785. Re: Submariners, Loran C question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 20:01:38 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <bvedaakre1@newshost.mot.com>
Source record: 29078

So that's the freq! For the life of me, I got zillions of hits, but none talked about the frequency. I only remember the old 1.8 MHz. (or whatever) Loran system.

--
Steve N, K,9;d, c. i My email has no u's.

"gudmundur" <hexter@blazenet.net> wrote in message news:101jeuv4c3krla9@corp.supernews.com...
> Is the 100khz Loran C signal useable while submerged? Do to it's
> long wave nature, does it penetrate the surface to any depth beyond
> a few feet?
>

786. Re: Designing a directional coupler for 2m & 70cm

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 22:24:28 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <101lmcjmudqio53@corp.supernews.com>
Source record: 29072

I don't have a scanner, so if you help St&#65533;phane here he'll get something
useful.

"Tom Bruhns" <k7itm@aol.com> wrote in message
news:3200347.0401301048.54c6670d@posting.google.com...
> Hi St&#65533;phane,
>
> Just so you don't confuse people you talk with, "stripline" is a line
> sandwiched between two ground planes (could be air dielectric or
> circuit board dielectric), but if it's a PC board with ground plane on
> one side and a trace on the other, that's "microstrip."
>
> I think 1.6mm thick fiberglass epoxy, with a 50 ohm microstrip line on
> it at about 3mm line width, will handle 100 W at 450MHz just fine.
>
> You can make a stripline or microstrip coupler that's shorter than 1/4
> wave, and it should still have good directionality. It just won't
> have as much coupling as it does at 1/4 wave. The coupling at 1/4,
> 3/4, 5/4, etc., is all the same, and there are nulls at DC, 1/2 wave,
> 2/2, 3/3, etc. The maxima are rather broad, rounded, and not sharp
> peaks. I think I found a plot of the response on the web recently,
> but perhaps I made it from formulas.
>
> If you don't get it somewhere else, I can scan and send the ARRL
> article on making an SWR meter using copper pipe fittings. I suppose
> they are US-standard fittings, but there should be reasonable
> equivalents in the civilized metric world.
>
> Cheers,
> Tom
>
>

787. Who had info on F-150 TSBs???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-30 23:16:19 UTC
From: Scott <acepilot@bloomer.net>
Message-ID: <MxBSb.2841$tU6.4256@reggie.win.bright.net>
Source record: 29073

Had a major computer crash here last week. Somebody responded to my plea for help concerning noise in an F-150 that is killing my FT-857's HF ability. I lost everything since I had to reformat the hard drive and start over again.

Someone pointed me to a website that had a Technical Service Bulletin for fuel pump RFI. I'd like to get that again to print out. It doesn't appear that it (fuel pump) is an issue in my truck, but if there is a TSB for the noise, I'd like to make them do it under warranty. All I got today was "Good Luck!" from the Ford dealer. I took a book on RFI to show them possible causes and the guy kept saying the 2003 doesn't have spark plug wires so that can't be the source. Then I said it has a coil and they said, nope, each spark plug has its own coil attached right to the top of the plug. I concur, but there is a coil (in fact, 8 of them) and as long as there is, it must be generating high voltage to fire the plug, therefore, there is a primary circuit that tells the coil to fire. My contention is that any RFI generated by the spark plugs could be radiated back out of the coil through the primary circuit. The tech disagreed by stating that there is no primary circuit, that the coils are controlled by the computer directly. Duh. There is a wire connected from the coils to the computer. Sounds like an antenna to me. First thing they said was that my (cheap) radio doesn't have enough filtering on the DC power line. Bullshit! When the truck is off, it's quiet as a mouse. Start the truck and the noise starts. Popping goes up and down with engine speed. Noise blanker helps cut noise from S9 to S3, but I want better than that! If I disconnect the antenna from the radio with the truck running, noise goes to zero. So, you tell me that the noise is coming in through the DC power leads.

I asked if there was anybody I could contact direct at Ford...Nope. I guess Ford has no employees or engineers in Detroit. Model company...no wonder they can give away trucks...NO OVERHEAD!! Ya, right...

Pissed in Wisconsin,

Scott N0EDV

--
Scott
http://corbenflyer.tripod.com/
Building RV-4
Gotta Fly or Gonna Die

788. 30 meter beacon run this weekend

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-31 01:45:33 UTC
From: Tom Sevart <n2uhc@yahoo.nospam.com>
Message-ID: <bveptk$qbini$1@ID-52518.news.uni-berlin.de>
Source record: 29074

Hi all,

I'll be operating my 30 meter 100 mW CW beacon this weekend. The frequency will be 10.146 MHZ. Operating time will be on Saturday from early morning to about 2300Z. On Sunday from early morning to around 0300Z.

Details on the beacon are located at http://www.geocities.com/n2uhc_2/30m_bcn.html . Please send a reception report to me at n2uhc@yahoo.com. Please include your QTH, time you heard it, and how well you heard it. I'll respond with a QSL via email, or if you would like a paper copy please request one & include your address.

The antenna is a 30 meter dipole set up in an inverted-V style, with legs pointing N-S.

Thanks.

--
Tom Sevart N2UHC
Frontenac, KS
http://www.geocities.com/n2uhc

789. Re: Submariners, Loran C question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-31 02:17:16 UTC
From: bg998@FreeNet.Carleton.CA
Message-ID: <bvf37c$i15$1@freenet9.carleton.ca>
Source record: 29075

"J. Michael Milner" (jmmilner@att.not) writes:
> "Paul Keinanen" <keinanen@sci.fi> wrote in message
> news:pu0k105jv4saovau279b071gofpocl4gkc@4ax.com...
>> On Fri, 30 Jan 2004 02:05:19 -0000, hexter@blazenet.net (gudmundur)
>> wrote:
>>
>> > Is the 100khz Loran C signal useable while submerged? Do to it's
>> >long wave nature, does it penetrate the surface to any depth beyond
>> >a few feet?
>>
>> Losses are about 10 dB/m at 100 kHz.
>>
>> Paul
>>
>
> The U.S. uses VLH to "communicate with submerged submarines on at
> frequencies of 3-30 kHz" (http://www.fas.org/nuke/guide/usa/c3i/vlf.htm).
> The data rate is 50 baud but it must work - there are Trident ballistic
> missile subs waiting for launch orders on the receiving end.
> The depth and receiver characteristics are likely classified.
>
>
Depth of the boat doesn't matter. The antenna floats near the surface.

790. Re: Who had info on F-150 TSBs???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-31 04:17:54 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <401B2C64.31ABD1DE@earthlink.net>
Source record: 29076

Scott wrote:
>
> Had a major computer crash here last week. Somebody responded to my plea
> for help concerning noise in an F-150 that is killing my FT-857's HF
> ability. I lost everything since I had to reformat the hard drive and start
> over again.
>
> Someone pointed me to a website that had a Technical Service Bulletin for
> fuel pump RFI. I'd like to get that again to print out. It doesn't appear
> that it (fuel pump) is an issue in my truck, but if there is a TSB for the
> noise, I'd like to make them do it under warranty. All I got today was
> "Good Luck!" from the Ford dealer. I took a book on RFI to show them
> possible causes and the guy kept saying the 2003 doesn't have spark plug
> wires so that can't be the source. Then I said it has a coil and they said,
> nope, each spark plug has its own coil attached right to the top of the
> plug. I concur, but there is a coil (in fact, 8 of them) and as long as
> there is, it must be generating high voltage to fire the plug, therefore,
> there is a primary circuit that tells the coil to fire. My contention is
> that any RFI generated by the spark plugs could be radiated back out of the
> coil through the primary circuit. The tech disagreed by stating that there
> is no primary circuit, that the coils are controlled by the computer
> directly. Duh. There is a wire connected from the coils to the computer.
> Sounds like an antenna to me. First thing they said was that my (cheap)
> radio doesn't have enough filtering on the DC power line. Bullshit! When
> the truck is off, it's quiet as a mouse. Start the truck and the noise
> starts. Popping goes up and down with engine speed. Noise blanker helps
> cut noise from S9 to S3, but I want better than that! If I disconnect the
> antenna from the radio with the truck running, noise goes to zero. So, you
> tell me that the noise is coming in through the DC power leads.
>
> I asked if there was anybody I could contact direct at Ford...Nope. I guess
> Ford has no employees or engineers in Detroit. Model company...no wonder
> they can give away trucks...NO OVERHEAD!! Ya, right...
>
> Pissed in Wisconsin,
>
> Scott N0EDV
>
> --
> Scott
> http://corbenflyer.tripod.com/
> Building RV-4
> Gotta Fly or Gonna Die

You can check the Google archive for this newsgroup at:
http://groups.google.com/groups?hl=en&lr=&ie=UTF-8&group=rec.radio.amateur.homebrew

--
We now return you to our normally scheduled programming.

Michael A. Terrell
Central Florida

791. Re: 2m Amplifier Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-31 06:42:06 UTC
From: Jimbo <jimbo@nospam.com>
Message-ID: <401B4E3C.B8A4501F@nospam.com>
Source record: 29077

Hi Wes,

Not sure why it posted three times, wn has been having some trouble this
week.

Anyway, not everyone checks into usenet as often as regular email, so just a
courtesy
to reply to the group and individual. NOT SPAM.

The original post inquired about vhf amplifier designs on the net, I replied
with one link.
You provided several links too. Good.

If I should walk away a little smarter from something you or anyone else
posted that is a good
thing and nothing I should be embarrassed by.

Have a nice day.

jimbo

Wes Stewart wrote:

> I'll only respond to this once instead of three times.
>
> Why would anyone send a private email to someone and not include a
> valid return email address? Selecting "reply" and typing a nice
> return message seemed like a logical thing to do. I didn't ever
> suppose that the idiot sending the message was just sending spam. Now
> I know better.
>
> I was just trying to save you the embarrassment of further public
> ridicule.
>
> Alas, I failed.
>
> On Fri, 30 Jan 2004 06:44:35 GMT, jimbo
> <jimbo@don't_try_this_at_home.com> wrote:
>
> |hello Wes,
> |
> |I will admit this is over my head if you'll admit trying to reply to
> |a .nospam.com email address is over your head !
> |
> |lol,
> |
> |share your info with all on usenet that is what it is for !

> |
> |regards,
> |
> |jimbo
> |
> |Wes wrote:
> |
> |> On Wed, 28 Jan 2004 02:08:07 GMT, jimbo <jimbo@nospam.com> wrote:
> |>
> |> |http://www.communication-concepts.com/hf_amplifiers.htm
> |> |
> |> |Am I missing something here ???
> |>
> |> Yes and I tried to respond to your email message but your spoofed your
> |> return address, so forget about it. If it's over your head, so be it.

792. Re: 30 meter beacon run this weekend

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-31 11:36:23 UTC
From: Tom Sevart <n2uhc@yahoo.nospam.com>
Message-ID: <bvfsh8$rvq4u$1@ID-52518.news.uni-berlin.de>
Source record: 29079
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.shortwave

My 30 meter 100 mW beacon is running now on 10.146 MHZ. Antenna is a 30 meter inverted V. The beacon will be running until 1900Z tonight, then all day tomorrow until about 0300Z.

Please send reception reports to n2uhc@yahoo.com, please include UTC time you hear it and your location. Results to be posted later.

--
Tom Sevart N2UHC
Frontenac, KS
http://www.geocities.com/n2uhc

793. Re: 1SS99

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-31 12:47:25 UTC
From: matrix <argh@nomail.it>
Message-ID: <VtNSb.1870$HO2.1864@news.edisontel.com>
Source record: 29080

"Joe McElvenney" <ximac@btinternet.com> ha scritto nel messaggio
news:VA.0000002b.00141d65@btinternet.com...
> Hi,
>
> The 1SS99 Schottky is listed here at Euro 2.50.
>
> http://www.xs4all.nl/~barendh/Indexeng.htm
>
>
> 73 de Joe, G3LLV
>
tnx

794. WTD: ATV 70 cm

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-31 16:44:27 UTC
From: FM SWL <okiemansc@yahoo.com>
Message-ID: <LXQSb.4714$F23.4048@newsread2.news.pas.earthlink.net>
Source record: 29081
Cross-posted to:
alt.ham-radio.vhf-uhf,rec.ham-radio.swap,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

I am interested in 440 mHz. ATV. Would like to buy transmitter,downconverter especially.Projects OK. Tell me what you have and what you want for it.Not looking to spend a fortune can buy it new if I want to go that way.
THANKS !!

795. Re: 2m homebrew antenna advice???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-31 17:35:28 UTC
From: Bill Oakes <wjo13@yahoo.com>
Message-ID: <xHRSb.38664$OA3.12667739@newsfep2-win.server.ntli.net>
Source record: 29082

I used to use a 'slim jim' (2mtr version) for Marine VHF as well as 2mts,
worked very well indeed.

Make a 300ohm ribbon cable version and encapsulated in plastic pipe.

Can send you some building instructions if you don't have them already.

73 de Bill

" Tuuk" <bangkokbob5001@yahoo.com> wrote in message
news:2EvSb.781$SY3.153937@read2.cgocable.net...
> Hi, I am putting together a 2m and also an antenna for marine use,
156megs.
>
> Can anyone here please give me some advice on which of these two I am
going
> to use? Has anyone here had good luck or horror stories, easily tuned or
> matched?
> I have attached a photo of the 2m co-linear style, looks easy to build,
and
> the copper J-Pole style. Can I please hear some advice, input, suggestions
> from those who have had the pleasure of building one of these?
> Thanks in advance,
> Bob
>
>
>

796. Parts or broken rigs wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-31 17:50:07 UTC
From: Bob <balbert@access1.net>
Message-ID: <Z4-dnYkj6LLzcYbdRVn2sQ@ecrii.com>
Source record: 29083
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.swap,rec.radio.swap,sci.electronics.repair

I love fixing stuff. Am seeking radios or other gear to repair or to help repair other radios.

Let me know what you have, what's wrong with it, and how much you'd like to get for it.

This is not a profit making venture; it's just a facet of the hobby that I enjoy.

73, Bob K6DDX

797. Re: EMI-RFI Banned for sale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-31 18:24:06 UTC
From: fazamy@aol.com
Message-ID: <20040131132406.20033.00001227@mb-m17.aol.com>
Source record: 29084

> If you had already searched with Google, or other search engines, it
>should have been stated in the original message. Incomplete requests for
>help just make it harder to help anyone.
>
> There are other resources, like the EEM or Tomcat online databases of
>products and manufacturers. Still it helps to know what someone has done
>other than wring their hands and cry for help.
>
>--
>We now return you to our normally scheduled programming.
>

Tnx Michael for your suggestion. It was an oversight on my part about not mentioning prior searches on Google.

Secondly, I was seeking out help on this newsgroup. It is a great source because of the wealth of info and experience held by its subscribers. I was not wringing my hands in despair as you imply. I use this newsgroup as a fountain of hope. It is unwise to judge the emotional/psychological state of the sender from cold text.

See ya!
KB2AMY

798. Re: Parts or broken rigs wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-31 18:49:57 UTC
From: Wayne Tiffany <wayne.tiffany@asi.com>
Message-ID: <bvgtcm$s6ner$1@ID-201804.news.uni-berlin.de>
Source record: 29085
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.swap,rec.radio.swap,sci.electronics.repair

Where are you - that would make a difference in what stuff is worth going to get.

WT

"Bob" <balbert@access1.net> wrote in message news:Z4-dnYkj6LLzcYbdRVn2sQ@ecrii.com...
> I love fixing stuff. Am seeking radios or other gear to repair or to help
> repair other radios.
>
> Let me know what you have, what's wrong with it, and how much you'd like to
> get for it.
>
> This is not a profit making venture; it's just a facet of the hobby that I
> enjoy.
>
> 73, Bob K6DDX
>
>

799. Re: Parts or broken rigs wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-31 19:04:06 UTC
From: Bob <balbert@access1.net>
Message-ID: <iYKdnZmSybzKYYbdRVn2sQ@ecrii.com>
Source record: 29086
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.swap,rec.radio.swap,sci.electronics.repair

I am in the Los Angeles area.

73, Bob

800. bird dummy load construction..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-31 19:16:08 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1075576573.501877@smtp-1.griffin.com>
Source record: 29087

well looking at a Bird 500w continious load, and it appears to me to be a horizontal ali tube..with lots of cooling fins prssed on..is this tube oil filled? if so pressure release valve???

asking as i want to make a load that out preforms my heathkit cantenna..(in load capability) and am wondering if i can make a copy...

simon g0zen

801. Re: Parts or broken rigs wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-31 19:53:49 UTC
From: James Sweet <jamessweet@hotmail.com>
Message-ID: <hJTSb.199253$na.331207@attbi_s04>
Source record: 29088
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.swap,rec.radio.swap,sci.electronics.repair

"Bob" <balbert@access1.net> wrote in message
news:iYKdnZmSybzKYYbdRVn2sQ@ecrii.com...
> I am in the Los Angeles area.
>
> 73, Bob
>
>

Dang, I have a couple monitors you can have if you're ever near Seattle.

802. Re: Who had info on F-150 TSBs???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-31 20:07:48 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <ca2m10piqrv1264q41nhr2kfv3ou4745iu@4ax.com>
Source record: 29089

On Fri, 30 Jan 2004 23:16:19 -0000 "Scott" <acepilot@bloomer.net>
wrote:

>If I disconnect the
>antenna from the radio with the truck running, noise goes to zero. So, you
>tell me that the noise is coming in through the DC power leads.

Disconnect the antenna wire and verify that it's shield is still well
grounded. The antenna end of the antenna wire must be well grounded to
the body AT THE ANTENNA end to minimize noise pickup.

Lots of times this connection is poor, either because of corrosion or
paint between the antenna body and the car body, or corrosion between
the antenna body and the coaxial shield. Either way it's a major
source of noise pickup.

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA
---

803. Re: Designing a directional coupler for 2m & 70cm

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-31 21:26:23 UTC
From: k7itm@aol.com
Message-ID: <3200347.0401311326.400fd89c@posting.google.com>
Source record: 29090

OK...Stï¿½phane, would a scan of a couple articles still be helpful?

I found the ARRL one last night, and also a similar but somewhat
better one in the old RSGB/Jessop VHF/UHF manual. Guess I can scan
both.

And thank to Wim for the reference. It's one I'd seen before but had
lost the link to, and appreciate having it again.

Cheers,
Tom

"Tim Wescott" <tim@wescottnospamdesign.com> wrote in message
news:<101lmcjmudqio53@corp.supernews.com>...
> I don't have a scanner, so if you help Stï¿½phane here he'll get something
> useful.
>
> "Tom Bruhns" <k7itm@aol.com> wrote in message
> news:3200347.0401301048.54c6670d@posting.google.com...
...
> > If you don't get it somewhere else, I can scan and send the ARRL
> > article on making an SWR meter using copper pipe fittings. I suppose
> > they are US-standard fittings, but there should be reasonable
> > equivalents in the civilized metric world.

804. Re: Parts or broken rigs wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-01-31 23:31:17 UTC
From: Sofie <sofie@olypen.com>
Message-ID: <101oerl7r5ru51e@corp.supernews.com>
Source record: 29091
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.swap,rec.radio.swap,sci.electronics.repair

Bob,
Take a trip to some of your local repair shops......
I know that at my shop that about once a month or two that I am filling up a pick up truck full of old and newer VCRs, DVDs, televisions, stereo equipment, CD players, CB radios, etc.and taking it all to the dump...... otherwise I wouldn't be able to walk around inside the shop.
I am in the Seattle area so it would not be worth the shipping costs.
--
Best Regards,
Daniel Sofie
Electronics Supply & Repair

"Bob" <balbert@access1.net> wrote in message news:Z4-dnYkj6LLzcYbdRVn2sQ@ecrii.com...
> I love fixing stuff. Am seeking radios or other gear to repair or to help
> repair other radios.
>
> Let me know what you have, what's wrong with it, and how much you'd like to
> get for it.
>
> This is not a profit making venture; it's just a facet of the hobby that I
> enjoy.
>
> 73, Bob K6DDX
>
>

805. Re: Parts or broken rigs wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 00:35:52 UTC
From: James Sweet <jamessweet@hotmail.com>
Message-ID: <IRXSb.194339$I06.2145383@attbi_s01>
Source record: 29092
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.swap,rec.radio.swap,sci.electronics.repair

"Sofie" <sofie@olypen.com> wrote in message
news:101oerl7r5ru51e@corp.supernews.com...
> Bob,
> Take a trip to some of your local repair shops......
> I know that at my shop that about once a month or two that I am filling up
a
> pick up truck full of old and newer VCRs, DVDs, televisions, stereo
> equipment, CD players, CB radios, etc.and taking it all to the dump......
> otherwise I wouldn't be able to walk around inside the shop.
> I am in the Seattle area so it would not be worth the shipping costs.
> --
> Best Regards,
> Daniel Sofie
> Electronics Supply & Repair
> ---------------------------

You're in Seattle too? I might be willing to take a load of some fixable stuff at some point, however I have the same problem at home. Hate to throw anything away, but don't have space/time to fix everything.

806. Re: Submariners, Loran C question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 01:33:02 UTC
From: hexter@blazenet.net
Message-ID: <101olqebo9q6i45@corp.supernews.com>
Source record: 29093

In article <bvedaakre1@newshost.mot.com>, suteuve.nosukowicuz@moutouroula.com says...
>
>So that's the freq! For the life of me, I got zillions of hits, but none
>talked about the frequency. I only remember the old 1.8 MHz. (or whatever)
>Loran system.
>
>--
>Steve N, K,9;d, c. i My email has no u's.
>

Hey there Steve, and the group,

If you want some good reading on the operation of the 100khz Loran-C, download the manual for the rayplot 700L from Raymarine.com They cover the 'How it works' department real well. No schematics however. I have a small battery operated scuba tow unit good for bay, or lake use. It has no compass due to the very large motor magnets. I was thinking of building my small portable Loran-C receiver into a waterproof box, and towing an insulated antenna wire of perhaps 10 feet length behind me. But I was unsure how deep I could dive, and still have a useable signal. I have a 700L for land use in my mobile. It works great!

>"gudmundur" <hexter@blazenet.net> wrote in message
>news:101jeuv4c3krla9@corp.supernews.com...
>> Is the 100khz Loran C signal useable while submerged? Do to it's
>> long wave nature, does it penetrate the surface to any depth beyond
>> a few feet?
>>
>
>

807. Re: simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 03:34:19 UTC
From: Y <zapary@hotmail.com>
Message-ID: <401C73BA.D2DDDC86@hotmail.com>
Source record: 29094

A regenerative synchronous detector can be built using a MC1330. A secondary coil is wound over the limiter coil and connected between the limiter output pin and ground through an emitter resistor. A .1 mfd capacitor is connected across the resistor. The secondary coil must be coupled and phased so that oscillation is possible. The MC1330 will lock to the incoming carrier. Coupling the secondary coil to the limiter coil is critical and requires experimentation. Jos! VE2 AUC

Michael Black wrote:

> Pete Beals (Pbeals@noaddress.com) writes:
> > I like to try the quasi sync circuit with a limiter and product detector on
> > AM band. Will this work with a TRF receiver?
> > This probably won't work with weak signals but has anyone tried this?
> >
> An obvious point about using it as a TRF is how much selectivity will
> you be putting at the front end?
>
> Any time you are using a mixer to convert down to audio (as with SSB
> or synchronous detection of some kind for AM), you can get selectivity
> at audio, since it's a frequency translation.
>
> But, if you've just got a limiter open to the world, at the very least
> it's going to limit on the strongest local signal. If you don't have
> enough front end selectivity, I would think you would get relatively
> little tuning ability. The strongest signal will "capture" the limiter,
> and that will be the "carrier" that beats against the incoming signal
> in the mixer.
>
> When people made synchronous receivers out of the old Signetics analog
> PLL ICs, at least the PLL had a lock range that provided "selectivity".
> so they could run with little or no front end selectivity. Except for
> mixer overload, what you got out of the mixer was limited by the audio
> circuitry and your hearing, since only one frequency (plus the image)
> could convert down to say 0 to 3KHz from the oscilaltor frequency. The same
> applies to direct conversion CW/SSB receivers.
>
> A quasi-synchronous receiver will work the same way, in that the output
> of the mixer will be within the audio range from the "carrier" out of
> the limiter. But if you have no selectivity on the input to the mixer,
> enough to separate out signals, then the strongest signal into the
> limiter will prevail.
>
> Much of what I've seen about "quasi-synchronous" detectors have placed
> them in the IF of a superheterodyne receiver, where the IF bandwidth
> ensures that it only reacts to the wanted signal. The only TRF that

> I can think of seeing was in an old Technical Topics book from the RSGB,
> where there was an MC1330 (which is a quasi-synchronous detector, for
> TV use, though I believe the datasheet simply calls it synchronous)
> as the detector, but there was an stage of amplification (I think
> an MC1350P) ahead of it, with a couple of stages of tuned circuits.
> With a quasi, you do indeed need some TRF before the detector.
>
> Michael VE2BVW

808. Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 04:46:26 UTC
From: Paul Clay <mrvansk@yahoo.com>
Message-ID: <401C84A2.D6A0ECBE@yahoo.com>
Source record: 29095

What's the best way/tool to cut or drill holes 1/8 inch to 5/16 inch in diameter in thin gauge aluminum (for inserting potentiometers and phono, power jacks, etc.)? I've tried using just a power drill and genernal purpose drill bits and the results have been sort of ragged (the edges of the hole are ragged and the process of drilling creates a depression surrounding the drilled hole).

What's a good technique for labeling front panel controls on a piece of homebrew gear? Are there self adhesive labels or decals that stick/wear really well?

Tnx!

809. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 05:46:17 UTC
From: JOE <JHARMON@hotmail.com>
Message-ID: <bvi45g$s1ke1$1@ID-133475.news.uni-berlin.de>
Source record: 29096

"Paul Clay" <mrvansk@yahoo.com> wrote in message
news:401C84A2.D6A0ECBE@yahoo.com...
> What's the best way/tool to cut or drill holes 1/8 inch to 5/16 inch in
> diameter in thin gauge aluminum (for inserting potentiometers and
> phono, power jacks, etc.)? I've tried using just a power drill and
> genernal purpose drill bits and the results have been sort of ragged
> (the edges of the hole are ragged and the process of drilling creates a
> depression surrounding the drilled hole).

Buy a good set of Greenlee punches - they'll cost a bundle but
there's no other good way to do it.

> What's a good technique for labeling front panel controls on a piece of
> homebrew gear? Are there self adhesive labels or decals that
> stick/wear really well?

Go to a trophy shop and buy engraved phenolic plaque labels. They'll
cost ya about $2 each but look GOOD.

JOE

810. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 07:22:49 UTC
From: donutbandit <none@none.com>
Message-ID: <bvi9g9cle2@news.snowcrest.net>
Source record: 28997

Paul Clay <mrvansk@yahoo.com> wrote in news:401C84A2.D6A0ECBE@yahoo.com:

> What's the best way/tool to cut or drill holes 1/8 inch to 5/16 inch in
> diameter in thin gauge aluminum (for inserting potentiometers and
> phono, power jacks, etc.)? I've tried using just a power drill and
> genernal purpose drill bits and the results have been sort of ragged
> (the edges of the hole are ragged and the process of drilling creates a
> depression surrounding the drilled hole).

Get yourself a step bit. You just drill the starter hole, and then drill
with the step bit until you have the size hole you want. Much cheaper than
punches.

811. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 08:02:34 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <401cb29a$0$10057$cc9e4d1f@news.dial.pipex.com>
Source record: 28998

Paul Clay wrote:

> What's the best way/tool to cut or drill holes 1/8 inch to 5/16 inch in
> diameter in thin gauge aluminum (for inserting potentiometers and
> phono, power jacks, etc.)? I've tried using just a power drill and
> genernal purpose drill bits and the results have been sort of ragged
> (the edges of the hole are ragged and the process of drilling creates a
> depression surrounding the drilled hole).

I use a tapered drill, it produces a very neat hole.

>
> What's a good technique for labeling front panel controls on a piece of
> homebrew gear? Are there self adhesive labels or decals that
> stick/wear really well?

Print them on a sheet of paper, put that on the panel and cover it with
a sheet of plastic. You'll have to make holes for the controls, etc.

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

812. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 08:05:46 UTC
From: Tfort <beerbarrelspam@cox.net>
Message-ID: <cocp10ds7sj3qhda4g58ntu02cf0cbdq05@4ax.com>
Source record: 28999

On Sat, 31 Jan 2004 20:46:26 -0800, Paul Clay <mrvansk@yahoo.com>
wrote:

>What's the best way/tool to cut or drill holes 1/8 inch to 5/16 inch in
>diameter in thin gauge aluminum (for inserting potentiometers and
>phono, power jacks, etc.)? I've tried using just a power drill and
>genernal purpose drill bits and the results have been sort of ragged
>(the edges of the hole are ragged and the process of drilling creates a
>depression surrounding the drilled hole).
>
>What's a good technique for labeling front panel controls on a piece of
>homebrew gear? Are there self adhesive labels or decals that
>stick/wear really well?
>
>Tnx!

Get a laser etcher and greenlee punches.....I'm think of labeling
panels for people. Something like 1 dollar a word.

Tracy

813. Re: Parts or broken rigs wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 08:34:46 UTC
From: eddumweer <eddumnogsteeds@hotmail.com>
Message-ID: <bvidn9$9dp$1@news3.tilbu1.nb.home.nl>
Source record: 29000
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.swap,rec.radio.swap,sci.electronics.repair

"James Sweet" <jamessweet@hotmail.com> schreef in bericht
news:IRXSb.194339$I06.2145383@attbi_s01...
>
> "Sofie" <sofie@olypen.com> wrote in message
> news:101oerl7r5ru51e@corp.supernews.com...
> > Bob,
> > Take a trip to some of your local repair shops......
> > I know that at my shop that about once a month or two that I am filling
up
> a
> > pick up truck full of old and newer VCRs, DVDs, televisions, stereo
> > equipment, CD players, CB radios, etc.and taking it all to the
dump......
> > otherwise I wouldn't be able to walk around inside the shop.
> > I am in the Seattle area so it would not be worth the shipping costs.
> > --
> > Best Regards,
> > Daniel Sofie
> > Electronics Supply & Repair
> > --------------------------
>
> You're in Seattle too? I might be willing to take a load of some fixable
> stuff at some point, however I have the same problem at home. Hate to
throw
> anything away, but don't have space/time to fix everything.
>
>

And to leave it to repair it with another set, mostly it's always the same
piece which is stuck.
So also here in The Netherlands, put it in the car and bring it to a guy who
always says, the people throw the money on the street, see what beatuful
expensive part are inside, I can use it later, even his house can't collapse
due to his "stock" hihihi.

Greetings Peter

814. Re: Submariners, Loran C question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 08:52:42 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <l7bp109kecm5ckjoof979k3o44ie36vj5l@4ax.com>
Source record: 29001

On Sun, 01 Feb 2004 01:33:02 -0000, hexter@blazenet.net (gudmundur)
wrote:

>I was thinking of building
>my small portable Loran-C receiver into a waterproof box, and towing an
>insulated antenna wire of perhaps 10 feet length behind me.

You should include a low noise preamplifier in front of the receiver.
Due to the very high atmospheric noise levels on LF and MF bands, the
sensitivity for a typical receiver is very low (especially if a
ferrite rod antenna is used).

Below the surface, both the level of the wanted signal as well as the
atmospheric noise level will drop rapidly and sooner or later the
signal will be swamped by the receiver internal noise (high F figure).
A low noise preamplifier between the antenna and the receiver will
allow a weaker signal to be detected before being swamped by the
preamplifier internal noise when going deeper.

However, if the preamplifier is used close to the surface, it most
likely will overload the receiver, so a pressure switch should switch
out the preamplifier when you are (say less than 3-5 m from the
surface) on include the preamplifier into the receiver AGC loop.

Paul

815. Making PCBs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 10:54:21 UTC
From: Dick <dick@langwang.demon.co.uk>
Message-ID: <S9AcnnCdrNHAFwzr@langwang.demon.co.uk>
Source record: 29012

Thanks to the group for all the past advice given on PCB
drafting software & UV exposure boxes, it's all being put to good use.

In the past I've used ferric chloride professionally as my
etchant (and left disposal of the etching solution to the work's
chemist) but now I'm doing things for myself safe disposal is going to
be my problem, searching on the web for an answer ammonium and sodium
persulphate come up as a suitable alternatives but not ones I've used.
Does anyone have experience of using persulphates as a D-I-Y PCB etchant
? Are they as good as ferric chloride, are there any problems with using
them & how easy is it to dispose of the spent solution ?
--
Dick
GM0MNL

816. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 10:55:59 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <3X4Tb.153782$6y6.3005646@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29002

You can make a template of the front panel with a graphics program with hole locations, text, etc. Print them out on 8 1/2 by 11 inch label material. Cover the panel with a section of the same size plastic laminate, and you are all set.
I did a panel with this method 4 years ago, and the glue has not yet turned yellow.

Pete

"Tfort" <beerbarrelspam@cox.net> wrote in message news:cocp10ds7sj3qhda4g58ntu02cf0cbdq05@4ax.com...
> On Sat, 31 Jan 2004 20:46:26 -0800, Paul Clay <mrvansk@yahoo.com>
> wrote:
>
> >What's the best way/tool to cut or drill holes 1/8 inch to 5/16 inch in
> >diameter in thin gauge aluminum (for inserting potentiometers and
> >phono, power jacks, etc.)? I've tried using just a power drill and
> >genernal purpose drill bits and the results have been sort of ragged
> >(the edges of the hole are ragged and the process of drilling creates a
> >depression surrounding the drilled hole).
> >
> >What's a good technique for labeling front panel controls on a piece of
> >homebrew gear? Are there self adhesive labels or decals that
> >stick/wear really well?
> >
> >Tnx!
>
>
> Get a laser etcher and greenlee punches.....I'm think of labeling
> panels for people. Something like 1 dollar a word.
>
> Tracy

817. Re: Who had info on F-150 TSBs???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 10:58:45 UTC
From: Kaden <kd7qxu@arrl.net>
Message-ID: <Xns94821E810F6B9kd7qxuarrlnet@64.126.133.4>
Source record: 29003

On 30 Jan 2004, "Scott" <acepilot@bloomer.net> wrote in
news:MxBSb.2841$tU6.4256@reggie.win.bright.net:

> Had a major computer crash here last week. Somebody responded to
> my plea for help concerning noise in an F-150 that is killing my
> FT-857's HF ability. I lost everything since I had to reformat the
> hard drive and start over again.
>
> Someone pointed me to a website that had a Technical Service
> Bulletin for fuel pump RFI.

I believe this is the site you're looking for:

http://www.arrl.org/tis/info/pdf/W1MG.pdf

Unfortunately that article is dated 2002, so your vehicle wouldn't be
covered.

You may want to try the following information:

Ford Motor Co
300 Renaissance Center
PO Box 43360
Detroit, MI 48243
USA

Tel: 800-392-3673 (all makes)
800-241-3673 (towing and dealer location service)
800-232-5952 (TDD)

Also from the original thread:

> Tell the dealer to look up Ford's technical service bulletin
> TSB 93-15-6 and/or TSB 95-11-3 (I believe the latter is an updated
> version of the former). This describes the problem, identifies the
> Ford filter part which is to be installed inside the fuel tank on the
> pump wiring, and describes the procedure.

One last bit of information for you that I found online:

>> I recently installed an Icom 706 in a Ford (2002) F-150 pickup with
>> a 4.6 L. V-8. It has the Coil on Plug ignition system.
>>
>> There is very heavy ignition noise (clearly "classic" ignition noise
>> - NOT fuel-pump noise). It is s-9 on 80 and 20 mtrs - less on other
>> frequencies.
>>
>> This is my first entry into HF mobile since HW-12's in the 60's. I

>> have tried wiggling wiring, grounding the hood and other components,
>> disconnecting some cables, etc. - No luck.
>>
>> I really don't understand this coil-on-plug technology, but I have
>> been told there are no resistor-plugs and of course no resistor
>> wires.
>>
>> Any suggestions as to how to proceed would be most appreciated! I
>> have tried unplugging wiring to each plug one-at-a-time with no
>> difference noted in the interferrence level. What else could I do
>> to further diagnose the precise cause/source of the interferrence?
>>
>> Could I expect to get any help from Ford?
>>
>> My latest Mobile Handbook is from the 60's - out of date to say the
>> least. Does the latest Mobile Handbook edition have any information
>> on modern-technology ignition systems? My 2003 ARRL Handbook (the
>> "general" Handbook) has a paragraph - not at all helpful.
>>
>> All of the RFI is through the antenna - when I disconnect the
>> antenna from the mount, all RFI disappears. I can hear it on my
>> fixed station when the vehicle is in the driveway.

> I'm a happy Ford truck owner as well. They are noisey beast.
> You'll have to bond all the sheet metal to the frame rail, not just
> the hood. You'll also have to run a bonding strap from the negative
> of the battery to the frame rail. Ford make one good connection
> from the battery to the engine block but the chassic and the engine
> are both on rubber
> grommetts. Use your frame rail as your ground buss. Run bonding
> straps from the rail to all the fenders, etc. Measure the
> resistance across the door hinges. If the resistance is over 2
> ohms, install a shunt across the hindge. Bond the tail pipe to the
> frame rail at three points, the tail pipe, between the resonator
> and the muffle and between the muffle and the cataletic converter.
>
> Also, the brake sensors produce a lot of noise. Make your test
> while parked or you'll just add another noise component to the mix.
>
> Your power leads from the radio should be going directly to the
> battery.
> So, as not to void my warrantee I installed a second battery inthe
> truck bed and use it as dedicated power for the transceiver. Your
> coax from the antenna should be bonded to the frame rail as close
> to the base of the antenna as possible. Installation of an antenna
> isolator would help eliminate any common mode noise that might be
> pickedup by the coax.

Hope all this helps

73
kd7qxu

818. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 12:22:14 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <LoGdnWt2C-RifIHdRVn_iw@ctc.net>
Source record: 29004

> > What's the best way/tool to cut or drill holes 1/8 inch to 5/16 inch in
> > diameter in thin gauge aluminum (for inserting potentiometers and
> > phono, power jacks, etc.)? I've tried using just a power drill and
> > genernal purpose drill bits and the results have been sort of ragged
> > (the edges of the hole are ragged and the process of drilling creates a
> > depression surrounding the drilled hole).
>
> Buy a good set of Greenlee punches - they'll cost a bundle but
> there's no other good way to do it.
>

I don't think I have ever seen a Greenlee punch for a hole that is only 1/8 of an inch in diameter. Most of the holes for the bolts I have seen are much bigger than that.

To drill small holes you can get or grind your own bits. They will have a point on them and be something like the spade wood bits. Also take a piece of scrap wood and put behind the aluminum.

819. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 12:45:58 UTC
From: ablight@alphalink.com.au
Message-ID: <1fc7b362.0402010445.4948b66a@posting.google.com>
Source record: 29005

Paul Clay <mrvansk@yahoo.com> wrote in message news:<401C84A2.D6A0ECBE@yahoo.com>...
> What's the best way/tool to cut or drill holes 1/8 inch to 5/16 inch in
> diameter in thin gauge aluminum (for inserting potentiometers and
> phono, power jacks, etc.)? I've tried using just a power drill and
> genernal purpose drill bits and the results have been sort of ragged
> (the edges of the hole are ragged and the process of drilling creates a
> depression surrounding the drilled hole).
>
> What's a good technique for labeling front panel controls on a piece of
> homebrew gear? Are there self adhesive labels or decals that
> stick/wear really well?
>
> Tnx!

A big question, but briefly.

1.Buy sheet metal drills - might be worth it if you are only looking
at 2-3 sizes.
2.With ordinary drills, use a backing board to stop the flared effect.
Start with a small size and work up in 64ths till you get the desired
size. Tedious, but works.
3.Buy a tapered reamer, and use it to widen a say, 0.25inch hole. Ream
from both sides, needs a bit of practice. Clean up edges with a bunny
knife.

For labels:-
1.The new DYMO labelling guns are good - much better than the old
embossed plastic ones - its a thermal printing sustem, works well.
2.Do your arwork on good quality paper to size, print it out, trim to
size, stick to front panel with clear self adhesice contact film. (Its
called "contact" here in VK, may be the same there, dont know.) A bit
of stuffing around, but worth it.
3. Buy a lettering template and draw directly on the aluminium with a
say 1mm overhead projector trnasparency pen. looks ok, then spray with
clear lacqer.

Dont be too hung up on what it looks like, it can get in the way of
actually getting a project on air - and besides, the person at the
other end of the QSO wont know anyway!.

73 de VK3BFA Andrew

820. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 13:21:57 UTC
From: Eskay <sieb_kNOS@PAMyahoo.ca>
Message-ID: <jo3xzpz1n2g5$.ey0n1h8vaawr.dlg@40tude.net>
Source record: 29006

On Sat, 31 Jan 2004 20:46:26 -0800, Paul Clay wrote:

> What's the best way/tool to cut or drill holes 1/8 inch to 5/16 inch in
> diameter in thin gauge aluminum (for inserting potentiometers and
> phono, power jacks, etc.)? I've tried using just a power drill and
> genernal purpose drill bits and the results have been sort of ragged
> (the edges of the hole are ragged and the process of drilling creates a
> depression surrounding the drilled hole).
>
> What's a good technique for labeling front panel controls on a piece of
> homebrew gear? Are there self adhesive labels or decals that
> stick/wear really well?
>
> Tnx!

There is only one good and safe way to do this.
Buy a Klein Unibit drill (there are other makes too) Step tapered from
1/8 inch to 1/2 inch. They do a nice clean job and the holes are always
round.
The tapered reamer is in my opinion an antique and looks like too much hard
work. Home Depot should have the Unibit.
73 de Eskay.

821. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 13:31:47 UTC
From: "Gary S." <Idontwantspam@net>
Message-ID: <7avp10l51qeigpqb6tme5kcpckos4gab67@4ax.com>
Source record: 29007

>On Sat, 31 Jan 2004 20:46:26 -0800, Paul Clay <mrvansk@yahoo.com>
>wrote:
>
>>What's the best way/tool to cut or drill holes 1/8 inch to 5/16 inch in
>>diameter in thin gauge aluminum (for inserting potentiometers and
>>phono, power jacks, etc.)? I've tried using just a power drill and
>>genernal purpose drill bits and the results have been sort of ragged
>>(the edges of the hole are ragged and the process of drilling creates a
>>depression surrounding the drilled hole).
>>
>>What's a good technique for labeling front panel controls on a piece of
>>homebrew gear? Are there self adhesive labels or decals that
>>stick/wear really well?
>>
>>Tnx!
>
A drill press will hold the drill much more steadily for cleaner
holes. Not always available, though.

There are various things which you can attach to a hand drill to get
much of that steadiness, kind of a ring plate with two rods that the
drill rides on. You could even clamp this on to your piece to get the
equivalant of drill press accuracy.

Marking the hole with a center punch is very helpful.

You will do better with a hand drill by using a pilot hole, then up to
the actual size you want. Step drills are another way to do this, and
work quite well.

An aluminum cutting fluid will help.

When drilling, patience is important. Let the drill speed do the work,
not the drill power or downward pressure. Forcing the drill will
create the raggedness.

You will also do better with specialty sheet metal drills, rather than
general purpose. Sharper is better. The TiN coated ones will stay
sharper longer.

For square holes, a metal nibbling tool is ideal.

As for labels, there are many types of clear labels which a laser
printer will print on, the inkjet ones can smear. Artist's fixative
spray will help.

Also look at things like the Brother P-Touch label maker, especially
the ones which attach to a PC.

Happy trails,
Gary (net.yogi.bear)
---
at the 51st percentile of ursine intelligence

Gary D. Schwartz, Needham, MA, USA
Please reply to: garyDOTschwartzATpoboxDOTcom

822. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 13:40:13 UTC
From: "Gary S." <Idontwantspam@net>
Message-ID: <c20q109l85epiqbad590eaki89jod6jlo0@4ax.com>
Source record: 29008

On Sun, 1 Feb 2004 08:21:57 -0500, Eskay <sieb_kNOS@PAMyahoo.ca>
wrote:

>There is only one good and safe way to do this.
>Buy a Klein Unibit drill (there are other makes too) Step tapered from
>1/8 inch to 1/2 inch. They do a nice clean job and the holes are always
>round.

That was the name of the step drill I was thinking of. Home Depot does
in fact have them, several versions with varying sizes. They also vary
as to material thickness capability (the rise between steps).

Very nice product. About $20-25 USD each.

>The tapered reamer is in my opinion an antique and looks like too much hard
>work. Home Depot should have the Unibit.
> 73 de Eskay.

This would work, but is hacky. With thin aluminum in particular, it is
very hard to get a good looking round hole with these.

If your time is worth more than minimum wage, it is very cost
effective to buy and use the right tool for the job.

If you have friends with similar tool needs, you can extend your range
of tools by borrowing back and forth.

Happy trails,
Gary (net.yogi.bear)
---
at the 51st percentile of ursine intelligence

Gary D. Schwartz, Needham, MA, USA
Please reply to: garyDOTschwartzATpoboxDOTcom

823. Kenwood TS-700A Power Help please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 13:45:23 UTC
From: Tuuk <bangkokbob5001@yahoo.com>
Message-ID: <nw7Tb.982$_62.19@read1.cgocable.net>
Source record: 29009

Hi, I have the Kenwood TS-700A, 2m rig, I had a problem with the power cord, got bitten to pieces.
Does anyone know the proper pin requirement? Which of the four pins is to line up with the black, gnd and neutral? I am using it on 120v only but has the option for 220.
There are two horizontal pins, two vertical. Any help would be appreciated.

Thanks

824. install a99

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 15:20:55 UTC
From: Timothy Boyd <ki4cxz@tds.net>
Message-ID: <401d17fd_3@newspeer2.tds.net>
Source record: 29013

I want to install a A99 antenna I was given by a friend. I have a 50 ft tower I want to put it on. Go to QRZ.COM, lookup my call sign (KI4CXZ) and you can see my mast. I really don't want to put this antenna at the top. About 3/4 way up. Is there anything to be concerned about how far to mount it out from the base. Thanks and "73"

825. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 16:01:14 UTC
From: Al <no.spam@here.com>
Message-ID: <no.spam-56C35C.11011701022004@news.verizon.net>
Source record: 29010

In article <401C84A2.D6A0ECBE@yahoo.com>, Paul Clay <mrvansk@yahoo.com>
wrote:

> What's the best way/tool to cut or drill holes 1/8 inch to 5/16 inch in
> diameter in thin gauge aluminum (for inserting potentiometers and
> phono, power jacks, etc.)? I've tried using just a power drill and
> genernal purpose drill bits and the results have been sort of ragged
> (the edges of the hole are ragged and the process of drilling creates a
> depression surrounding the drilled hole).
>
> What's a good technique for labeling front panel controls on a piece of
> homebrew gear? Are there self adhesive labels or decals that
> stick/wear really well?
>
> Tnx!
>

Don't drill em, punch em.

Hand held squeeze punches are available everywhere. I also bought a
Greenlee 1/2 in punch; expensive, but it saved a lot of filing.

Al

--
There's never enough time to do it right the first time.......

826. Re: Submariners, Loran C question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 16:35:59 UTC
From: Bill Janssen <billjNOTTHIS@ieee.org>
Message-ID: <PV9Tb.12338$6g5.1755@news02.roc.ny>
Source record: 29011

Paul Keinanen wrote:

>On Sun, 01 Feb 2004 01:33:02 -0000, hexter@blazenet.net (gudmundur)
>wrote:
>
>
>
>>I was thinking of building
>>my small portable Loran-C receiver into a waterproof box, and towing an
>>insulated antenna wire of perhaps 10 feet length behind me.
>>
>>
>
>You should include a low noise preamplifier in front of the receiver.
>Due to the very high atmospheric noise levels on LF and MF bands, the
>sensitivity for a typical receiver is very low (especially if a
>ferrite rod antenna is used).
>
>Below the surface, both the level of the wanted signal as well as the
>atmospheric noise level will drop rapidly and sooner or later the
>signal will be swamped by the receiver internal noise (high F figure).
>A low noise preamplifier between the antenna and the receiver will
>allow a weaker signal to be detected before being swamped by the
>preamplifier internal noise when going deeper.
>
>However, if the preamplifier is used close to the surface, it most
>likely will overload the receiver, so a pressure switch should switch
>out the preamplifier when you are (say less than 3-5 m from the
>surface) on include the preamplifier into the receiver AGC loop.
>
>Paul
>
>
>
In the case of a LORAN receiver, over load is not a serious matter. The
receiver only has to decide
if a signal is there or not. The LORAN is a pulsed signal and you only
have to detect timing of the pulses.
If the receiver limits strong signals and does not lose sensitivity you
should be OK

Good luck
Bill K7NOM

827. Re: Parts or broken rigs wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 17:05:09 UTC
From: "J. Yazel" <jyazel@ai5.net>
Message-ID: <cdcq105j26bmsi3l25etmla3pb5s716j6o@4ax.com>
Source record: 29014
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.swap,rec.radio.swap,sci.electronics.repair

On Sat, 31 Jan 2004 15:31:17 -0800, "Sofie" <sofie@olypen.com> wrote:

>Bob,
>Take a trip to some of your local repair shops......
>I know that at my shop that about once a month or two that I am filling up a
>pick up truck full of old and newer VCRs, DVDs, televisions, stereo
>equipment, CD players, CB radios, etc.and taking it all to the dump......
>otherwise I wouldn't be able to walk around inside the shop.
>I am in the Seattle area so it would not be worth the shipping costs.
==========

One more responder from Seattle and I might consider moving there.

Jack

828. Salvaged Computer Power Supplies

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 17:30:10 UTC
From: Charlie <nospam@nospam.com>
Message-ID: <401d3660_3@newspeer2.tds.net>
Source record: 29015

Since I have these power supplies laying around, I can't resist asking. :)

A friend is going to buy and/or build a robotic CNC setup for his plama
torch.
A system is $5000 complete or a mainboard and software can be purchased for
$1500
or so with him supplying the motors, power supply, etc.

He says he needs 35 volt power supply with 35 amps.

So if I wire together 12 power supplys (12v, 9a), voila, 36 volts at 36
amps.

Hehe, it can't be that easy can it?

829. Re: Salvaged Computer Power Supplies

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 17:52:59 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <401D3CEC.53E165C9@earthlink.net>
Source record: 29016

Charlie wrote:
>
> Since I have these power supplies laying around, I can't resist asking. :)
>
> A friend is going to buy and/or build a robotic CNC setup for his plama
> torch.
> A system is $5000 complete or a mainboard and software can be purchased for
> $1500
> or so with him supplying the motors, power supply, etc.
>
> He says he needs 35 volt power supply with 35 amps.
>
> So if I wire together 12 power supplys (12v, 9a), voila, 36 volts at 36
> amps.
>
> Hehe, it can't be that easy can it?

No, it can't. The supplies are not isolated from the case, they are
not designed to be paralleled, the regulation tracks the +5 volt output
which usually requires a minimum load to operate. The 12 volt outputs
are low current, as well.

--
We now return you to our normally scheduled programming.

Michael A. Terrell
Central Florida

830. Re: Making PCBs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 19:50:02 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <401d586b$0$16733$cc9e4d1f@news.dial.pipex.com>
Source record: 29017

Dick wrote:
> Thanks to the group for all the past advice given on PCB
> drafting software & UV exposure boxes, it's all being put to good use.
>
> In the past I've used ferric chloride professionally as my
> etchant (and left disposal of the etching solution to the work's
> chemist) but now I'm doing things for myself safe disposal is going to
> be my problem, searching on the web for an answer ammonium and sodium
> persulphate come up as a suitable alternatives but not ones I've used.
> Does anyone have experience of using persulphates as a D-I-Y PCB etchant
> ? Are they as good as ferric chloride, are there any problems with using
> them & how easy is it to dispose of the spent solution ?

It's just as easy to dispose of as FeCl3. The solution doesn't keep very
well, unlike FeCl3.

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

831. Re: Submariners, Loran C question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 20:13:40 UTC
From: Steve Silverwood <kb6ojs@arrl.net>
Message-ID: <MPG.1a86d4967af9f87e9896ab@news.individual.net>
Source record: 29018

In article <YuwSb.36198$6O4.1013256@bgtnsc04-news.ops.worldnet.att.net>,
jmmilner@att.not says...
> > > Is the 100khz Loran C signal useable while submerged? Do to it's
> > >long wave nature, does it penetrate the surface to any depth beyond
> > >a few feet?
> >
> > Losses are about 10 dB/m at 100 kHz.
>
> The U.S. uses VLH to "communicate with submerged submarines on at
> frequencies of 3-30 kHz" (http://www.fas.org/nuke/guide/usa/c3i/vlf.htm).
> The data rate is 50 baud but it must work - there are Trident ballistic
> missile subs waiting for launch orders on the receiving end.
> The depth and receiver characteristics are likely classified.

The way it usually works is to send a three-letter group via VERY slow
CW on a VLF frequency, either via the land-based VLF stations or the
TACAMO aircraft (streaming a way-long wire antenna in flight). This
alerts the intended recipient to near the surface to raise the antenna,
or to float the buoy antenna, and pick up traffic via satellite burst
transmission.

--

-- //Steve//

Steve Silverwood, KB6OJS
Fountain Valley, CA
Email: kb6ojs@arrl.net

832. Re: Salvaged Computer Power Supplies

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 20:21:58 UTC
From: Rex <notreally@hotmail.invalid>
Message-ID: <9enq101qbb6pvje56g5tm99fn2qamdp7gs@4ax.com>
Source record: 29019

On Sun, 1 Feb 2004 11:30:10 -0600, "Charlie" <nospam@nospam.com> wrote:

>He says he needs 35 volt power supply with 35 amps.

Huh? 35 x 35 = 1225 watts What kind of motors are in this CNC setup?
That's almost 2 Hp. Are you controlling the cut or driving the cutter?

833. best magnetic/clip-style retaining screw/nut drivers?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 22:24:33 UTC
From: alanh_27@yahoo.com
Message-ID: <1e3670a7.0402011424.55239a4b@posting.google.com>
Source record: 29020
Cross-posted to:
rec.radio.amateur.homebrew,rec.aviation.homebuilt,sci.electronics.repair,rec.crafts.metalworking,rec.woodworking

the scenario is pulling out/putting in screws and nuts in orientations
where gravity or tightquarters or awkwardness prevent a handhold on
the item at moments that it has no retention by threads. Ie, at the
end or at the beginning, gravity wants to make it fall down into bad
places for it to be....

Best magnetic or clip-style retaining screwdrivers, wrenches, socket
sets?

834. Re: Making PCBs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 22:29:38 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1075674581.69604@smtp-1.griffin.com>
Source record: 29021

looking for the info you recieved about diy photo etching..ie exposure times
etc.. exposure boxes etc...
i dont suppose you kept the info ???

simon

"Dick" <dick@langwang.demon.co.uk> wrote in message
news:S9AcnnCdrNHAFwzr@langwang.demon.co.uk...
> Thanks to the group for all the past advice given on PCB
> drafting software & UV exposure boxes, it's all being put to good use.
>
> In the past I've used ferric chloride professionally as my
> etchant (and left disposal of the etching solution to the work's
> chemist) but now I'm doing things for myself safe disposal is going to
> be my problem, searching on the web for an answer ammonium and sodium
> persulphate come up as a suitable alternatives but not ones I've used.
> Does anyone have experience of using persulphates as a D-I-Y PCB etchant
> ? Are they as good as ferric chloride, are there any problems with using
> them & how easy is it to dispose of the spent solution ?
> --
> Dick
> GM0MNL

835. Re: best magnetic/clip-style retaining screw/nut drivers?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 22:30:05 UTC
From: Peter van Merkerk <merkerk@deadspam.com>
Message-ID: <bvjuo1$tf6aa$1@ID-133164.news.uni-berlin.de>
Source record: 29022
Cross-posted to:
rec.radio.amateur.homebrew,rec.aviation.homebuilt,sci.electronics.repair,rec.crafts.metalworking,rec.woodworking

"Alan Horowitz" <alanh_27@yahoo.com> wrote in message
news:1e3670a7.0402011424.55239a4b@posting.google.com...
> the scenario is pulling out/putting in screws and nuts in orientations
> where gravity or tightquarters or awkwardness prevent a handhold on
> the item at moments that it has no retention by threads. Ie, at the
> end or at the beginning, gravity wants to make it fall down into bad
> places for it to be....
>
> Best magnetic or clip-style retaining screwdrivers, wrenches, socket
> sets?

What I usually do is take an ordinary screwdriver and slide a magnet over it
several times. After that screws won't fall off if you don't shake too hard.
Works well for me.

--
Peter van Merkerk
peter.van.merkerk(at)dse.nl

836. Re: Making PCBs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 22:31:16 UTC
From: dplatt@radagast.org
Message-ID: <101qvhk7v368h7f@corp.supernews.com>
Source record: 29023

> In the past I've used ferric chloride professionally as my
>etchant (and left disposal of the etching solution to the work's
>chemist) but now I'm doing things for myself safe disposal is going to
>be my problem, searching on the web for an answer ammonium and sodium
>persulphate come up as a suitable alternatives but not ones I've used.
>Does anyone have experience of using persulphates as a D-I-Y PCB etchant
>? Are they as good as ferric chloride, are there any problems with using
>them & how easy is it to dispose of the spent solution ?

Last year, as an experiment, I marked up a small piece of double-sided copperclad with Sharpie and similar marking pens. I then etched it in a solution of sodium monopersulphate (cheaply available at pool-supply stores - it's used as an oxygen shock) and hot tap water. A plastic cup served as the container, and I agitated gently by hand.

It definitely etched! As I recall, 10-15 minutes was sufficient to etch the unprotected areas down to bare fiberglass. The etch was easy to monitor as the solution is clear to start with, and turns a clear blue-green as the copper is etched. The different marking pens I'd tried had different amounts of resistance to the etch... one or two stood up fairly well, the others did not.

I haven't tried actually making a functional board with this etchant yet, but may do so in the near future - I've refurbed an old HP flatbed plotter, and converted the pen-holder to use Staedtler (sp?) red-ink permanent marker pens which have a good reputation for etchant resistance. Some form of improved solution-heating and agitation/bubbling arrangment would probably be a good idea, to get a quick and consistent etch.

Disposal can be quite easy. Mix up a solution of sodium carbonate (washing soda, also sold at pool-supply stores as a mild alkali to raise the pH of pool water) and titrate it into the used solution. The dissolved copper will convert to copper carbonate, and precipitate out... copper carbonate isn't very soluble in water. Strain the solution through a paper filter (e.g. coffee filter) to separate the carbonate from the remaining solution (which should be clear once again if you added enough sodium carbonate).

I just dumped the copper-free solution into my swimming pool, and discarded the filter in the trash. If you want to really immobalize the copper carbonate, you could mix it into a batch of plaster-of-paris or portland cement and let it harden up, and then trash the resulting piece of rock.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

837. Re: Making PCBs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 22:37:08 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1075675031.395709@smtp-1.griffin.com>
Source record: 29024

or dick tell me how you made your light boxe..and some idea on exposure
times..are you using pre sensitised pcb or are you spraying your own??if so
what make of gunk you using..tnx..simon..
oh i found the previous posts...
"Dick" <dick@langwang.demon.co.uk> wrote in message
news:S9AcnnCdrNHAFwzr@langwang.demon.co.uk...
> Thanks to the group for all the past advice given on PCB
> drafting software & UV exposure boxes, it's all being put to good use.
>
> In the past I've used ferric chloride professionally as my
> etchant (and left disposal of the etching solution to the work's
> chemist) but now I'm doing things for myself safe disposal is going to
> be my problem, searching on the web for an answer ammonium and sodium
> persulphate come up as a suitable alternatives but not ones I've used.
> Does anyone have experience of using persulphates as a D-I-Y PCB etchant
> ? Are they as good as ferric chloride, are there any problems with using
> them & how easy is it to dispose of the spent solution ?
> --
> Dick
> GM0MNL

838. Re: 30 meter beacon run this weekend

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 22:48:10 UTC
From: Basil Cochrane <brian@NOMAILiquest.XSPAMXnet>
Message-ID: <KmfTb.7917$F23.7886@newsread2.news.pas.earthlink.net>
Source record: 29025

Hi Tom

In Central Indiana, all I have on your beacon freq is some digital stuff.

Dang it.

I have some 10.113 HC49 crystals ...would you want one?

"Tom Sevart" <n2uhc@yahoo.nospam.com> wrote in message
news:bveptk$qbini$1@ID-52518.news.uni-berlin.de...
> Hi all,
>
> I'll be operating my 30 meter 100 mW CW beacon this weekend. The
frequency
> will be 10.146 MHZ. Operating time will be on Saturday from early morning
> to about 2300Z. On Sunday from early morning to around 0300Z.
>
> Details on the beacon are located at
> http://www.geocities.com/n2uhc_2/30m_bcn.html . Please send a reception
> report to me at n2uhc@yahoo.com. Please include your QTH, time you heard
> it, and how well you heard it. I'll respond with a QSL via email, or if
you
> would like a paper copy please request one & include your address.
>
> The antenna is a 30 meter dipole set up in an inverted-V style, with legs
> pointing N-S.
>
> Thanks.
>
> --
> Tom Sevart N2UHC
> Frontenac, KS
> http://www.geocities.com/n2uhc
>
>

839. Re: best magnetic/clip-style retaining screw/nut drivers?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 23:07:12 UTC
From: Gary Coffman <ke4zv@bellsouth.net>
Message-ID: <741r10t0lap539bh885khgq4p81ju69qmg@4ax.com>
Source record: 29027
Cross-posted to:
rec.radio.amateur.homebrew,rec.aviation.homebuilt,sci.electronics.repair,rec.crafts.metalworking,rec.woodworking

On 1 Feb 2004 14:24:33 -0800, alanh_27@yahoo.com (Alan Horowitz) wrote:
>the scenario is pulling out/putting in screws and nuts in orientations
>where gravity or tightquarters or awkwardness prevent a handhold on
>the item at moments that it has no retention by threads. Ie, at the
>end or at the beginning, gravity wants to make it fall down into bad
>places for it to be....
>
>Best magnetic or clip-style retaining screwdrivers, wrenches, socket
>sets?

For slotted head screws, I like the wedge type screwholders. They
work well, are easy to use, don't get in the way, and don't attract
undesirable swarf. I do not like magnetic tools for the latter reason.

I haven't found anything comparable for Philips head screws. I
actively detest the spring clip style screwholders since the spring
clips get in the way, and they aren't easy to use.

So since I always seem to have a bottle or two of expired Crazy
Glue, I will often just glue a Philips screw onto a screwdriver.
Since the goop is expired, it doesn't hold so well you can't easily
free the screwdriver from the screw, but it still bonds instantly,
so it is quick to use.

For holding nuts in sockets, a bit of modeling clay is just the trick.

Gary

840. Re: Making PCBs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 23:30:25 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <UoM1ZmFRwYHAFAyF@ifwtech.co.uk>
Source record: 29028

Dick wrote:
> Thanks to the group for all the past advice given on PCB
>drafting software & UV exposure boxes, it's all being put to good use.
>
> In the past I've used ferric chloride professionally as my
>etchant (and left disposal of the etching solution to the work's
>chemist) but now I'm doing things for myself safe disposal is going to
>be my problem,

Safe disposal of amateur quantities of ferric chloride is easy enough -
just solidify it in a small bag of cement.

>searching on the web for an answer ammonium and sodium
>persulphate come up as a suitable alternatives but not ones I've used.
>Does anyone have experience of using persulphates as a D-I-Y PCB etchant
>?
>Are they as good as ferric chloride, are there any problems with using
>them & how easy is it to dispose of the spent solution ?

I haven't, but a friend has used ammonium persulphate and speaks very
well of it. He says it etches at least as well as ferric chloride, and
after use the remaining ammonium persulphate can be recrystallised out
of the copper sulphate solution.

But unfortunately he's in no position to demonstrate this any more,
because we haven't been able to find a source of small quantities (up to
a few kilos) in the UK. Apart from ferric chloride, and sodium
persulphate (which isn't as effective as the ammonium salt) it seems
impossible to buy small quantities of general chemicals, these days...
unless someone knows better... and I hope someone does...

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

841. Re: best magnetic/clip-style retaining screw/nut drivers?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-01 23:58:36 UTC
From: DanG <dgriff23@7cox.net>
Message-ID: <spgTb.15626$Q_4.3977@okepread03>
Source record: 29029
Cross-posted to:
rec.radio.amateur.homebrew,rec.aviation.homebuilt,sci.electronics.repair,rec.crafts.metalworking,rec.woodworking

The type shown here are the best. I was fortunate to get several
that have Phillips on one end and straight on the opposite end
about a foot long US military surplus.

http://www.setools.com/sskits.shtml

^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
Keep the whole world singing. . . .
DanG

"Gary Coffman" <ke4zv@bellsouth.net> wrote in message
news:741r10t0lap539bh885khgq4p81ju69qmg@4ax.com...
> On 1 Feb 2004 14:24:33 -0800, alanh_27@yahoo.com (Alan Horowitz)
wrote:
> >the scenario is pulling out/putting in screws and nuts in
orientations
> >where gravity or tightquarters or awkwardness prevent a
handhold on
> >the item at moments that it has no retention by threads. Ie, at
the
> >end or at the beginning, gravity wants to make it fall down
into bad
> >places for it to be....
> >
> >Best magnetic or clip-style retaining screwdrivers, wrenches,
socket
> >sets?
>
> For slotted head screws, I like the wedge type screwholders.
They
> work well, are easy to use, don't get in the way, and don't
attract
> undesirable swarf. I do not like magnetic tools for the latter
reason.
>
> I haven't found anything comparable for Philips head screws. I
> actively detest the spring clip style screwholders since the
spring
> clips get in the way, and they aren't easy to use.
>
> So since I always seem to have a bottle or two of expired Crazy
> Glue, I will often just glue a Philips screw onto a screwdriver.
> Since the goop is expired, it doesn't hold so well you can't

easily
> free the screwdriver from the screw, but it still bonds
instantly,
> so it is quick to use.
>
> For holding nuts in sockets, a bit of modeling clay is just the
trick.
>
> Gary

842. Re: best magnetic/clip-style retaining screw/nut drivers?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 00:19:31 UTC
From: SawEyes <bbaa@etcetera.co>
Message-ID: <401d9791$0$19705$afc38c87@news.optusnet.com.au>
Source record: 29030
Cross-posted to:
rec.radio.amateur.homebrew,rec.aviation.homebuilt,sci.electronics.repair,rec.crafts.metalworking,rec.woodworking

> What I usually do is take an ordinary screwdriver and slide a magnet over
it
> several times. After that screws won't fall off if you don't shake too
hard.
> Works well for me.

Yes this is a good idea. Maybe not exactly what you are looking for, but its handy to have magnetized screwdriving tips for driving screws in all the hard to reach places without losing them. I just received a little magnetizer/demagnetizer gadget from rockler which works quite well.
Just have to remember to de-magnetize the tools if you are going to use them on electronic components :)
The magnetizer/demagnetizer can be found here http://tinyurl.com/2hnvr
It goes for $6.99.

--
Regards,

Dean Bielanowski
Editor,
Online Tool Reviews
http://www.onlinetoolreviews.com

Latest 5 Reviews:
- Veritas Shelf Drilling Jig
- Ryobi CID1802V 18v Cordless Drill
- Workshop Essentials Under $30
- Festool PS 300 Jigsaws
- Delta Universal Tenoning Jig
---

843. Re: best magnetic/clip-style retaining screw/nut drivers?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 00:26:50 UTC
From: Stu Fields <kfields@iwvisp.com>
Message-ID: <101r6ddlj66c05c@corp.supernews.com>
Source record: 29031
Cross-posted to:
rec.radio.amateur.homebrew,rec.aviation.homebuilt,sci.electronics.repair,rec.crafts.metalworking,rec.woodworking

An Old helo mech showed me some stuff called fuel lube. Aircraft Spruce P/N
09-25300. It is a very sticky grease and a small dab will hold the screw,
nut, washer whatever on the end of the tool. Even held a small nail on the
face of a hammer for one-handed out-of-reach nailing. It is also useful as a
gasket holder, anti-seize and other lube jobs. Not cheap, but I have had a
1# can for some time. "Guaranteed not to rip, rattle, run around the
seams, drip down your leg or smell bad in the summer time". I'ts better
than Dr. Chutes Two Root Rubbing compound.
Stu Fields sfkf@iwvisp.com
"Alan Horowitz" <alanh_27@yahoo.com> wrote in message
news:1e3670a7.0402011424.55239a4b@posting.google.com...
> the scenario is pulling out/putting in screws and nuts in orientations
> where gravity or tightquarters or awkwardness prevent a handhold on
> the item at moments that it has no retention by threads. Ie, at the
> end or at the beginning, gravity wants to make it fall down into bad
> places for it to be....
>
> Best magnetic or clip-style retaining screwdrivers, wrenches, socket
> sets?

844. Re: Submariners, Loran C question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 00:48:05 UTC
From: Jack Smith <Jack.Smith@cox.net>
Message-ID: <pa7r10h2b9oma2a7i5964ihb65m4jp707n@4ax.com>
Source record: 29032

On Sun, 1 Feb 2004 12:13:40 -0800, Steve Silverwood <kb6ojs@arrl.net>
wrote:

>In article <YuwSb.36198$6O4.1013256@bgtnsc04-news.ops.worldnet.att.net>,
>jmmilner@att.not says...
>> > > Is the 100khz Loran C signal useable while submerged? Do to it's
>> > >long wave nature, does it penetrate the surface to any depth beyond
>> > >a few feet?
>> >
>> > Losses are about 10 dB/m at 100 kHz.
>>
>> The U.S. uses VLH to "communicate with submerged submarines on at
>> frequencies of 3-30 kHz" (http://www.fas.org/nuke/guide/usa/c3i/vlf.htm).
>> The data rate is 50 baud but it must work - there are Trident ballistic
>> missile subs waiting for launch orders on the receiving end.
>> The depth and receiver characteristics are likely classified.
>
>The way it usually works is to send a three-letter group via VERY slow
>CW on a VLF frequency, either via the land-based VLF stations or the
>TACAMO aircraft (streaming a way-long wire antenna in flight). This
>alerts the intended recipient to near the surface to raise the antenna,
>or to float the buoy antenna, and pick up traffic via satellite burst
>transmission.

For the stuff down in the power frequency range (under 100 Hz, not 100
KHZ) where the "bell ringer" systems operate, apparently SQUID (super
conducting quantum interference devices) antennas are used. See, e.g.,
http://techreports.larc.nasa.gov/ltrs/PDF/2003/tm/NASA-2003-tm212647.pdf

These SQUID antennas work up to a maximum of 1 KHz, so it's not going
to play for LORAN C.

Jack K8ZOA

845. 13.8 V power supply question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 00:52:18 UTC
From: Uwe Langmesser <outhouse@midcoast.com>
Message-ID: <BC430972.B653%outhouse@midcoast.com>
Source record: 29036

I need a 12-14 V power supply for my new 2m tranceiver. On transmit I need probably 10 to 15 amps and I hooked up and old transformer with a rectifier and a filter section I get 15V at my filter with no load, the transformer is good for 25 amps) but if I draw 15 amps I will get too much ripple,

so I need a regulating section.

Homebrewing is called for.

Last years radio amateur handbook has a design for a 28 volt regulated power supply and while I would feel comfortable building a proven design I do not feel comfortable to redesign that regulating section for my needs.

So the question is does anyone have a diagram for a proven 12-14 Volt regulated supply for 10 to 25 amps??

Thanks for your help
Uwe

846. Re: best magnetic/clip-style retaining screw/nut drivers?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 01:02:47 UTC
From: Trevor Jones <t.o.jones@sympatico.ca>
Message-ID: <401DA1B7.FA328509@sympatico.ca>
Source record: 29033
Cross-posted to:
rec.radio.amateur.homebrew,rec.aviation.homebuilt,sci.electronics.repair,rec.crafts.metalworking,rec.woodworking

Stu Fields wrote:
>
> An Old helo mech showed me some stuff called fuel lube. Aircraft Spruce P/N
> 09-25300. It is a very sticky grease and a small dab will hold the screw,
> nut, washer whatever on the end of the tool. Even held a small nail on the
> face of a hammer for one-handed out-of-reach nailing. It is also useful as a
> gasket holder, anti-seize and other lube jobs. Not cheap, but I have had a
> 1# can for some time. "Guaranteed not to rip, rattle, run around the
> seams, drip down your leg or smell bad in the summer time". I'ts better
> than Dr. Chutes Two Root Rubbing compound.
> Stu Fields sfkf@iwvisp.com

I have used the stuff under the name "honey grease" though it was
officially "grease, plug valve, hydrocarbon resistant.
Great stuff, until some doorknob spooges too much of it on a gasket and
gets it into a fuel or hydraulic system.

Cheers
Trevor Jones

847. Re: 30 meter beacon run this weekend

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 01:10:29 UTC
From: Tom Sevart <n2uhc@yahoo.nospam.com>
Message-ID: <bvk0jd$t526a$1@ID-52518.news.uni-berlin.de>
Source record: 29026

"Basil Cochrane" <brian@NOMAILiquest.XSPAMXnet> wrote in message
news:KmfTb.7917$F23.7886@newsread2.news.pas.earthlink.net...
> Hi Tom
>
> In Central Indiana, all I have on your beacon freq is some digital stuff.
>
> Dang it.
>
> I have some 10.113 HC49 crystals ...would you want one?
>

I think I can get the frequency down to around 10.139 or .138 by adding a turn or two to the coil and changing capacitors. Before I run the beacon again, I'll do some experimenting.

Tom

848. Re: best magnetic/clip-style retaining screw/nut drivers?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 01:53:49 UTC
From: Erik <erik@mydeja.com>
Message-ID: <erik-122917.17535001022004@news.verizon.net>
Source record: 29034
Cross-posted to:
rec.radio.amateur.homebrew,rec.aviation.homebuilt,sci.electronics.repair,rec.crafts.metalworking,rec.woodworking

In article <401d9791$0$19705$afc38c87@news.optusnet.com.au>,
"SawEyes" <bbaa@etcetera.co> wrote:

> > What I usually do is take an ordinary screwdriver and slide a magnet over
> it
> > several times. After that screws won't fall off if you don't shake too
> hard.
> > Works well for me.
>
> Yes this is a good idea. Maybe not exactly what you are looking for, but its
> handy to have magnetized screwdriving tips for driving screws in all the
> hard to reach places without losing them. I just received a little
> magnetizer/demagnetizer gadget from rockler which works quite well.
> Just have to remember to de-magnetize the tools if you are going to use them
> on electronic components :)
> The magnetizer/demagnetizer can be found here http://tinyurl.com/2hnvr
> It goes for $6.99.

I have a couple of these... they work great!

Only snag is stuff like the stainless screws they use around automotive
headlights...

Sometimes you have to fool around a little 'finding' which step of the
demagnetizer part works best for which driver. I've noticed if I don't
get a complete demagnetize using one step, it's better to remagnetize
before trying another step. Don't think the demagnetize is ever quite
100% either, but good enough not to pick much if any crud... a
de-gaussing coil is best...

Erik

849. Re: best magnetic/clip-style retaining screw/nut drivers?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 01:59:38 UTC
From: Leo Lichtman <l.lichtman@worldnet.att.net>
Message-ID: <eaiTb.158053$6y6.3088130@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29035
Cross-posted to:
rec.radio.amateur.homebrew,rec.aviation.homebuilt,sci.electronics.repair,rec.crafts.metalworking,rec.woodworking

My main objection to magnetic screwholders is that the screw is attracted to the edge of the hole, making it difficult to start it. Anyone else have this trouble?

I have used the kind with a flat rod that twists crosswise, the split bit that wedges over itself, CA glue, masking tape, grease, hemostats, and whatever else comes to hand. I can't say I have a favorite, but I agree that the double spring-clip type seems to get in the way, and often drops the screw at a crucial moment.

850. Re: KIWA Air core Am loop details wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 02:08:39 UTC
From: Nocturnal1 <file13@nojunkmail.com>
Message-ID: <401daff4$1_1@newspeer2.tds.net>
Source record: 29039

Geez - I'd give my right ___ for that schematic.
Craig may have put alot of work into it, but he's no longer producing them.
eBay prices are at ridiculous levels for this thing. I just wanna make ONE
for myself - not infringe on any copyrights or patents. It won't look the
same and probably won't be the same - but I'd sure like to see why the
optoisolator is in there...
~Tom

"Pete KE9OA" <n.gianakopoulos@worldnet.att.net> wrote in message
news:DL8Sb.134777$6y6.2622331@bgtnsc05-news.ops.worldnet.att.net...
> I saw a schematic for the amplifier years ago. They key was what appeared
to
> be linear optoisolators in the feedback circuitry.
> I was going to build it up, but it looked as if the designer put quite a
bit
> of work into the circuit design, so I took a pass on it.
> I purged the details from my hard drive a few years back.
>
> Pete
>
> "Nocturnal1" <file13@nojunkmail.com> wrote in message
> news:4018aae8$1_3@newspeer2.tds.net...
> > I've built several loops and they are all similar as you say, but the
KIWA
> > loop is quite a different animal! I've have mild success with what I've
> done
> > so far in my efforts to duplicate one, but I cannot seem to find much on
> the
> > regenerative loop and circuitry contained within it.
> >
> > ~Tom in Mn
> >
> >
>
>

851. Re: Salvaged Computer Power Supplies

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 03:55:48 UTC
From: Allan Butler <ka0ies@hotmail.com>
Message-ID: <8TjTb.208699$na.340762@attbi_s04>
Source record: 29037

Charlie wrote:

> Since I have these power supplies laying around, I can't resist asking.
> :)
>
> A friend is going to buy and/or build a robotic CNC setup for his plama
> torch.
> A system is $5000 complete or a mainboard and software can be purchased
> for $1500
> or so with him supplying the motors, power supply, etc.
>
> He says he needs 35 volt power supply with 35 amps.
>
> So if I wire together 12 power supplys (12v, 9a), voila, 36 volts at 36
> amps.
>
> Hehe, it can't be that easy can it?

Nope.

If you put three twelve volt power supplies in series the most that you can get out of them is the same as the lowest current rating of the three power supplies.

If you had three 12 volt 35 amp power supplies then you could do the 35 amp 36 volt setup, if you isolated the power supplies from ground and made some other modifications.

Try to find a dedicated power supply that is actually designed to the task at hand.

Al Butler
ka0ies

852. Re: Kenwood TS-700A Power Help please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 03:58:46 UTC
From: Allan Butler <ka0ies@hotmail.com>
Message-ID: <WVjTb.208718$na.340674@attbi_s04>
Source record: 29038

Tuuk wrote:

> Hi, I have the Kenwood TS-700A, 2m rig, I had a problem with the power
> cord, got bitten to pieces.
> Does anyone know the proper pin requirement? Which of the four pins is to
> line up with the black, gnd and neutral? I am using it on 120v only but
> has the option for 220.
> There are two horizontal pins, two vertical. Any help would be
> appreciated.
>
> Thanks

If you go to http://www.mods.dk and click on the Kenwood button it will show a frame on the left side of the screen. At the top is a button that is labeled manuals. Click on that and look up the manual for the TS-700 radio. It is presented as a pdf and should have the information that you need to make the power cord you need.

Al Butler
ka0ies

853. Re: best magnetic/clip-style retaining screw/nut drivers?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 05:31:14 UTC
From: Richard Crowley <rcrowley7@xprt.net>
Message-ID: <101ro58b240dv46@corp.supernews.com>
Source record: 29040
Cross-posted to:
rec.radio.amateur.homebrew,rec.aviation.homebuilt,sci.electronics.repair,rec.crafts.metalworking,rec.woodworking

"SawEyes" wrote ...
> Just have to remember to de-magnetize the tools if you are
> going to use them on electronic components :)

What electronic components are affected by using magnetic tools?
We used to have to take care around magnetic tape heads, but
unless you are working on tape (or cassette) recorders, I can't
think of any real danger of using magnetized tools?

854. Re: best magnetic/clip-style retaining screw/nut drivers?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 08:07:56 UTC
From: James Sweet <jamessweet@hotmail.com>
Message-ID: <wznTb.161134$5V2.837082@attbi_s53>
Source record: 29041
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.repair

"Richard Crowley" <rcrowley7@xprt.net> wrote in message
news:101ro58b240dv46@corp.supernews.com...
> "SawEyes" wrote ...
> > Just have to remember to de-magnetize the tools if you are
> > going to use them on electronic components :)
>
> What electronic components are affected by using magnetic tools?
> We used to have to take care around magnetic tape heads, but
> unless you are working on tape (or cassette) recorders, I can't
> think of any real danger of using magnetized tools?
>
>

The only thing affected by magnetism is magnetic media and heads. Nothing else will be damaged by normal magnets, though CRT's, compases and hall effect sensors will be interfered with.

Why's this being crossposted so so many random groups? I deleted the ones that definitly have no relevance.

855. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 08:44:00 UTC
From: Mike <m.j.willis@rl.ac.uk>
Message-ID: <bvl2pd$ili@newton.cc.rl.ac.uk>
Source record: 29042

In order to avoid the problems you have noted, find a thicker piece of scrap material. Make a sandwich with your aluminium panel as the filler. Clamp together solidly as near to the hole position as possible. Drill through the whole sandwich. It is the only way I know to drill neat holes in really thin panels.

If your panel is not that thin, say 1mm, drill a very small hole, say 1 mm using a PCB drill and open it out to the required size using a sequence of slightly larger drills and a reamer.

The best way is to use a hole punch. You don't find these very often. A QMAX type cutter is a good substitute but you have to drill a hole for the screw. Fortunately, the damage caused in drilling the screw hole is usually confined to the scrap "int' middl' t'ole".

856. Re: Parts or broken rigs wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 09:12:20 UTC
From: Sofie <sofie@olypen.com>
Message-ID: <101s58mku8tg97e@corp.supernews.com>
Source record: 29044
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.swap,rec.radio.swap,sci.electronics.repair

J. Yazel:
This is not a phenomena unique to Seattle..... all repair shops everywhere have to deal with disposing of un-repaired and unclaimed electronics equipment. Most shops can only keep a limited amount of "bone yard" equipment to cannibalize...
.... and furthermore, it takes too much expensive labor time to search through old equipment for used and questionable quality parts when a brand new, unstressed part may be in stock or readily available..... Where ever you are, check with your local repair shops, the smaller independents may be easier to deal with.... most will gladly "donate" the scraps to you so they won't have to spend money to haul them to the dump.
--
Best Regards,
Daniel Sofie
Electronics Supply & Repair

"J. Yazel" <jyazel@ai5.net> wrote in message news:cdcq105j26bmsi3l25etmla3pb5s716j6o@4ax.com...
> On Sat, 31 Jan 2004 15:31:17 -0800, "Sofie" <sofie@olypen.com> wrote:
>
> >Bob,
> >Take a trip to some of your local repair shops......
> >I know that at my shop that about once a month or two that I am filling up a
> >pick up truck full of old and newer VCRs, DVDs, televisions, stereo
> >equipment, CD players, CB radios, etc.and taking it all to the dump......
> >otherwise I wouldn't be able to walk around inside the shop.
> >I am in the Seattle area so it would not be worth the shipping costs.
> ==========
>
> One more responder from Seattle and I might consider moving there.
>
> Jack
>

857. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 09:17:22 UTC
From: Roger Gt <not@here.net>
Message-ID: <CAoTb.8801$Nj2.2733@newssvr29.news.prodigy.com>
Source record: 29043

"Mike" <m.j.willis @rl.ac.uk> wrote in message
news:bvl2pd$ili@newton.cc.rl.ac.uk...
> In order to avoid the problems you have noted,
find a thicker piece of scrap
> material. Make a sandwich with your aluminum
panel as the filler. Clamp
> together solidly as near to the hole position as
possible. Drill through the
> whole sandwich. It is the only way I know to
drill neat holes in really thin
> panels.
>
> If your panel is not that thin, say 1mm, drill a
very small hole, say 1 mm
> using a PCB drill and open it out to the
required size using a sequence of
> slightly larger drills and a reamer.
>
> The best way is to use a hole punch. You don't
find these very often. A QMAX
> type cutter is a good substitute but you have to
drill a hole for the screw.
> Fortunately, the damage caused in drilling the
screw hole is usually
> confined to the scrap "int' middl' t'ole".

A Punch is a good way if you are within about 2
inches of the edge...
Try a Whitney #5 punch. You can find the punch
kit and accessories here

http://www.newmantools.com/roper/5jr.htm

I've been using one of these for over 25 years.
They also last if you don't abuse them.

858. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 09:35:55 UTC
From: PaoloC <ollollo@hotpop.com>
Message-ID: <bvl5lh$t4pcc$1@ID-199778.news.uni-berlin.de>
Source record: 29045

Paul Clay wrote:

> What's the best way/tool to cut or drill holes 1/8 inch to 5/16 inch in
> diameter in thin gauge aluminum (for inserting potentiometers and
> phono, power jacks, etc.)? I've tried using just a power drill and
> genernal purpose drill bits and the results have been sort of ragged
> (the edges of the hole are ragged and the process of drilling creates a
> depression surrounding the drilled hole).

Hi.
I've read a very cool suggestion somewhere (GQRP's list perhaps) for
drilling clean holes in Altoids boxes (therefore all aluminium boxes):
fill the box with water, freeze it, then drill.

I usually start with 3mm bit for metal, then 4mm, 5mm and increasing in
small steps. Having a general purpose drill with linearly variable speed
helps too.

Cheap but somehow slow :-)

HTH,
Paolo ZYW

--
QRPp-I #707 + www.paolocravero.tk + I QRP #476
Beacon @ 28.32210 MHz + QRPp + QRSS3 + JN35TC

859. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 09:45:23 UTC
From: Roger Gt <not@here.net>
Message-ID: <T_oTb.18941$bn7.9165@newssvr27.news.prodigy.com>
Source record: 29046

"Roger Gt" <not@here.net> wrote in message
news:CAoTb.8801$Nj2.2733@newssvr29.news.prodigy.com...
>
> "Mike" <m.j.willis @rl.ac.uk> wrote in message
> news:bvl2pd$ili@newton.cc.rl.ac.uk...
> > In order to avoid the problems you have noted,
> find a thicker piece of scrap
> > material. Make a sandwich with your aluminum
> panel as the filler. Clamp
> > together solidly as near to the hole position
as
> possible. Drill through the
> > whole sandwich. It is the only way I know to
> drill neat holes in really thin
> > panels.
> >
> > If your panel is not that thin, say 1mm, drill
a
> very small hole, say 1 mm
> > using a PCB drill and open it out to the
> required size using a sequence of
> > slightly larger drills and a reamer.
> >
> > The best way is to use a hole punch. You don't
> find these very often. A QMAX
> > type cutter is a good substitute but you have
to
> drill a hole for the screw.
> > Fortunately, the damage caused in drilling the
> screw hole is usually
> > confined to the scrap "int' middl' t'ole".
>
> A Punch is a good way if you are within about 2
> inches of the edge...
> Try a Whitney #5 punch. You can find the punch
> kit and accessories here
>
> http://www.newmantools.com/roper/5jr.htm
>
> I've been using one of these for over 25 years.
> They also last if you don't abuse them.

Can order on line at:
http://order.harborfreight.com/EasyAsk/harborfreight/results.jsp

860. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 10:19:56 UTC
From: Roger Gt <not@here.net>
Message-ID: <gvpTb.20737$2K6.9589@newssvr25.news.prodigy.com>
Source record: 28898

"Roger Gt" <not@here.net> wrote in message
news:CAoTb.8801$Nj2.2733@newssvr29.news.prodigy.com...
>
> "Mike" <m.j.willis @rl.ac.uk> wrote in message
> news:bvl2pd$ili@newton.cc.rl.ac.uk...
> > In order to avoid the problems you have noted,
> find a thicker piece of scrap
> > material. Make a sandwich with your aluminum
> panel as the filler. Clamp
> > together solidly as near to the hole position
as
> possible. Drill through the
> > whole sandwich. It is the only way I know to
> drill neat holes in really thin
> > panels.
> >
> > If your panel is not that thin, say 1mm, drill
a
> very small hole, say 1 mm
> > using a PCB drill and open it out to the
> required size using a sequence of
> > slightly larger drills and a reamer.
> >
> > The best way is to use a hole punch. You don't
> find these very often. A QMAX
> > type cutter is a good substitute but you have
to
> drill a hole for the screw.
> > Fortunately, the damage caused in drilling the
> screw hole is usually
> > confined to the scrap "int' middl' t'ole".
>
> A Punch is a good way if you are within about 2
> inches of the edge...
> Try a Whitney #5 punch. You can find the punch
> kit and accessories here
>
http://www.harborfreight.com/cpi/ctaf/Displayitem.taf?itemnumber=44060

Better address!
>
> I've been using one of these for over 25 years.
> They also last if you don't abuse them.
>

>

861. Re: 13.8 V power supply question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 11:17:23 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <B7GdnSahit3QuYPdRVn-jQ@ctc.net>
Source record: 28897

Homebrewing is called for.
>
> Last years radio amateur handbook has a design for a 28 volt regulated
> power supply and while I would feel comfortable building a proven design I
> do not feel comfortable to redesign that regulating section for my needs.
>
> So the question is does anyone have a diagram for a proven 12-14 Volt
> regulated supply for 10 to 25 amps??
>
>

Go here and download the supply you need:

http://www.repeater-builder.com/rbtip/astron-index.html

The Astron supplies are well proven and the design is a very common one
similar for all regulatied supplies using the 723 chip.

862. Re: 13.8 V power supply question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 13:09:13 UTC
From: Tfort <beerbarrelspam@cox.net>
Message-ID: <8vis1097j7srmd3i5bbde14pl11jdp8tcr@4ax.com>
Source record: 28899

On Mon, 02 Feb 2004 00:52:18 GMT, Uwe Langmesser
<outhouse@midcoast.com> wrote:

>I need a 12-14 V power supply for my new 2m tranceiver. On transmit I need
>probably 10 to 15 amps and I hooked up and old transformer with a rectifier
>and a filter section I get 15V at my filter with no load, the transformer is
>good for 25 amps) but if I draw 15 amps I will get too much ripple,
>
>so I need a regulating section.
>
>
>Homebrewing is called for.
>
>Last years radio amateur handbook has a design for a 28 volt regulated
>power supply and while I would feel comfortable building a proven design I
>do not feel comfortable to redesign that regulating section for my needs.
>
>So the question is does anyone have a diagram for a proven 12-14 Volt
>regulated supply for 10 to 25 amps??
>
>Thanks for your help
>Uwe

look at this...

http://www.rason.org/Projects/powsupply/powsupply.htm

Tracy

863. Re: Salvaged Computer Power Supplies

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 13:29:13 UTC
From: Charlie <nospam@nospam.com>
Message-ID: <401e4f65_2@newspeer2.tds.net>
Source record: 28906

Hmmm Darn

"Michael A. Terrell" <mike.terrell@earthlink.net> wrote in message
news:401D3CEC.53E165C9@earthlink.net...
> Charlie wrote:
> >
> > Since I have these power supplies laying around, I can't resist asking.
:)
> >
> > A friend is going to buy and/or build a robotic CNC setup for his plama
> > torch.
> > A system is $5000 complete or a mainboard and software can be purchased
for
> > $1500
> > or so with him supplying the motors, power supply, etc.
> >
> > He says he needs 35 volt power supply with 35 amps.
> >
> > So if I wire together 12 power supplys (12v, 9a), voila, 36 volts at 36
> > amps.
> >
> > Hehe, it can't be that easy can it?
>
> No, it can't. The supplies are not isolated from the case, they are
> not designed to be paralleled, the regulation tracks the +5 volt output
> which usually requires a minimum load to operate. The 12 volt outputs
> are low current, as well.
>
> --
> We now return you to our normally scheduled programming.
>
> Michael A. Terrell
> Central Florida

864. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 13:39:01 UTC
From: Mike <m.j.willis@rl.ac.uk>
Message-ID: <bvljtt$si4@newton.cc.rl.ac.uk>
Source record: 28900

"Bill Turner" <noway@nohow.com> wrote in message
news:71ds1098equomo1qlbf10elctrsjguul33@4ax.com...
> On Mon, 2 Feb 2004 08:44:00 -0000, "Mike" <m.j.willis @rl.ac.uk> wrote:
>
> >It is the only way I know to drill neat holes in really thin
> >panels.
>
> --
>
> You haven't tried a Unibit. It can drill holes in any thickness of
> panel you're likely to ever use. Might even work on aluminum foil;
> haven't tried it but wouldn't be surprised.

Are these available outside the USA?

865. Re: Salvaged Computer Power Supplies

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 13:41:08 UTC
From: Charlie <nospam@nospam.com>
Message-ID: <401e5231_2@newspeer2.tds.net>
Source record: 28907

I just took my friends word for it that that is what he needed. :)

Your response caused me to ask him for a few srpecifics. Turns out your instincts are correct.
Although still undecided, an example of a possible motor runs 4 amps at 2.8 volts.

He will be controlling the cutter in 3 axis.

"Rex" <notreally@hotmail.invalid> wrote in message news:9enq101qbb6pvje56g5tm99fn2qamdp7gs@4ax.com...
> On Sun, 1 Feb 2004 11:30:10 -0600, "Charlie" <nospam@nospam.com> wrote:
>
> >He says he needs 35 volt power supply with 35 amps.
>
> Huh? 35 x 35 = 1225 watts What kind of motors are in this CNC setup?
> That's almost 2 Hp. Are you controlling the cut or driving the cutter?
>

866. Re: Salvaged Computer Power Supplies

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 13:48:00 UTC
From: Charlie <nospam@nospam.com>
Message-ID: <401e53c8_2@newspeer2.tds.net>
Source record: 28908

Darn, thanks for straitening me out on how amperage cant be added together
like voltage.

Some good news is that each motor has a seperate power supply so the amps
needed are 9
or less.

He intends to use current set resisters. Somewhere my freind picked up this
advice:

"Before you start, you must have a suitable step motor, a DC power supply
suitable for the motor and a current set resistor. The motor's rated phase
current must be between 1A and 7A, or 0.3A to 2A for the low current range.
The power supply voltage must be between 4 times and 20 times the motor's
rated voltage. The current set resistor may be a 1/4 Watt, 5% part. Finally
have a STEP and DIRECTION pulse source available."

"Allan Butler" <ka0ies@hotmail.com> wrote in message
news:8TjTb.208699$na.340762@attbi_s04...
> Charlie wrote:
>
> > Since I have these power supplies laying around, I can't resist asking.
> > :)
> >
> > A friend is going to buy and/or build a robotic CNC setup for his plama
> > torch.
> > A system is $5000 complete or a mainboard and software can be purchased
> > for $1500
> > or so with him supplying the motors, power supply, etc.
> >
> > He says he needs 35 volt power supply with 35 amps.
> >
> > So if I wire together 12 power supplys (12v, 9a), voila, 36 volts at 36
> > amps.
> >
> > Hehe, it can't be that easy can it?
>
> Nope.
>
> If you put three twelve volt power supplies in series the most that you
can
> get out of them is the same as the lowest current rating of the three
power
> supplies.
>

> If you had three 12 volt 35 amp power supplies then you could do the 35
amp
> 36 volt setup, if you isolated the power supplies from ground and made
some
> other modifications.
>
> Try to find a dedicated power supply that is actually designed to the task
> at hand.
>
> Al Butler
> ka0ies

867. Re: Submariners, Loran C question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 14:17:26 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <hsLTb.70$tV2.0@newsfep3-gui.server.ntli.net>
Source record: 28945

> In the case of a LORAN receiver, over load is not a serious matter. The
> receiver only has to decide
> if a signal is there or not. The LORAN is a pulsed signal and you only
> have to detect timing of the pulses.
> If the receiver limits strong signals and does not lose sensitivity you
> should be OK
==========
Strong sigs can be limited simply by connecting 2 diodes (cross polarity)
across input of receiver.
Using general purpose Si-diodes limits V(peak) to approx 700 mV ,Schottky
diodes to approx 300 mV.

Frank GM0CSZ / KN6WH

868. Re: 13.8 V power supply question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 14:23:31 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <401E5D63.6100E731@rica.net>
Source record: 28901

Tfort wrote:
>
> On Mon, 02 Feb 2004 00:52:18 GMT, Uwe Langmesser
> <outhouse@midcoast.com> wrote:
>
> >I need a 12-14 V power supply for my new 2m tranceiver. On transmit I need
> >probably 10 to 15 amps and I hooked up and old transformer with a rectifier
> >and a filter section I get 15V at my filter with no load, the transformer is
> >good for 25 amps) but if I draw 15 amps I will get too much ripple,
> >
> >so I need a regulating section.
> >
> >
> >Homebrewing is called for.
> >
> >Last years radio amateur handbook has a design for a 28 volt regulated
> >power supply and while I would feel comfortable building a proven design I
> >do not feel comfortable to redesign that regulating section for my needs.
> >
> >So the question is does anyone have a diagram for a proven 12-14 Volt
> >regulated supply for 10 to 25 amps??
> >
> >Thanks for your help
> >Uwe
>
> look at this...
>
> http://www.rason.org/Projects/powsupply/powsupply.htm
>
> Tracy

It can be easily improved. Eliminate the two .1 ohm emitter resistors
and connect one emitter to R6 and one to R7. Then replace R4 with a
pair of resistors, one going to R6 and one to R7, to average the
voltage from them to reproduce the current limit signal. You will
have to double the value so that two in parallel have the same total
effect. This change will not only eliminate two 10 watt resistors,
but will improve the current sharing between Q2 and Q3.

--
John Popelish

869. max gain for a given boom length on 2m

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 14:32:04 UTC
From: Roger Conroy <rogerconroy@nospam.hotmail.com>
Message-ID: <bvln28gon1@ctb-nnrp2.saix.net>
Source record: 28902

My only limiting factor(besides cost of course) is boom length - limit is 6m. I'm looking for a design for a 2m antenna that would maximise the gain. It should at least be able to handle 100w pep at the feedpoint.

73
Roger ZR3RC

870. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 14:38:05 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <isLTb.71$tV2.62@newsfep3-gui.server.ntli.net>
Source record: 28944

> > What's the best way/tool to cut or drill holes 1/8 inch to 5/16 inch in
> > diameter in thin gauge aluminum (for inserting potentiometers and
> > phono, power jacks, etc.)? I've tried using just a power drill and
> > genernal purpose drill bits and the results have been sort of ragged
> > (the edges of the hole are ragged and the process of drilling creates a
> > depression surrounding the drilled hole).
>
> Get yourself a step bit. You just drill the starter hole, and then drill
> with the step bit until you have the size hole you want. Much cheaper than
> punches.
==========
I am getting good results with 2 sizes of tapered reamer
Initial hole drilled 1/8 inch.
Small diameter reamer from 3 to 13 mm (1/2 inch)
Larger diameter reamer from minimum 6 mm to 30 mm (approx 1.25 inch)

My reamers are Nipponese ,made by Futaba Tool Mfg. who produce 4 sizes ,of
which the 2 I use are size 1 and size 4

For larger holes (say for moving coil meters) I drill multiple holes ,
knock out and finish with half round file.
The latter takes some time obviously , if it is to be done neatly.

Frank GM0CSZ / KN6WH

871. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 14:54:14 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <GntBKmCWSmHAFARq@ifwtech.co.uk>
Source record: 28913

Mike wrote:
>
>"Bill Turner" <noway@nohow.com> wrote in message
>news:71ds1098equomo1qlbf10elctrsjguul33@4ax.com...
>> On Mon, 2 Feb 2004 08:44:00 -0000, "Mike" <m.j.willis @rl.ac.uk> wrote:
>>
>> >It is the only way I know to drill neat holes in really thin
>> >panels.
>>
>> ____
>>
>> You haven't tried a Unibit. It can drill holes in any thickness of
>> panel you're likely to ever use. Might even work on aluminum foil;
>> haven't tried it but wouldn't be surprised.
>
>Are these available outside the USA?
>

There seem to be a number of makers now. G&J Hall, England, make the Bradrad/Multicut series (available in either metric or fractional-inch steps) and the Conecut (smooth taper, available in both metric and inch :-)

Going back to an earlier comment, do think about buying a drill press - even a cheap import is so much better than a hand-held drill.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

872. Re: best magnetic/clip-style retaining screw/nut drivers?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 16:07:04 UTC
From: jim_2004@mindless.com
Message-ID: <db15ddcb.0402020807.52cc29e3@posting.google.com>
Source record: 28903
Cross-posted to:
rec.radio.amateur.homebrew,rec.aviation.homebuilt,sci.electronics.repair,rec.crafts.metalworking,rec.woodworking

alanh_27@yahoo.com (Alan Horowitz) wrote in message
....
> Best magnetic or clip-style retaining screwdrivers, wrenches, socket
> sets?

I use square drive screws. Don't need no steenking magnets ;>)

As a demonstration for doubters I pick up my cordless by holding only
a screw chucked in the bit.

Mike

873. rf antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 16:20:25 UTC
From: ultanir_99@yahoo.com
Message-ID: <c403e21f.0402020820.16e7c4a2@posting.google.com>
Source record: 28904
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Hi all,

I am looking for rf antennas that could fit into a 1" by 1" plastic
case, operating frequency >500Mhz. They could also be pcb antennas.
Could you suggest me some places to lookfor?

Thanks,
Adam

874. circuit equations for Pi & T networks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 18:04:45 UTC
From: artyoung@inovonics.com
Message-ID: <fd3e3636.0402021004.ff76c2a@posting.google.com>
Source record: 28909

I have not seen any equations for a Pi network where you can enter the full complex number which would include the series resistance .

I know someone must have done it but it isn't in any of the ref-material

I have run across.

I did work out an equation some years back using APL2 which handles complex

numbers or complex arrays. I solved the network looking into both ends getting two equations.
rearrange both solving for the tuning cap. Then set up both equations making

one equal the other. Then arrange all those terms (about 15 on each side)

and solve for the loading cap. This will be a a quadratic equation.

Use the quadratic root (-B +/- squareroot (B*2 -4xAxC)) /2xA.

Now plug the values into the computer for load , inductor and Zin.

it should spit out the value of the loading cap.

It is a nasty process but someone has to do it.

I found out that if the inductor is too large negative restiance appears in the

output value for the loading cap. Also if all goes well the answer to the square root will be all resistive with no reactance.

Id post this however the terminal wont handle the APL characters.

Lots of luck

Art Young

AC0F

875. Re: Making PCBs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 18:22:31 UTC
From: k7itm@aol.com
Message-ID: <3200347.0402021022.461d7832@posting.google.com>
Source record: 28910

Ferric chloride solution is somewhat acidic. If you add some baking soda, you will precipitate out almost all the iron. If you first use the solution till it doesn't etch well any longer, there's not a whole lot of ferric left in it; it's mostly ferrous, which isn't particularly corrosive. You can toss in a couple old steel nails to finish the conversion from ferric if you wish. Considering the amount of rust in junkyards, I wouldn't be concerned about the small amount of ferrous you're adding. HOWEVER, I would be more concerned with the copper ions, which, I believe, are considerably more toxic than iron to most life on earth, including things that digest sewage. If it's tiny hobby amounts, it may not be a significant increment, because of all the copper plumbing in homes, but to be safe you can lock it up in Portland cement as Ian says.

Another etchant to consider is cupric chloride. You can make a self-regenerating etchant; etching boards makes more etchant. Instructions at http://users.rcn.com/rexa/Projects/CuCl_ech.html.

Cheers,
Tom

Dick <dick@langwang.demon.co.uk> wrote in message news:<S9AcnnCdrNHAFwzr@langwang.demon.co.uk>...
> Thanks to the group for all the past advice given on PCB
> drafting software & UV exposure boxes, it's all being put to good use.
>
> In the past I've used ferric chloride professionally as my
> etchant (and left disposal of the etching solution to the work's
> chemist) but now I'm doing things for myself safe disposal is going to
> be my problem, searching on the web for an answer ammonium and sodium
> persulphate come up as a suitable alternatives but not ones I've used.
> Does anyone have experience of using persulphates as a D-I-Y PCB etchant
> ? Are they as good as ferric chloride, are there any problems with using
> them & how easy is it to dispose of the spent solution ?

876. Re: Parts or broken rigs wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 18:35:41 UTC
From: Bob <balbert@access1.net>
Message-ID: <SOOdnWzDuJUOBYPdRVn2hg@ecrii.com>
Source record: 28911
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.swap,rec.radio.swap,sci.electronics.repair

I'm not looking for basket case units that are only for salvaging generic parts. I want units that have a chance of being made operational but repair shops want too much to fix them.

I'm not looking for computer monitors; my interest is in transceivers and other ham gear.

73, Bob K6DDX

877. Re: circuit equations for Pi & T networks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 18:43:31 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.0000003c.0050b40f@btinternet.com>
Source record: 28912

Hi,

Possibly have a look at this site -

http://www.sss-mag.com/netcalc.html

73 de Joe, G3LLV

878. Re: Parts or broken rigs wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 19:02:56 UTC
From: Old School <cobra269no-spam@yahoo.com>
Message-ID: <fdnt10plgpmj6qbr5avnr0f2dmis302rvb@4ax.com>
Source record: 28914
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.swap,rec.radio.swap,sci.electronics.repair

You never know, I have gotten a few rigs this way myself and the most
expensive was a Kenwood TS840 that was only brought in for lighting

On Mon, 2 Feb 2004 01:12:20 -0800, "Sofie" <sofie@olypen.com> wrote:

>J. Yazel:
>This is not a phenomena unique to Seattle..... all repair shops everywhere
>have to deal with disposing of un-repaired and unclaimed electronics
>equipment. Most shops can only keep a limited amount of "bone yard"
>equipment to cannibalize...
>.... and furthermore, it takes too much expensive labor time to search
>through old equipment for used and questionable quality parts when a brand
>new, unstressed part may be in stock or readily available..... Where ever
>you are, check with your local repair shops, the smaller independents may be
>easier to deal with.... most will gladly "donate" the scraps to you so they
>won't have to spend money to haul them to the dump.

879. Re: 30 meter beacon run this weekend

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 19:05:32 UTC
From: Tom Sevart <n2uhc@yahoo.nospam.com>
Message-ID: <bvlvjh$scusr$1@ID-52518.news.uni-berlin.de>
Source record: 28905

Results of this weekend's beacon run can be found at
http://www.geocities.com/n2uhc_2/30m_bcn_rslts.html

--
Tom Sevart N2UHC
Frontenac, KS
http://www.geocities.com/n2uhc

880. Re: 13.8 V power supply question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 19:13:37 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <101t8b17q8i7o13@corp.supernews.com>
Source record: 28915

What are you using for a transformer, and what are you using for a filter? If you've got a capacitor input filter with 15V no-load then I come out with a 10.5V transformer -- or do you have a choke-input filter?

In any case, your average linear regulator circuit wants the minimum voltage out of the filter to be 2 - 5V above the output voltage. With a capacitor input filter, and designing for reasonable peak current in the transformer and possible line sags this means that your transformer secondary voltage rating should be on the order of 18V (the circuit referred to by one of the other posters uses just this voltage).

With your 15V no-load filter output your regulator will have barely enough overhead to regulate the peaks; your ripple will still come through just shifted down by a couple of volts.

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

"Uwe Langmesser" <outhouse@midcoast.com> wrote in message
news:BC430972.B653%outhouse@midcoast.com...
> I need a 12-14 V power supply for my new 2m tranceiver. On transmit I need
> probably 10 to 15 amps and I hooked up and old transformer with a
rectifier
> and a filter section I get 15V at my filter with no load, the transformer
is
> good for 25 amps) but if I draw 15 amps I will get too much ripple,
>
> so I need a regulating section.
>
>
> Homebrewing is called for.
>
> Last years radio amateur handbook has a design for a 28 volt regulated
> power supply and while I would feel comfortable building a proven design I
> do not feel comfortable to redesign that regulating section for my needs.
>
> So the question is does anyone have a diagram for a proven 12-14 Volt
> regulated supply for 10 to 25 amps??
>
> Thanks for your help
> Uwe
>

881. Re: circuit equations for Pi & T networks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 19:32:30 UTC
From: Wes Stewart <n7ws@_arrl.net>
Message-ID: <vd9t10tak3br6fvmaf09jkn3o797au7sia@4ax.com>
Source record: 28916

On 2 Feb 2004 10:04:45 -0800, artyoung@inovonics.com (Art Young)
wrote:

|I have not seen any equations for a Pi network where you can enter the
|full complex number which would include the series resistance .

The series resistance of what?

|
|I know someone must have done it but it isn't in any of the
|ref-material
|
|I have run across.
|
|I did work out an equation some years back using APL2 which handles
|complex
|
|numbers or complex arrays. I solved the network looking into both ends
|getting two equations.
|rearrange both solving for the tuning cap. Then set up both equations
|making
|
|one equal the other. Then arrange all those terms (about 15 on each
|side)
|
|and solve for the loading cap. This will be a a quadratic equation.
|
|Use the quadratic root (-B +/- squareroot (B*2 -4xAxC)) /2xA.
|
|Now plug the values into the computer for load , inductor and Zin.
|
|it should spit out the value of the loading cap.
|
|
|It is a nasty process but someone has to do it.
|
|I found out that if the inductor is too large negative restiance
|appears in the
|
|output value for the loading cap. Also if all goes well the answer to
|the square root will be all resistive with no reactance.
|
|Id post this however the terminal wont handle the APL characters.
|
|

|Lots of luck
|
|Art Young
|
|AC0F

882. 2 - tube UV - Light box for pcb makers (for -sale)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 19:51:07 UTC
From: "PAUL.G7IZX" <paul.g7izx@ntlworld.com>
Message-ID: <zXxTb.487$Sa5.412@newsfep3-gui.server.ntli.net>
Source record: 28917

HI THERE .

just thought you might like to know about this , thats advertised on ebay
iideal if you want to make your own circuit boards ,

http://cgi.ebay.co.uk/ws/eBayISAPI.dll?ViewItem&item=3075619669&category=150
2&rd=1

bbyyeeee

883. Re: Parts or broken rigs wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 20:12:42 UTC
From: James Sweet <jamessweet@hotmail.com>
Message-ID: <_ayTb.163943$sv6.894950@attbi_s52>
Source record: 28918
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.swap,rec.radio.swap,sci.electronics.repair

"Bob" <balbert@access1.net> wrote in message
news:SOOdnWzDuJUOBYPdRVn2hg@ecrii.com...
> I'm not looking for basket case units that are only for salvaging generic
> parts. I want units that have a chance of being made operational but
repair
> shops want too much to fix them.
>
> I'm not looking for computer monitors; my interest is in transceivers and
> other ham gear.
>
> 73, Bob K6DDX
>
>

Just call around to shops or put an ad in the local classifieds, ham gear
will be a lot harder to come by than other consumer electronics because most
hams are fairly technically knolegeable people but you never know.

884. Re: rf antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 20:24:32 UTC
From: Gerry <noway@nospam.com>
Message-ID: <4myTb.11718$KV5.6059@nwrdny01.gnilink.net>
Source record: 28919
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.homebrew

"> I am looking for rf antennas that could fit into a 1" by 1" plastic
> case, operating frequency >500Mhz. They could also be pcb antennas.
> Could you suggest me some places to lookfor?
>

Microstrip Antennas, D. M. Pozar, Proceedings of the IEEE, Vol. 80 No. 1,
January, 1992, page 79 et seq

Or go the Patent Office website (www.uspto.gov) and search for patents
issued to Martin V. Schneider.

73 de W2GERry

885. Re: Salvaged Computer Power Supplies

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 21:01:22 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <70ct105cjbs5pbagfrm36eo9hra9r520oj@4ax.com>
Source record: 28920

On Sun, 1 Feb 2004 11:30:10 -0600, "Charlie" <nospam@nospam.com>
wrote:

>
>He says he needs 35 volt power supply with 35 amps.
>
>So if I wire together 12 power supplys (12v, 9a), voila, 36 volts at 36
>amps.

You might take seven identical power supplies, each capable of
delivering at least 35 A from the 5 V line and connect them in series.
However, you would have to disconnect the 0 V DC from chassis on each
unit, so that the chassis of each power supply can be connected to the
protective ground.

If these are ATX power supplies, you would have to look at the startup
sequence, if these power supplies do not go on-line, when the mains is
applies. This may require some optoisolators.

Paul OH3LWR

886. FS: Resistors (new, MILSPEC)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 21:09:15 UTC
From: Walter Treftz <pendragon@netsignia.net>
Message-ID: <401EBC59.46F7CF23@netsignia.net>
Source record: 28921

FOR SALE:
New, MILSPEC, metal film resistors. If interested, make an
offer we can't refuse + postage. Came from the estate of an
SK that got end-of-contract govt contract parts down in the
Tampa area. Will entertain offers on all (preferred), individual
lots, or individual resistors.
73 Walt (N4GL) xxxpendragon@netsignia.netxxx (take out the x's)
or to our "widows committee" site of --- hvalver@hotmail.com ---
----
6200 ohms 10w
TEPRO R58V622
4 ea

20k ohms, 52, 5%
TEPRO TS
6 ea

0.227 ohm, 3w, 1%
TEPRO TS
10 ea

47k ohms, 5w
TEPRO TS
3 ea

56 ohms, 10w
TEPRO RW55V560
4 ea

7.5 ohms, 5W, 3%
TEPRO TS
7 ea

82 ohms, 10w
TEPRO RW68V820
5 ea

200 ohms, 2w
TEPRO RW59 V201
3 ea

20k ohms, 5w, 5%
SAGE Silicohm SL5W
5 ea

40k ohms, 10w
DALE RWP23F 4022F 6751

1 ea

1200 ohms, 2w, 1%
TEPRO RW69 V122
16 ea

200 ohms, 1w
IRC 6248 RW59 V201
30 ea

500 ohms, 5w
TEPRO RW57G501
107 ea

887. Re: best magnetic/clip-style retaining screw/nut drivers?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 22:36:25 UTC
From: Stans4@americanisp.net
Message-ID: <20e34ee4.0402021436.4e44d7ee@posting.google.com>
Source record: 28922
Cross-posted to:
rec.radio.amateur.homebrew,rec.aviation.homebuilt,sci.electronics.repair,rec.crafts.metalworking,rec.woodworking

alanh_27@yahoo.com (Alan Horowitz) wrote in message
news:<1e3670a7.0402011424.55239a4b@posting.google.com>...
> the scenario is pulling out/putting in screws and nuts in orientations
> where gravity or tightquarters or awkwardness prevent a handhold on
> the item at moments that it has no retention by threads. Ie, at the
> end or at the beginning, gravity wants to make it fall down into bad
> places for it to be....
>
> Best magnetic or clip-style retaining screwdrivers, wrenches, socket
> sets?

For once in awhile use, a roll of masking tape does wonders. Tear off
a small chunk, poke your screw through it, tape it to the screwdriver.
Once the thing is started, tear off the tape. You can do the same
with nuts and nutdrivers. Not a production technique but handy
sometimes where you positively don't want to dismantle the object to
get a stray screw back. Even magnetic and clip types will lose a
screw if you bump them hard enough and sometimes the quarters are so
close that a magnetic tip will stick to the object more than to the
screw. For fishing stuff out, there's now rare-earth magnetic
grabbers with a high-powered LED in the center. Just ran across one
in the hardware store. I've used the wedge-fast slotted screw
starters and the Phillips screw starters, the masking tape beats them
both.

Stan

888. Re: Salvaged Computer Power Supplies

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 22:38:44 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <101tkbrqufuqkf5@corp.supernews.com>
Source record: 28923

It is possible to parallel supplies to add current capacity -- but only if the supply is built for it, and a PC power supply certainly isn't!

"Charlie" <nospam@nospam.com> wrote in message news:401e53c8_2@newspeer2.tds.net...
> Darn, thanks for straitening me out on how amperage cant be added together
> like voltage.
>
> Some good news is that each motor has a seperate power supply so the amps
> needed are 9
> or less.
>
> He intends to use current set resisters. Somewhere my freind picked up this
> advice:
>
>
> "Before you start, you must have a suitable step motor, a DC power supply
> suitable for the motor and a current set resistor. The motor's rated phase
> current must be between 1A and 7A, or 0.3A to 2A for the low current range.
> The power supply voltage must be between 4 times and 20 times the motor's
> rated voltage. The current set resistor may be a 1/4 Watt, 5% part. Finally
> have a STEP and DIRECTION pulse source available."
>
>
>
> "Allan Butler" <ka0ies@hotmail.com> wrote in message
> news:8TjTb.208699$na.340762@attbi_s04...
> > Charlie wrote:
> >
> > > Since I have these power supplies laying around, I can't resist asking.
> > > :)
> > >
> > > A friend is going to buy and/or build a robotic CNC setup for his plama
> > > torch.
> > > A system is $5000 complete or a mainboard and software can be purchased
> > > for $1500
> > > or so with him supplying the motors, power supply, etc.
> > >

> > > He says he needs 35 volt power supply with 35 amps.
> > >
> > > So if I wire together 12 power supplys (12v, 9a), voila, 36 volts at
36
> > > amps.
> > >
> > > Hehe, it can't be that easy can it?
> >
> > Nope.
> >
> > If you put three twelve volt power supplies in series the most that you
> can
> > get out of them is the same as the lowest current rating of the three
> power
> > supplies.
> >
> > If you had three 12 volt 35 amp power supplies then you could do the 35
> amp
> > 36 volt setup, if you isolated the power supplies from ground and made
> some
> > other modifications.
> >
> > Try to find a dedicated power supply that is actually designed to the
task
> > at hand.
> >
> > Al Butler
> > ka0ies
>
>

889. Re: Salvaged Computer Power Supplies

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 22:42:57 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <101tkjlepq4epb0@corp.supernews.com>
Source record: 28924

Check out Marlin P Jones (www.mpja.com). They have a number of surplus switching supplies -- they should have some 12V supplies that really _are_ 12, and are isolated so you can rope them up in series. I do not know if they have supplies that can go to 35 amps, but as you said in another post you can supply each motor seperately. I usually browse their site, then check out the supply manufacturer to see if the supply is still listed.

They _won't_ be as cheap as PC power supplies, but they _will_ give you a much greater chance of success, and the are cheaper than the same supplies new.

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

"Charlie" <nospam@nospam.com> wrote in message
news:401d3660_3@newspeer2.tds.net...
> Since I have these power supplies laying around, I can't resist asking.
:)
>
> A friend is going to buy and/or build a robotic CNC setup for his plama
> torch.
> A system is $5000 complete or a mainboard and software can be purchased
for
> $1500
> or so with him supplying the motors, power supply, etc.
>
> He says he needs 35 volt power supply with 35 amps.
>
> So if I wire together 12 power supplys (12v, 9a), voila, 36 volts at 36
> amps.
>
> Hehe, it can't be that easy can it?
>
>

890. Re: Salvaged Computer Power Supplies

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 22:59:48 UTC
From: Charlie <nospam@nospam.com>
Message-ID: <401ed519_3@newspeer2.tds.net>
Source record: 28929

Hmm, I didn't really look at the 5 volt specs. I'll do that.

"Paul Keinanen" <keinanen@sci.fi> wrote in message
news:70ct105cjbs5pbagfrm36eo9hra9r520oj@4ax.com...
> On Sun, 1 Feb 2004 11:30:10 -0600, "Charlie" <nospam@nospam.com>
> wrote:
>
> >
> >He says he needs 35 volt power supply with 35 amps.
> >
> >So if I wire together 12 power supplys (12v, 9a), voila, 36 volts at 36
> >amps.
>
> You might take seven identical power supplies, each capable of
> delivering at least 35 A from the 5 V line and connect them in series.
> However, you would have to disconnect the 0 V DC from chassis on each
> unit, so that the chassis of each power supply can be connected to the
> protective ground.
>
> If these are ATX power supplies, you would have to look at the startup
> sequence, if these power supplies do not go on-line, when the mains is
> applies. This may require some optoisolators.
>
> Paul OH3LWR
>

891. Re: 13.8 V power supply question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 22:59:53 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <bvmksicfq1@newshost.mot.com>
Source record: 28925

"John Popelish" <jpopelish@rica.net> wrote in message
news:401E5D63.6100E731@rica.net...
> Tfort wrote:
> >
> > On Mon, 02 Feb 2004 00:52:18 GMT, Uwe Langmesser
> > <outhouse@midcoast.com> wrote:
> >
> > >I need a 12-14 V power supply for my new 2m tranceiver. ...
> > >Uwe
> >
> > look at this...
> >
> > http://www.rason.org/Projects/powsupply/powsupply.htm
> >
> > Tracy
>
> It can be easily improved. Eliminate the two .1 ohm emitter resistors
> and connect one emitter to R6 and one to R7.

Good inputs, John. Yea. That is strange.

> Then replace R4 with a
> pair of resistors, one going to R6 and one to R7, to average the
> voltage from them to reproduce the current limit signal.

I'd say this is ok. Don't know how important. Haven't done a 723
regulator in a long time...

> You will
> have to double the value so that two in parallel have the same total
> effect. This change will not only eliminate two 10 watt resistors,
> but will improve the current sharing between Q2 and Q3....
> John Popelish

Remember. Cap input filters like this draw high peak current at the
peak of the sinewave when the caps get charged. It is not a sinewave
current waveform. Make sure that you have enough filter cap (& diode
capability) so that at the lowest point of the ripple on the filter caps you
still have voltage on the series pass transistors (the 3055's) which is
"enough" Here are some rough numbers, but should be close.
To figure how much drop you'll have with given caps or how much cap you
need to get a given drop you can use the formula I=C dV/dt where I is the
DC current (in amps), dVis the drop (in volts) you have room for over dt
which is about 7 miliseconds. Solve for C or V as appropriate.
The minimum cap voltage is somethign like 13.8 PLUS the drop across the
0.15s PLUS 2 volts for the darlington connected 3055's base and some left

over for collector voltage on the driver 3055. If I have it right that is: 13.8 + (7.5 x 0.15) + 2 (transistors 2 x Vbe) +2 (minimum driver Vcb) and this is at low line voltage.

I get around 13.8 + 1.2 + 2 + 2 = 19V. Oh yea, the transformer has to have 2V more to allow for the bridge diodes also. SO at 30-35 peak amps the xfmr needs to have 21 volts peak, if I did it right -- that's around 15V RMS (there is flatening of the peaks due to the peak current).

FYI:
On one I built, I wound a few extra turns on the transformer and added some diodes to provide the driver collector voltage. This was a 5V 30A supply and I was trying to minimize loss. When TTL was in vogue...

--
Steve N, K,9;d, c. i My email has no u's.

892. Re: Salvaged Computer Power Supplies

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 23:00:45 UTC
From: Charlie <nospam@nospam.com>
Message-ID: <401ed552_1@newspeer2.tds.net>
Source record: 28930

Thanks for your thoughts. I'll give Marlin P Jones a look!

"Tim Wescott" <tim@wescottnospamdesign.com> wrote in message
news:101tkjlepq4epb0@corp.supernews.com...
> Check out Marlin P Jones (www.mpja.com). They have a number of surplus
> switching supplies -- they should have some 12V supplies that really _are_
> 12, and are isolated so you can rope them up in series. I do not know if
> they have supplies that can go to 35 amps, but as you said in another post
> you can supply each motor seperately. I usually browse their site, then
> check out the supply manufacturer to see if the supply is still listed.
>
> They _won't_ be as cheap as PC power supplies, but they _will_ give you a
> much greater chance of success, and the are cheaper than the same supplies
> new.
>
> ---------------------------------------
> Tim Wescott
> Wescott Design Services
> http://www.wescottdesign.com
>
>
> "Charlie" <nospam@nospam.com> wrote in message
> news:401d3660_3@newspeer2.tds.net...
> > Since I have these power supplies laying around, I can't resist asking.
> :)
> >
> > A friend is going to buy and/or build a robotic CNC setup for his plama
> > torch.
> > A system is $5000 complete or a mainboard and software can be purchased
> for
> > $1500
> > or so with him supplying the motors, power supply, etc.
> >
> > He says he needs 35 volt power supply with 35 amps.
> >
> > So if I wire together 12 power supplys (12v, 9a), voila, 36 volts at 36
> > amps.
> >
> > Hehe, it can't be that easy can it?
> >
> >
>
>

893. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-02 23:12:43 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <bvmlkldha1@newshost.mot.com>
Source record: 28926

"Mike" <m.j.willis @rl.ac.uk> wrote in message
news:bvl2pd$ili@newton.cc.rl.ac.uk...
> In order to avoid the problems you have noted, find a thicker piece of
scrap
> material. Make a sandwich with your aluminium panel as the filler. Clamp
> together solidly as near to the hole position as possible. Drill through
the
> whole sandwich. It is the only way I know to drill neat holes in really
thin
> panels.

The extra sandwich material can be other aluminum OR hard wood,
dense fiber board, etc. Only trouble is that you can't see through to know
where you are drilling and must devise ways to line it up. A small pilot
hole in the top cover piece to line it up with a mark on the work.

The frozen water is a neat idea.

I have seen the uni-bit used on sheet metal ductwork & it makes clean holes,
but usually larger. Perhaps there are smaller ones.

HEY! Where do you get replacement thread-in tips for the old "automatic"
center punches, the spring loaded ones...slowly push until it pops ?
--
Steve N, K,9;d, c. i My email has no u's.

894. Re: 13.8 V power supply question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 00:02:39 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <401EE51F.E83CFE65@rica.net>
Source record: 28927

Steve Nosko wrote:
(snip)
> FYI:
> On one I built, I wound a few extra turns on the transformer and added some
> diodes to provide the driver collector voltage. This was a 5V 30A supply
> and I was trying to minimize loss. When TTL was in vogue...

That is a very good idea. You can do something like that very cheaply
by just providing a small extra filter cap that is fed by two extra
diodes, to make a positive supply that doesn't have the full ripple
sag of the big caps.

I would build the thing with a 15 or 16 volt transformer instead of
the 18 volt one specified, unless you have lots of trouble with low
line voltage.

If you do use an 18 volt one, you can lower the peak currents and cool
the transformer, capacitors and output transistors off by putting a
big resistor in series with the transformer primary, such that at full
load you just barely have enough DC to keep the regulator
functioning. You still get the heat, but it is dumped into a
resistor, instead of those other components. It also reduces the
current thump when you turn the thing on and have to both charge the
caps and handle transformer core saturation.

I think you can also improve the load transient response by putting a
10 ohm resistor across the output transistors, base to emitter, and a
100 ohm resistor base to emitter on the driver transistor. I haven't
calculated the closed loop frequency response of this design.

--
John Popelish

895. Re: best magnetic/clip-style retaining screw/nut drivers?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 00:22:01 UTC
From: Jeff Wisnia <jwisnia@conversent.net>
Message-ID: <101tqd2gsb9ah14@corp.supernews.com>
Source record: 28928
Cross-posted to:
rec.radio.amateur.homebrew,rec.aviation.homebuilt,sci.electronics.repair,rec.crafts.metalworking,rec.woodworking

Alan Horowitz wrote:

>the scenario is pulling out/putting in screws and nuts in orientations
>where gravity or tightquarters or awkwardness prevent a handhold on
>the item at moments that it has no retention by threads. Ie, at the
>end or at the beginning, gravity wants to make it fall down into bad
>places for it to be....
>
>Best magnetic or clip-style retaining screwdrivers, wrenches, socket
>sets?
>
>
Nobody's mentioned *nuts* yet. Here's my contribution on that part of
the problem:

For small nuts, say 2-56 through 10-32, just grab a length of 1/16"
diameter wire solder, lay its end across the flat of the nut and give it
a good squeeze with a pair of pliers. The solder will "flow" down into
the first thread of the nut and grab well enough so you can bend the
rest of the solder into whatever shape is required to put the nut where
it has to go.

Once the screw starts into the other side of the nut, a tug on the
solder releases it and you can usually get some sort of wrench or a
fingertip onto it for the rest of the tightening.

Jeff (Who's *not* gonna rant about crossposting...)

--
Jeff Wisnia (W1BSV + Brass Rat '57 EE)

"My luck is so bad that if I bought a cemetery, people would stop dying."

896. Re: Making PCBs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 00:56:29 UTC
From: DRGrok@munged.net
Message-ID: <401ef10a$0$8812$61fed72c@news.rcn.com>
Source record: 28931

In article <401d586b$0$16733$cc9e4d1f@news.dial.pipex.com>, aqzf13@dsl.pipex.com wrote:
>
>
>Dick wrote:
>> Thanks to the group for all the past advice given on PCB
>> drafting software & UV exposure boxes, it's all being put to good use.
>>
>> In the past I've used ferric chloride professionally as my
>> etchant (and left disposal of the etching solution to the work's
>> chemist) but now I'm doing things for myself safe disposal is going to
>> be my problem, searching on the web for an answer ammonium and sodium
>> persulphate come up as a suitable alternatives but not ones I've used.
>> Does anyone have experience of using persulphates as a D-I-Y PCB etchant
>> ? Are they as good as ferric chloride, are there any problems with using
>> them & how easy is it to dispose of the spent solution ?
>
>It's just as easy to dispose of as FeCl3. The solution doesn't keep very
>well, unlike FeCl3.
>
>Leon
Use CuCl2 + HCl. After etching the Cu 2+ (cupric) ion goes to Cu 1+
(cuprous). Bubbling air thru it oxidizes the cuprous back to cupric [you'll
know when its done because the cupric is a bright emerald green]. Disposal is
easy -- you don't dispose of it, just reuse.
Do a Google search for CuCl2 and PWB etching and you can find more details.

Dr. G.

897. Re: best magnetic/clip-style retaining screw/nut drivers?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 02:19:54 UTC
From: Eric Johnson <ej_sawmill@wisconsinoutback.com>
Message-ID: <AzDTb.23361$6n1.2146615332@twister2.starband.net>
Source record: 28932
Cross-posted to:
rec.radio.amateur.homebrew,rec.aviation.homebuilt,sci.electronics.repair,rec.crafts.metalworking,rec.woodworking

Want the best? Find your local Snap-on tools guy. There are several
alternatives suggested though.

898. Re: rf antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 02:30:10 UTC
From: JOE <HARMON14@hotmail.com>
Message-ID: <bvn2bt$u552r$1@ID-133475.news.uni-berlin.de>
Source record: 28934
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.homebrew

What other sorts of antennas are there exactly? Audio? Light?
Tactile?

Thought they ALL were RF in nature....

could be wrong....

JOE

"erdem" <ultanir_99@yahoo.com> wrote in message
news:c403e21f.0402020820.16e7c4a2@posting.google.com...
> Hi all,
>
> I am looking for rf antennas that could fit into a 1" by 1" plastic
> case, operating frequency >500Mhz. They could also be pcb antennas.
> Could you suggest me some places to lookfor?
>
> Thanks,
> Adam

899. PLL Interface

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 02:37:33 UTC
From: Y <sojos@sympatico.ca>
Message-ID: <401F096C.98047B34@hotmail.com>
Source record: 28933

Greetings!

I would like to know if anyone has been successful developing an interface for 3 wire serial feed to a PLL: (Clock, data, latch enable) using a PIC or similar devices. I presently use my computer to control my VFO. Software is the Code Loader from National.com It works very well. The speed of the Clock/Data appears to be high and I am wondering if a PIC could work at the same speed and/or produce the same rise time.!
If email is sent, please remove the xxx,

Jos! VE2AUC

900. Re: circuit equations for Pi & T networks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 03:22:40 UTC
From: art.young@inovonics.com
Message-ID: <cbdbf96e.0402021922.9d949c@posting.google.com>
Source record: 28935

Wes Stewart <n7ws@_arrl.net> wrote in message
news:<vd9t10tak3br6fvmaf09jkn3o797au7sia@4ax.com>...
> On 2 Feb 2004 10:04:45 -0800, artyoung@inovonics.com (Art Young)
> wrote:
>
> |I have not seen any equations for a Pi network where you can enter the
> |full complex number which would include the series resistance .
>
> The series resistance of what?
>
>>
The series resistance of the inductor along with its reactance.

in that each entry is a full complex number one could enter any series

resistance associated with it say a tuning cap.

THIS MESSAGE WAS MENT TO HAVE BEEN ADDED TO ONE ON 01.19.04 BY PatW.

I GUESS I FAT FINGERED THE KEYBOARD AND MESSED IT UP.

AC0F

901. panasonic CF-V21P laptop question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 03:38:42 UTC
From: hexter@blazenet.net
Message-ID: <101u5u24eb65ucc@corp.supernews.com>
Source record: 28936

Anyone here own a cf-v21p? Can you tell me the part number of the (your) 80mm mini cd-rom drive. Panasonic says they exist, but I can't find a listing to buy a new/used one. Can't even find a proper part number.

Any help or leads appreciated, TNX KD3SH

902. Re: Salvaged Computer Power Supplies

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 04:09:27 UTC
From: Bart <rmdscuba.removethis@yahoo.com>
Message-ID: <q67u10t6bvbkf4bss1842hfjpa4l5vu70u@4ax.com>
Source record: 28937

On Sun, 1 Feb 2004 11:30:10 -0600, "Charlie" <nospam@nospam.com>
wrote:

>Since I have these power supplies laying around, I can't resist asking. :)
>
Screw the CNC stuff..gut the old towers, put a piano hinge on the side
cover...insulate 'em (keep the PSU), add a peltier
{http://www.vibecomputers.com/index.cfm?loc=hardware&if=y&mcat=45&scat=00}
(power it with the old PSU& appropriate fans/heat sinks) and make a
"computer beer cooler"!
Make sure the front LEDs still work..so it looks like a real computer
when the boss walks around! ;-)

903. Re: rf antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 04:21:12 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.ONEDOT.org>
Message-ID: <401f2282_2@corp.newsgroups.com>
Source record: 28938
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.homebrew

JOE wrote:
> What other sorts of antennas are there exactly? Audio? Light?
> Tactile? Thought they ALL were RF in nature.... could be wrong....

Yep, you are wrong. Insects had antenna millions of years before man
ever walked the earth. In fact, the word "antenna" comes directly
from the insect world and was adopted for RF antennas, because they
reminded someone of insect antenna.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

904. Re: Best way to cut holes in aluminum panel? Label controls?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 04:27:12 UTC
From: averyfineman@aol.com
Message-ID: <20040202232712.01692.00000382@mb-m18.aol.com>
Source record: 28939

In article <401C84A2.D6A0ECBE@yahoo.com>, Paul Clay <mrvansk@yahoo.com> writes:

>What's the best way/tool to cut or drill holes 1/8 inch to 5/16 inch in
>diameter in thin gauge aluminum (for inserting potentiometers and
>phono, power jacks, etc.)? I've tried using just a power drill and
>genernal purpose drill bits and the results have been sort of ragged
>(the edges of the hole are ragged and the process of drilling creates a
>depression surrounding the drilled hole).

If it really is thin gauge aluminum, then I'd suggest a hand-operated
reamer to enlarge a hold from about 3/16" pilot hole. Those are
in general purpose tool stores and can typically go up to 1/2" dia.

Also, it builds up the lower arm muscles... :-)

>What's a good technique for labeling front panel controls on a piece of
>homebrew gear? Are there self adhesive labels or decals that
>stick/wear really well?

There are still decals and press-on lettering kits in the electronics
stores but I prefer a better (but takes longer) process to insure that
normal fingering doesn't scratch or rub off the markings. Get some
1/16" thick (or thereabouts) plexiglass, lucite, even Lexan sheet
and use that for an overlay. The real markings can be done via PC
and inkjet or laser printer, black on white, or white on black, or even
with color. The clear cover sheet keeps the markings clean and
unblemished.

Takes some care to drill the acrylic sheet though, most need slower
speed cuttings and careful clamping to avoid fracturing when cutting
to size. Pilot-hole drill both the overlay and the front panel with the
overlay clamped onto the panel to insure good justification.

Len Anderson
retired (from regular hours) electronic engineer person

905. Re: rf antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 04:49:11 UTC
From: W4JLE <w4jle@pbtcomm.net>
Message-ID: <bvn985$arlp$1@news3.infoave.net>
Source record: 28940
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.homebrew

That certainly would explain why the plural of the two different types are
different.

"Cecil Moore" <Cecil.A.Moore@ieee.ONEDOT.org> wrote in message
news:401f2282_2@corp.newsgroups.com...
> JOE wrote:
> > What other sorts of antennas are there exactly? Audio? Light?
> > Tactile? Thought they ALL were RF in nature.... could be wrong....
>
> Yep, you are wrong. Insects had antenna millions of years before man
> ever walked the earth. In fact, the word "antenna" comes directly
> from the insect world and was adopted for RF antennas, because they
> reminded someone of insect antenna.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 100,000 Newsgroups - 19 Different Servers! =-----

906. Re: rf antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 06:07:17 UTC
From: Brenda Ann <brendad@shinbiro.com>
Message-ID: <bvnb4e$4v4$1@news1.kornet.net>
Source record: 28941
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.homebrew

"W4JLE" <w4jle(remove to reply)@pbtcomm.net> wrote in message
news:bvn985$arlp$1@news3.infoave.net...
> That certainly would explain why the plural of the two different types are
> different.

I believe that both plurals (antennas and antennae) are correct. One is
simply the Latin plural, and the other the Anglicized plural.

907. Re: rf antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 06:28:48 UTC
From: W4JLE <w4jle@pbtcomm.net>
Message-ID: <bvnf2u$atcs$1@news3.infoave.net>
Source record: 28942
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Nope, antennae only applies to bugs, the devices used to receive radio waves
are antennas.

"Brenda Ann" <brendad@shinbiro.com> wrote in message
news:bvnb4e$4v4$1@news1.kornet.net...
>
> "W4JLE" <w4jle(remove to reply)@pbtcomm.net> wrote in message
> news:bvn985$arlp$1@news3.infoave.net...
> > That certainly would explain why the plural of the two different types
are
> > different.
>
> I believe that both plurals (antennas and antennae) are correct. One is
> simply the Latin plural, and the other the Anglicized plural.
>
>
>

908. Re: 13.8 V power supply question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 07:00:24 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <TV6k2LDIc0HAFAwR@ifwtech.co.uk>
Source record: 28946

John Popelish wrote:
>You still get the heat, but it is dumped into a resistor, instead of
>those other components.

I've seen that done, using a big metal-clad resistor. They bolted it to
the same heatsink as the transistors...

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

909. Re: PLL Interface

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 08:03:55 UTC
From: Tim Wescott <robintim@REMOVEccwebsterME.net>
Message-ID: <101uldqhpjclid8@corp.supernews.com>
Source record: 28943

The nice thing about the synchronous serial interface is that the transmitter can clock data out at whatever speed it wants to -- so you can bit-bang with the PIC with no problem.

You may want to check if your flavor of PIC has an SPI port -- they're designed to implement just that kind of interface.

--
Tim Wescott, KG7LI

"Y" <sojos@sympatico.ca> wrote in message
news:401F096C.98047B34@hotmail.com...
> Greetings!
>
> I would like to know if anyone has been successful developing an
> interface for 3 wire serial feed to a PLL: (Clock, data, latch enable)
> using a PIC or similar devices. I presently use my computer to control
> my VFO. Software is the Code Loader from National.com It works very
> well. The speed of the Clock/Data appears to be high and I am wondering
> if a PIC could work at the same speed and/or produce the same rise
> time.!
> If email is sent, please remove the xxx,
>
> Jos! VE2AUC
>

910. Re: 13.8 V power supply question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 13:46:16 UTC
From: Uwe Langmesser <outhouse@midcoast.com>
Message-ID: <BC451055.C395%outhouse@midcoast.com>
Source record: 28947

Wonderful, I might learn something here.
Here are some more details about the existing parts.

I use an existing center tapped transformer which gives twice 10.7 V. I also have 4 caps of 167 000mF at 7.5 V (which are currently hooked up for 15V max voltage) and two fat diodes. The transformer is probably good for 25 to 30A (it has a 3.5 X 4.5 X 6 inch core).

If the 15 V I get right now at my filter stage is barely enough for decent regulation I could double that (and also use a bridge rectifier) but then I would have to regulate that higher voltage down to the 13.8V I will most often use.

I looked at the design http://www.rason.org/Projects/powsupply/powsupply.htm that Tracy had suggested and it looks manageable to me (the Astron design someone suggested have additional windings on their transformers which I do not have on mine) but I do not have the expertise to change parts in the design to accommodate the higher voltage and current I could get out of my transformer. I am not sure if I only have to change the current limiting resisitor at the 723 as well as the resistors which determine the output voltage or if more elaborate changes involving the 2N3055's are necessary.

regards Uwe

in article 401EE51F.E83CFE65@rica.net, John Popelish at jpopelish@rica.net wrote on 2/2/04 7:02 PM:

> Steve Nosko wrote:
> (snip)
>> FYI:
>> On one I built, I wound a few extra turns on the transformer and added some
>> diodes to provide the driver collector voltage. This was a 5V 30A supply
>> and I was trying to minimize loss. When TTL was in vogue...
>
> That is a very good idea. You can do something like that very cheaply
> by just providing a small extra filter cap that is fed by two extra
> diodes, to make a positive supply that doesn't have the full ripple
> sag of the big caps.
>
> I would build the thing with a 15 or 16 volt transformer instead of
> the 18 volt one specified, unless you have lots of trouble with low
> line voltage.
>
> If you do use an 18 volt one, you can lower the peak currents and cool
> the transformer, capacitors and output transistors off by putting a
> big resistor in series with the transformer primary, such that at full

> load you just barely have enough DC to keep the regulator
> functioning. You still get the heat, but it is dumped into a
> resistor, instead of those other components. It also reduces the
> current thump when you turn the thing on and have to both charge the
> caps and handle transformer core saturation.
>
> I think you can also improve the load transient response by putting a
> 10 ohm resistor across the output transistors, base to emitter, and a
> 100 ohm resistor base to emitter on the driver transistor. I haven't
> calculated the closed loop frequency response of this design.

911. Re: rf antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 13:50:33 UTC
From: ultanir_99@yahoo.com
Message-ID: <c403e21f.0402030550.f92ac8d@posting.google.com>
Source record: 28948
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Actually I am not trying to design antennas (>500Mhz to 1Ghz- I guess
this gives you information about what sort they are), I am trying to
buy them on a pcb or small chips that could be mounted on a PCB.

Thanks,
Adam

"JOE" <HARMON14@hotmail.com> wrote in message
news:<bvn2bt$u552r$1@ID-133475.news.uni-berlin.de>...
> What other sorts of antennas are there exactly? Audio? Light?
> Tactile?
>
> Thought they ALL were RF in nature....
>
> could be wrong....
>
> JOE
>
>
> "erdem" <ultanir_99@yahoo.com> wrote in message
> news:c403e21f.0402020820.16e7c4a2@posting.google.com...
> > Hi all,
> >
> > I am looking for rf antennas that could fit into a 1" by 1" plastic
> > case, operating frequency >500Mhz. They could also be pcb antennas.
> > Could you suggest me some places to lookfor?
> >
> > Thanks,
> > Adam

912. Re: 30 meter beacon run this weekend

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 14:13:23 UTC
From: Dale Parfitt <par@parelectronics.com>
Message-ID: <70OTb.19$9a7.7@nwrddc02.gnilink.net>
Source record: 28949
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.shortwave

"Tom Sevart" <n2uhc@yahoo.nospam.com> wrote in message
news:bvfsh8$rvq4u$1@ID-52518.news.uni-berlin.de...
> My 30 meter 100 mW beacon is running now on 10.146 MHZ. Antenna is a 30
> meter inverted V. The beacon will be running until 1900Z tonight, then
all
> day tomorrow until about 0300Z.
>
> Please send reception reports to n2uhc@yahoo.com, please include UTC time
> you hear it and your location. Results to be posted later.
>
>Why not join the HiFer group on 13.555 MHz. I readily copy these 1-3mW
beacons both by ear and ARGO QRSS3.

Dale W4OP

913. Re: rf antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 15:17:22 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.ONEDOT.org>
Message-ID: <401fbc4d$1_3@corp.newsgroups.com>
Source record: 28950
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.homebrew

W4JLE wrote:
> That certainly would explain why the plural of the two different types are
> different.

My guess is that the plural for insect antennae came from Latin
and the plural for RF antennas came from a more modern language.
The word "antenna" entered the English language around 1646
from Middle Latin according to my dictionary. There were no
RF antennas in 1646, at least not on purpose.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

914. Re: rf antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 15:19:39 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.ONEDOT.org>
Message-ID: <401fbcd6$1_3@corp.newsgroups.com>
Source record: 28951
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Brenda Ann wrote:
> I believe that both plurals (antennas and antennae) are correct. One is
> simply the Latin plural, and the other the Anglicized plural.

My unabridged dictionary says that antennas is the plural of
RF antenna and antennae is the plural of insect antenna.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

915. NARSA Rally - is it is on ? YES !

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 18:47:40 UTC
From: Martin <admin@127.0.0.1>
Message-ID: <bvoqf9$da6$1$830fa17d@news.demon.co.uk>
Source record: 28952
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.homebrew,rec.radio.amateur.misc,uk.radio.amateur

The NARSA Electronics and Computer Rally is to be held
21st March at the Norbreck Castle - Norc-Olympia
Blackpool, Fylde, Lancashire.

Http://www.NARSA.org.uk

916. Re: 13.8 V power supply question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 20:18:11 UTC
From: jpopelish@rica.net
Message-ID: <855a1a14.0402031218.bdd74c4@posting.google.com>
Source record: 28953

Uwe Langmesser <outhouse@midcoast.com> wrote in message
news:<BC451055.C395%outhouse@midcoast.com>...
> Wonderful, I might learn something here.
> Here are some more details about the existing parts.
>
>
> I use an existing center tapped transformer which gives twice 10.7 V. I also
> have 4 caps of 167 000mF at 7.5 V (which are currently hooked up for 15V max
> voltage) and two fat diodes. The transformer is probably good for 25 to 30A
> (it has a 3.5 X 4.5 X 6 inch core).
>
> If the 15 V I get right now at my filter stage is barely enough for decent
> regulation I could double that (and also use a bridge rectifier) but then I
> would have to regulate that higher voltage down to the 13.8V I will most
> often use.
>
> I looked at the design http://www.rason.org/Projects/powsupply/powsupply.htm
> that Tracy had suggested and it looks manageable to me (the Astron design
> someone suggested have additional windings on their transformers which I do
> not have on mine) but I do not have the expertise to change parts in the
> design to accommodate the higher voltage and current I could get out of my
> transformer. I am not sure if I only have to change the current limiting
> resisitor at the 723 as well as the resistors which determine the output
> voltage or if more elaborate changes involving the 2N3055's are necessary.

This transformer is so close to the desired 13.8 volt output that I
would be tempted to use it unregulated. But you might want ot hang a
big 12 volt, 5 watt zener and a 10 ohm 2 watt resistor (in series)
across it to provide a minimum load. It will have some ripple
voltage, but it should do for most loads designed to operate from an
automotive charging system (which also has considerable variation).

If you want a regulated output, this transformer is not a very good
fit, unless you go with a switching regulator.

917. Re: PLL Interface

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 20:25:27 UTC
From: John Miles <jmiles@pop.removethistomailme.net>
Message-ID: <MPG.1a89a38ecd92f8079896a1@news-central.giganews.com>
Source record: 28954

In article <401F096C.98047B34@hotmail.com>, sojos@sympatico.ca says...
> Greetings!
>
> I would like to know if anyone has been successful developing an
> interface for 3 wire serial feed to a PLL: (Clock, data, latch enable)
> using a PIC or similar devices. I presently use my computer to control
> my VFO. Software is the Code Loader from National.com It works very
> well. The speed of the Clock/Data appears to be high and I am wondering
> if a PIC could work at the same speed and/or produce the same rise
> time.!
> If email is sent, please remove the xxx,
>
> Jos! VE2AUC
>

See the Atmel/Win32 multi-platform implementation of three-wire PLL programming at http://www.qsl.net/ke5fx/synth.html (direct link to the software at http://www.qsl.net/ke5fx/synth/synth100.zip).

It's in C++, which is not a problem for the higher-speed Atmel chips but might not be appropriate for a PIC.

-- jm

---
http://www.qsl.net/ke5fx
Note: My E-mail address has been altered to avoid spam
---

918. Re: bird dummy load construction..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 21:21:22 UTC
From: Tom <TomATSBRSdotORGdotUK>
Message-ID: <402010bf$0$29023$65c69314@mercury.nildram.net>
Source record: 28955

Bird or equivalents can be bought very reasonably :) even the 500W. Save the trouble and buy one :) Not much use after 1296Mhz though :(

"zindazenda" <zen@lineisp.co.uk> wrote in message news:1075576573.501877@smtp-1.griffin.com...
> well looking at a Bird 500w continious load, and it appears to me to be a
> horizontal ali tube..with lots of cooling fins prssed on..is this tube oil
> filled? if so pressure release valve???
>
> asking as i want to make a load that out preforms my heathkit cantenna..(in
> load capability) and am wondering if i can make a copy...
>
> simon g0zen
>
>

919. Re: best magnetic/clip-style retaining screw/nut drivers?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 22:01:25 UTC
From: Jack Erbes <jacker@midmaine.com>
Message-ID: <185020hp7ba0fps7ms5hvultqkogfu2m8g@4ax.com>
Source record: 28956
Cross-posted to:
rec.radio.amateur.homebrew,rec.aviation.homebuilt,sci.electronics.repair,rec.crafts.metalworking,rec.woodworking

On 1 Feb 2004 14:24:33 -0800, alanh_27@yahoo.com (Alan Horowitz)
wrote:

>the scenario is pulling out/putting in screws and nuts in orientations
>where gravity or tightquarters or awkwardness prevent a handhold on
>the item at moments that it has no retention by threads. Ie, at the
>end or at the beginning, gravity wants to make it fall down into bad
>places for it to be....
>
>Best magnetic or clip-style retaining screwdrivers, wrenches, socket
>sets?

For 1/4" hex screwdriver handles and bits http://www.brownells.com

Lifetime guarantee on the Brownells bits, they are replaced for free
it they break (shipped with your order for free, otherwise you pay the
postage).

For screw starters http://www.setools.com/sstarter.shtml

For the rest of it, a collection of 1/4" square drive extensions,
universal joints, and the like with a male 1/4" hex to male 1/4"
square adapter for the drive end and a 1/4" hex socket for the other
end. Also gender changers for the square to hex parts.

I have a collection of the spring loaded 8" to 10" long screw
starters, straight and Phillips, that were found at various industrial
surplus places. The link above will get you the same kind of tools
but the quality may be different. Mine are all refugees from the good
old days when things were Made In America and are either American or
Japanese made.

I have never had any problem with working around consumer level
electronics with screwdrivers with magnetized tips. I exercise a
reasonable caution and would not intentionally rest the tip on a IC or
component.

I keep a small super magnet stuck to the lid of one of metal tool
boxes and give many of my screwdrivers just enough strokes to pick up
the average screw when they have lost their magnetism.

When magnetizing screwdrivers, you have to start at one end and slide
the magnet off the other, then move it away and back to the starting
end for the next stroke. Using continuous contact and sliding it up
and down does not work well.

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

920. Re: PLL Interface

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 22:15:03 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <H3VTb.8165$IF1.6596@nwrdny03.gnilink.net>
Source record: 28957

I use the Melabs PicBasic Pro compiler (www.melabs.com) and do the coding in Basic. It's really quite easy. With a 4MHz PIC and a software 'bit-banger' routine, I'm loading my SPI-based DDS chip about 166Kbs.

Joe
W3JDR

"Y" <sojos@sympatico.ca> wrote in message
news:401F096C.98047B34@hotmail.com...
> Greetings!
>
> I would like to know if anyone has been successful developing an
> interface for 3 wire serial feed to a PLL: (Clock, data, latch enable)
> using a PIC or similar devices. I presently use my computer to control
> my VFO. Software is the Code Loader from National.com It works very
> well. The speed of the Clock/Data appears to be high and I am wondering
> if a PIC could work at the same speed and/or produce the same rise
> time.!
> If email is sent, please remove the xxx,
>
> Jos! VE2AUC
>

921. Re: ZL2BMI DSB transceiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 22:35:55 UTC
From: xrenfredm@xtra.co.nz
Message-ID: <40202173.1295699@news.xtra.co.nz>
Source record: 28958

Hi David. I have a copy of the back issue of Break In with this transceiver in it + some follow up data. I have thought of modifying it for 40M also. Seems to be a better circuit than some other simple dsb ones I have looked at. I will look up coil data for L1 and let you know. Maybe this can be a joint project and bounce some ideas around? Cheers, Renfred ZL1BDL

On Sun, 25 Jan 2004 12:29:58 -0000, "David Roper" <davidandpearl@m0dad.freeserve.co.uk> wrote:

>I am going to build the ZL2BMI DSB QRP transceiver. I would like to build
>this tx for 40M instead of 80M.
>I would like to know how many turns I would need on L1. I would be very
>interested to hear from anyone who has built this circuit or who has any
>back issues of this transceiver from Break-in Magazine.
>David (M0DAD).
>
>

Remove (X) from xrenfred for correct email address...thanks.

922. Testing ceramic tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 22:42:15 UTC
From: Bob P <nospam@nothanks.com>
Message-ID: <btVTb.36568$P%1.28674479@newssvr28.news.prodigy.com>
Source record: 28959

Acquired about a dozen 8122 ceramic tetrodes (400 Watt dissipation, 500 Mhz max) pulls from a broadband EMC amplifier. I have no use for them other than trades or ebay.
Anyways, I'm thinking to test these things for emission I make a socket adaptor from the 8122 to something octal that my Hickock tube tester might deal with say a 6146 and test it as such. Won't know pass / fail but at least I can get an idea if they are all about the same results and weed out any duds.
Anyone ever try such ?
Bob
kb8tl at arrl dot net

923. WTB: RG-133 coax

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 23:10:31 UTC
From: "R. Soetedjo" <robi@u.washington.edu>
Message-ID: <Pine.A41.4.58.0402031509140.213054@mead12.u.washington.edu>
Source record: 28960
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna

I'm looking for some RG-133 coax for building antenna phasing network?
Please email me if you have some.

tnx
rob

924. Re: 13.8 V power supply question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-03 23:19:48 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <bvpae2bfs1@newshost.mot.com>
Source record: 28965

"John Popelish" <jpopelish@rica.net> wrote in message
news:401EE51F.E83CFE65@rica.net...
> Steve Nosko wrote:
> (snip)
> > FYI:
> > On one I built, I wound a few extra turns on the transformer and added
some
> > diodes to provide the driver collector voltage. ...
>
> That is a very good idea. You can do something like that very cheaply
> by just providing a small extra filter cap that is fed by two extra
> diodes, to make a positive supply that doesn't have the full ripple
> sag of the big caps.

FYI: It was a 28 V supply when I started. I re-wound the secondary, I think
it was #10 wire, so a few extra turns of smaller wire (added to each end of
the secondary, as I recall) was a treat at the end.

> ...lower the peak currents and cool
> the transformer, capacitors and output transistors off by putting a
> big resistor in series with the transformer primary, such that at full
> load you just barely have enough DC to keep the regulator
> functioning. You still get the heat, but it is dumped into a
> resistor, instead of those other components.

This is interesting. I have to think about it. It'll slow the filter
cap charge time and lower and spread out the peak current.
T=RC and all that....

> It also reduces the
> current thump

I like that.
>
> I think you can also improve the load transient response by putting a
> 10 ohm resistor across the output transistors, base to emitter, and a
> 100 ohm resistor base to emitter on the driver transistor. I haven't
> calculated the closed loop frequency response of this design.
> John Popelish

Yikes! Shades of my final year in control theory. I don't think I
even bothered to look at this for the supply above.

--
Steve N, K,9;d, c. i My email has no u's.

925. Re: FS: Resistors (new, MILSPEC)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 01:28:34 UTC
From: k7itm@aol.com
Message-ID: <3200347.0402031728.293c20c1@posting.google.com>
Source record: 28961

Walter Treftz <pendragon@netsignia.net> wrote in message
news:<401EBC59.46F7CF23@netsignia.net>...
> FOR SALE:
> New, MILSPEC, metal film resistors.

You sure about that metal film part? At least some of the numbers you
listed are for wirewound...suspect most if not all are. Just don't
want someone to be disappointed in what they get.

Cheers,
Tom

926. Re: rf antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 01:31:25 UTC
From: Stephen Cowell <scowell@sbcglobal.net>
Message-ID: <NXXTb.780$4k3.466@newssvr23.news.prodigy.com>
Source record: 28962
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.homebrew

"erdem" <ultanir_99@yahoo.com> wrote in message
news:c403e21f.0402030550.f92ac8d@posting.google.com...
> Actually I am not trying to design antennas (>500Mhz to 1Ghz- I guess
> this gives you information about what sort they are), I am trying to
> buy them on a pcb or small chips that could be mounted on a PCB.

Your wavelength of interest is 3cm at a minimum...
you're trying to put them into a box smaller than
that.

How much gain should this antenna have? How
broad-banded does it have to be? How much
power does it have to handle? What kind of
polarization do I want? These are basic
questions you should answer.

--
Steve
KI5YG/EA
.

927. FS: New: 24 Pin Sockets and 40 Pin Sockets

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 01:52:56 UTC
From: jrakar@en.com
Message-ID: <10f72e79.0402031752.4426e88c@posting.google.com>
Source record: 28963

FS: New: 24 Pin Sockets and 40 Pin Sockets

==========

Lots of 100: New Burndy 24 Pin Sockets

The price is: The price is: $ 16.00 per lot of 100

which INCLUDES the UPS shipping cost

Check out more info and pics at:

http://www.jrakar.com/glw/electronics/sockets/24psock.htm

==========

Lots of 100: New 40 Pin Sockets

The price is: $ 17.00 per lot of 100

which INCLUDES the UPS shipping cost

Check out more info and pics at:

http://www.jrakar.com/glw/electronics/sockets/40psock.htm

Thanks,

Jerry

==========

Please also check out our other pages:

Main Electronic Components page at:
http://www.jrakar.com/glw/electronics/ec.htm

Capacitors for Sale page at:
http://www.jrakar.com/glw/electronics/caps.htm

Crystals for Sale page at:
http://www.jrakar.com/glw/electronics/crystals.htm

DIP Switches for Sale page at:
http://www.jrakar.com/glw/electronics/dipswitches.htm

ICs for Sale page at:
http://www.jrakar.com/glw/electronics/ics.htm

Relays for Sale page at:
http://www.jrakar.com/glw/electronics/relays.htm

Sockets for Sale page at:
http://www.jrakar.com/glw/electronics/sockets.htm

Main Web Page at: www.jrakar.com

:: Thank You ::

==========

928. Re: Testing ceramic tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 02:45:08 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <U0ZTb.54$213.41@edtnps89>
Source record: 28964

We on R.A.T. use those in keister-kickin' audio amps - how much? Would you consider trading for other tubes?

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

929. homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 14:31:08 UTC
From: James W <change-to-jw22-at-trlp-dot-com@trlp.com>
Message-ID: <10220hcqslg8892@corp.supernews.com>
Source record: 28966

When working with simple perfboard (just holes, no 'traces' connecting the holes) how does one connect the components together? I'm guessing by using jumper wires for point-to-point wiring on the backside, but that seems a bit ugly.

- jim

930. Re: PLL Interface

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 15:00:46 UTC
From: "Ed." <zapary7@hotmailxxx.com>
Message-ID: <4021091D.657D8C57@hotmailxxx.com>
Source record: 28968

From my point of view, a VFO completely independant of the personnal computer is desirable. This can be done with a PIC or other microprocessor with 2 thumbwheel switches for 99 channels (or frequencies) or a two digit display with up and down selection buttons. Ed!

John Miles wrote:

> In article <401F096C.98047B34@hotmail.com>, sojos@sympatico.ca says...
> > Greetings!
> >
> > I would like to know if anyone has been successful developing an
> > interface for 3 wire serial feed to a PLL: (Clock, data, latch enable)
> > using a PIC or similar devices. I presently use my computer to control
> > my VFO. Software is the Code Loader from National.com It works very
> > well. The speed of the Clock/Data appears to be high and I am wondering
> > if a PIC could work at the same speed and/or produce the same rise
> > time.!
> > If email is sent, please remove the xxx,
> >
> > Jos! VE2AUC
> >
>
> See the Atmel/Win32 multi-platform implementation of three-wire PLL
> programming at http://www.qsl.net/ke5fx/synth.html (direct link to the
> software at http://www.qsl.net/ke5fx/synth/synth100.zip).
>
> It's in C++, which is not a problem for the higher-speed Atmel chips but
> might not be appropriate for a PIC.
>
> -- jm
>
> --
> http://www.qsl.net/ke5fx
> Note: My E-mail address has been altered to avoid spam
> --

931. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 15:08:07 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <rV7Ub.15278$bn1.3735@nwrdny02.gnilink.net>
Source record: 28967

Unclad perf-board is generally used for wire-wrap applications only. To do wire-wrap work you need a wire-wrap tool and a roll of wire-wrap wire. Both are available at Radio Shack. You buy the type of IC sockets that have long wire-wrap pins. For leaded components, you either wrap directly to the leads or you put them in wire-wrap sockets.

Wire-wrap works OK for digital and low-freq analog work, but it doesn't work at all for SMT parts. You generally need a good copper ground plane for RF work.

Joe
W3JDR

"James W" <change-to-jw22-at-trlp-dot-com@trlp.com> wrote in message news:10220hcqslg8892@corp.supernews.com...
> When working with simple perfboard (just holes, no 'traces' connecting
> the holes) how does one connect the components together? I'm guessing by
> using jumper wires for point-to-point wiring on the backside, but that
> seems a bit ugly.
>
> - jim
>

932. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 15:45:25 UTC
From: James W <change-to-jw22-at-trlp-dot-com@trlp.com>
Message-ID: <10224slcfokluf2@corp.supernews.com>
Source record: 28969

Thanks... but one more question.. The boards I've seen have individual
copper pads that surround each hole. The pads do NOT interconnect holes.

If these are for wirewrap, why the copper pads at each hole?

- jim

p.s. I'm familiar with many fabrication techniques, I'm just trying to
figure out how one works with these particular boards.. i.e. why are
these boards so common and electronics stores.

W3JDR wrote:
> Unclad perf-board is generally used for wire-wrap applications only. To do
> wire-wrap work you need a wire-wrap tool and a roll of wire-wrap wire. Both
> are available at Radio Shack. You buy the type of IC sockets that have long
> wire-wrap pins. For leaded components, you either wrap directly to the leads
> or you put them in wire-wrap sockets.
>
> Wire-wrap works OK for digital and low-freq analog work, but it doesn't work
> at all for SMT parts. You generally need a good copper ground plane for RF
> work.
>
> Joe
> W3JDR
>
> "James W" <change-to-jw22-at-trlp-dot-com@trlp.com> wrote in message
> news:10220hcqslg8892@corp.supernews.com...
>
>>When working with simple perfboard (just holes, no 'traces' connecting
>>the holes) how does one connect the components together? I'm guessing by
>>using jumper wires for point-to-point wiring on the backside, but that
>>seems a bit ugly.
>>
>> - jim
>>
>
>
>

933. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 16:56:27 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <102291alkoqapef@corp.supernews.com>
Source record: 28970

I don't know what the manufacturer is thinking when they do that, but I find the solder pads very convenient for mechanically holding the componants to the board. With just wire wrap things slide around (and it didn't occur to me until _just now_ that I could have used glue).

I generally prefer dead-bug on a ground plane, or paying a few bucks to a quick-turn PCB house.

"James W" <change-to-jw22-at-trlp-dot-com@trlp.com> wrote in message news:10224slcfokluf2@corp.supernews.com...
> Thanks... but one more question.. The boards I've seen have individual
> copper pads that surround each hole. The pads do NOT interconnect holes.
>
> If these are for wirewrap, why the copper pads at each hole?
>
> - jim
>
> p.s. I'm familiar with many fabrication techniques, I'm just trying to
> figure out how one works with these particular boards.. i.e. why are
> these boards so common and electronics stores.
>
> W3JDR wrote:
> > Unclad perf-board is generally used for wire-wrap applications only. To do
> > wire-wrap work you need a wire-wrap tool and a roll of wire-wrap wire. Both
> > are available at Radio Shack. You buy the type of IC sockets that have long
> > wire-wrap pins. For leaded components, you either wrap directly to the leads
> > or you put them in wire-wrap sockets.
> >
> > Wire-wrap works OK for digital and low-freq analog work, but it doesn't work
> > at all for SMT parts. You generally need a good copper ground plane for RF
> > work.
> >
> > Joe
> > W3JDR
> >
> > "James W" <change-to-jw22-at-trlp-dot-com@trlp.com> wrote in message
> > news:10220hcqslg8892@corp.supernews.com...
> >
> >>When working with simple perfboard (just holes, no 'traces' connecting

> >>the holes) how does one connect the components together? I'm guessing by
> >>using jumper wires for point-to-point wiring on the backside, but that
> >>seems a bit ugly.
> >>
> >> - jim
> >>
> >
> >
> >
>

934. Re: Testing ceramic tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 16:58:29 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <10229543gr96ue7@corp.supernews.com>
Source record: 28971

Well, this is the second newsgroup where no one has told you how to test
them but has offered to buy them instead, so let me suggest a procedure:

- Sell the tubes to Gregg at a high percentage of the "tested" price.
- Promise to take back the bad ones.
- Count how many come back.

"Gregg" <nospam@unknown.org> wrote in message
news:U0ZTb.54$213.41@edtnps89...
> We on R.A.T. use those in keister-kickin' audio amps - how much? Would you
> consider trading for other tubes?
>
> --
> Gregg
> *It's probably useful, even if it can't be SPICE'd*
> http://geek.scorpiorising.ca

935. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 17:30:15 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <40212c27$0$3934$cc9e4d1f@news.dial.pipex.com>
Source record: 28972

James W wrote:

> When working with simple perfboard (just holes, no 'traces' connecting
> the holes) how does one connect the components together? I'm guessing by
> using jumper wires for point-to-point wiring on the backside, but that
> seems a bit ugly.

That's the usual way. If you just show people the front of the board it
doesn't matter if the back is untidy.

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

936. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 17:34:17 UTC
From: MR NO SPAM <NOSPAM@NOSPAM.COM>
Message-ID: <v2aUb.6254$5M.180545@dfw-read.news.verio.net>
Source record: 28973

I've seen people "solder" the leads on the backs of perf board too! While it works, it sure has a tendency to look sloppy! MNS

"Leon Heller" <aqzf13@dsl.pipex.com> wrote in message news:40212c27$0$3934$cc9e4d1f@news.dial.pipex.com...
>
>
> James W wrote:
>
> > When working with simple perfboard (just holes, no 'traces' connecting
> > the holes) how does one connect the components together? I'm guessing by
> > using jumper wires for point-to-point wiring on the backside, but that
> > seems a bit ugly.
>
> That's the usual way. If you just show people the front of the board it
> doesn't matter if the back is untidy.
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> Leon
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> My low-cost Philips LPC210x ARM development system:
> http://www.geocities.com/leon_heller/lpc2104.html
>

937. 4CX5000A

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 17:43:29 UTC
From: mail@catv-solutions.nl
Message-ID: <bfa23d16.0402040943.7beda11a@posting.google.com>
Source record: 28974

My name is Onno de Vries and i'm living in the Netherland and building
big amps is my hobby.
I just bought a 4CX 5000A on a radio market here for a good price (180
Euro) including socket.
Becourse the price was so good i took the challenge to build a 88-108
Mhz final from it.
After some experimenting i found out that the anode resonator a a bit
of a problem course of the high cappacity of the tube.
I try to do it with a double output coil (together Almost a half wave)
wich you see in manny designs for 144 Mhz amateur amps using for
example the russian tube GU84.
This works but it has a terrible efficiency,about 25%.
I hope that somebody can give me some Info about making a good and
high efficiend tank with this kind of tube.

Greetings.....Onno

938. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 17:45:26 UTC
From: Roger Gt <not@here.net>
Message-ID: <WcaUb.20120$Sc5.1453@newssvr27.news.prodigy.com>
Source record: 28975

"James W"
<change-to-jw22-at-trlp-dot-com@trlp.com> wrote in
message news:10220hcqslg8892@corp.supernews.com...
> When working with simple perfboard (just holes,
no 'traces' connecting
> the holes) how does one connect the components
together? I'm guessing by
> using jumper wires for point-to-point wiring on
the backside, but that
> seems a bit ugly.
>
> - jim

It is often done with wire on the backside of the
board.
Sometimes the perforated ground and power strips
from vector are used.
If there are a lot of connections, wiring is done
on the top, fed through and soldered on the back.
Wire can be grouped into routing channels and tied
to the board. (I use 4 pound Monofilament as a
tie.)

Vector board is not suitable for RF except for
very simple circuits.

939. Looking for a K2 builder

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 19:06:53 UTC
From: jotis <charles.river@rcn.com>
Message-ID: <402142cd$0$8378$61fed72c@news.rcn.com>
Source record: 28976

Hello-

I am looking for somebody to build a K2 (Elecraft) for me.

Can anybody recommend a good quality builder with plenty of test equipment
and experience?

Or if anybody in this ng builds K2's, please let me know.

Thanks and 73,

Joseph AJ1J

aj1j@arrl.net

940. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 19:10:58 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <bvrg42$91f$1@freenet9.carleton.ca>
Source record: 28978

"MR NO SPAM" (NOSPAM@NOSPAM.COM) writes:
> I've seen people "solder" the leads on the backs of perf board too! While it
> works, it sure has a tendency to look sloppy! MNS
>
Perfboard was around long before most hobbyists had heard of wire wrap.

Once transistors came along, perfboard tended to be the method of
construction, unless you were planning to do it point to point on
a chassis like you would with tubes. "Messy" has no relevance since
the wiring was under the board. You'd use component leads to connect
the parts, and if they weren't long enough, bits of wire. And the ones
with bits of copper at each hole had the advantage, as someone pointed
out, that you could solder the components to the board before adding
the wires.

People were hesitant to make their own etched circuit boards, and even
after they became fairly common in hobby circles, many would say "I don't
want to bother" and they'd stick with perfboard.

If perfboard faded from view in recent years, it's likely because
etched circuit boards have tended to take over, if not made by the hands
of the hobbyist then because people were buying premade circuit boards.

As someone pointed out, perfboard is not so great for RF. Better
to use a blank piece of copper circuit board, and build on top of
that, so you have the copper as a good ground point. But that's
likely "messier" than using perfboard with the wiring on the bottom.
But how something looks is irrelevant. You can stick it in a box
out of view. Building over circuit board actually works better than
perfboard, because it's easier to run wires in a three dimensional
space.

Of course, from time to time I've used copper circuit board
as "perfboard", drilling holes where needed and reaming out the copper
from around the holes so the components go in without shorting. Wire
up on the non-copper side of the board, like perfboard, but all
ground connections go to the copper on the top side.

Michael VE2BVW

> "Leon Heller" <aqzf13@dsl.pipex.com> wrote in message
> news:40212c27$0$3934$cc9e4d1f@news.dial.pipex.com...
>>
>>
>> James W wrote:
>>

>> > When working with simple perfboard (just holes, no 'traces' connecting
>> > the holes) how does one connect the components together? I'm guessing by
>> > using jumper wires for point-to-point wiring on the backside, but that
>> > seems a bit ugly.
>>
>> That's the usual way. If you just show people the front of the board it
>> doesn't matter if the back is untidy.
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>> Leon
>> --
>> Leon Heller, G1HSM
>> Email: aqzf13@dsl.pipex.com
>> My low-cost Philips LPC210x ARM development system:
>> http://www.geocities.com/leon_heller/lpc2104.html
>>
>
>

941. 433MHz tracker

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 19:19:25 UTC
From: stanandsue2000REMOVE@REMOVEyahoo.com
Message-ID: <4021432d.16891410@news.compuserve.com>
Source record: 28977

hello folks , hope someone can help me

i have built some 433MHz CW transmitters and used them for tracking model airplanes and stuff so I can find them if they get lost , the only ones i have built so far are only a couple of mW output , the company make they low power modules say no license is required for their use

ok , so now i want to build a higher power one for greater distance , thinking of using the linx modules which can either have 10mW or 50mW output at 433MHz CW

my questions

1) as power increases at some point i will need to get a technician class license , no problem as i will do that , but my question is at what power level is this required ? can you point me to where this is defined ?

2) i know building little transmitters for sale as a product requires an FCC registration number ... but building only a couple for your own use does not .. correct ? (if so hams couldn't ever build their own transmitters)

thanks for any assistance ... stan

942. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 19:33:35 UTC
From: MR NO SPAM <NOSPAM@NOSPAM.COM>
Message-ID: <nObUb.6256$5M.180702@dfw-read.news.verio.net>
Source record: 28980

Yes I agree. I suppose I should have said.. I've seen SOME sloppy work. IF one takes their time, they could do a neater job (trimming leads and touching with solder, not globs and such) and even then enclose it to make it look a bit more attractive. MNS

"Michael Black" <et472@FreeNet.Carleton.CA> wrote in message news:bvrg42$91f$1@freenet9.carleton.ca...
> "MR NO SPAM" (NOSPAM@NOSPAM.COM) writes:
> > I've seen people "solder" the leads on the backs of perf board too! While it
> > works, it sure has a tendency to look sloppy! MNS
> >
> Perfboard was around long before most hobbyists had heard of wire wrap.
>
> Once transistors came along, perfboard tended to be the method of
> construction, unless you were planning to do it point to point on
> a chassis like you would with tubes. "Messy" has no relevance since
> the wiring was under the board. You'd use component leads to connect
> the parts, and if they weren't long enough, bits of wire. And the ones
> with bits of copper at each hole had the advantage, as someone pointed
> out, that you could solder the components to the board before adding
> the wires.
>
> People were hesitant to make their own etched circuit boards, and even
> after they became fairly common in hobby circles, many would say "I don't
> want to bother" and they'd stick with perfboard.
>
> If perfboard faded from view in recent years, it's likely because
> etched circuit boards have tended to take over, if not made by the hands
> of the hobbyist then because people were buying premade circuit boards.
>
> As someone pointed out, perfboard is not so great for RF. Better
> to use a blank piece of copper circuit board, and build on top of
> that, so you have the copper as a good ground point. But that's
> likely "messier" than using perfboard with the wiring on the bottom.
> But how something looks is irrelevant. You can stick it in a box
> out of view. Building over circuit board actually works better than
> perfboard, because it's easier to run wires in a three dimensional
> space.
>
> Of course, from time to time I've used copper circuit board
> as "perfboard", drilling holes where needed and reaming out the copper
> from around the holes so the components go in without shorting. Wire
> up on the non-copper side of the board, like perfboard, but all

> ground connections go to the copper on the top side.
>
> Michael VE2BVW
>
> > "Leon Heller" <aqzf13@dsl.pipex.com> wrote in message
> > news:40212c27$0$3934$cc9e4d1f@news.dial.pipex.com...
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> >>
> >> James W wrote:
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> >> > When working with simple perfboard (just holes, no 'traces'
connecting
> >> > the holes) how does one connect the components together? I'm guessing
by
> >> > using jumper wires for point-to-point wiring on the backside, but
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> >> > seems a bit ugly.
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> >> That's the usual way. If you just show people the front of the board it
> >> doesn't matter if the back is untidy.
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> >> Leon
> >> --
> >> Leon Heller, G1HSM
> >> Email: aqzf13@dsl.pipex.com
> >> My low-cost Philips LPC210x ARM development system:
> >> http://www.geocities.com/leon_heller/lpc2104.html
> >>
> >
> >
>
>

943. Re: 433MHz tracker

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 19:34:14 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1022i95frl7ugf2@corp.supernews.com>
Source record: 28979

I think there's a lot of technically illegal radio building that's tolerated because it's not bothering anyone. Building your own 2mW transmitter and using it for fun is a lot like driving at 90mph on a deserted freeway -- they're both illegal, but if you do it well the law will look the other way. This is how we all got away with those AM transmitters on our RatShack 100-in-1 project kits when we were kids.

Building your own transmitters that are within the rules for unlicensed use is technically illegal but practically OK (see above). Amatuer operators are allowed to use our own equipment because we're presumed to know what we're doing by virtue of having passed the test for the license, and because the gov'ment knows that we're self-policed and will try to get violators to shape up on our own before anyone calls the FCC.

By all means go ahead and get a licence -- then you can not only dink with building a better beacon, but you can fly on 50MHz and (a) always have a frequency to yourself and (b) confuse everyone with your single-digit frequency flag.

If you do this then technically (there's that word again!) you'll have to rig the beacon up to send your call sign automatically at least every 10 minutes, but aside from the 100W power output this would be a good way of distinguishing _your_ beacon from everyone else's. You may be able to get away with putting a placard with your call sign on the aircraft, but I think that rule only covers the transmitter with which you're flying the plane.

"stan" <stanandsue2000REMOVE@REMOVEyahoo.com> wrote in message news:4021432d.16891410@news.compuserve.com...
> hello folks , hope someone can help me
>
> i have built some 433MHz CW transmitters and used them for tracking
> model airplanes and stuff so I can find them if they get lost , the
> only ones i have built so far are only a couple of mW output , the
> company make they low power modules say no license is required for
> their use
>
> ok , so now i want to build a higher power one for greater distance ,
> thinking of using the linx modules which can either have 10mW or 50mW
> output at 433MHz CW
>
> my questions
>
> 1) as power increases at some point i will need to get a technician
> class license , no problem as i will do that , but my question is at
> what power level is this required ? can you point me to where this

> is defined ?
>
> 2) i know building little transmitters for sale as a product requires
> an FCC registration number ... but building only a couple for your own
> use does not .. correct ? (if so hams couldn't ever build their own
> transmitters)
>
> thanks for any assistance ... stan
>

944. Re: 433MHz tracker

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 19:36:56 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <1022ier9am23782@corp.supernews.com>
Source record: 28981

Assuming you're in the U.S., you need a copy of Part 15 of the FCC rules, which deals with unlicensed transmitters among other things. I imagine it's on the web these days -- if not, it's available from the government printing office for a nominal charge.

Roy Lewallen, W7EL

stan wrote:
> hello folks , hope someone can help me
>
> i have built some 433MHz CW transmitters and used them for tracking
> model airplanes and stuff so I can find them if they get lost , the
> only ones i have built so far are only a couple of mW output , the
> company make they low power modules say no license is required for
> their use
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> ok , so now i want to build a higher power one for greater distance ,
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> 1) as power increases at some point i will need to get a technician
> class license , no problem as i will do that , but my question is at
> what power level is this required ? can you point me to where this
> is defined ?
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> 2) i know building little transmitters for sale as a product requires
> an FCC registration number ... but building only a couple for your own
> use does not .. correct ? (if so hams couldn't ever build their own
> transmitters)
>
> thanks for any assistance ... stan
>

945. Re: 433MHz tracker

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 19:49:44 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1022j6795r4i515@corp.supernews.com>
Source record: 28982

And the US government will refer to it as "Part 15 of CFR 47" -- CFR 47 being volume 47 of the code of federal regulations. If you get if from the gov'ment as a book it will come bound with other parts -- my 1992 set of CFR 47 has three volumes.

"Roy Lewallen" <w7el@eznec.com> wrote in message news:1022ier9am23782@corp.supernews.com...
> Assuming you're in the U.S., you need a copy of Part 15 of the FCC
> rules, which deals with unlicensed transmitters among other things. I
> imagine it's on the web these days -- if not, it's available from the
> government printing office for a nominal charge.
>
> Roy Lewallen, W7EL
>
> stan wrote:
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> > model airplanes and stuff so I can find them if they get lost , the
> > only ones i have built so far are only a couple of mW output , the
> > company make they low power modules say no license is required for
> > their use
> >
> > ok , so now i want to build a higher power one for greater distance ,
> > thinking of using the linx modules which can either have 10mW or 50mW
> > output at 433MHz CW
> >
> > my questions
> >
> > 1) as power increases at some point i will need to get a technician
> > class license , no problem as i will do that , but my question is at
> > what power level is this required ? can you point me to where this
> > is defined ?
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> > 2) i know building little transmitters for sale as a product requires
> > an FCC registration number ... but building only a couple for your own
> > use does not .. correct ? (if so hams couldn't ever build their own
> > transmitters)
> >
> > thanks for any assistance ... stan
> >
>

946. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 19:52:03 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <1022jb6mqooh994@corp.supernews.com>
Source record: 28983

A good way to connect the components is to simply bend the component leads over. Often, they're long enough to reach between connected components. If not, short bare wires can be added. It can be done quite neatly, and the result is very durable. But if beauty is important to you, you should probably go to the trouble of making a PCB.

This method shares a problem with conventional one- or two-sided non-ground plane PCBs in that proper bypassing and "grounding" requires some skill and knowledge. It's easy to end up with "ground" currents from multiple circuits sharing a common conductor, which can often lead to crosstalk and oscillation. This becomes more of a problem with increasing frequency, but because virtually all modern semiconductors have substantial gain at very high frequencies, it can still be a problem even when the operating frequency is low. I personally favor "ugly" construction, in which components are mounted over a solid ground plane. This reduces the impedance of inter-circuit ground connections so is considerably more forgiving of less-than-optimum layout.

Roy Lewallen, W7EL

James W wrote:
> When working with simple perfboard (just holes, no 'traces' connecting
> the holes) how does one connect the components together? I'm guessing by
> using jumper wires for point-to-point wiring on the backside, but that
> seems a bit ugly.
>
> - jim
>

947. Re: Looking for a K2 builder

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 19:57:13 UTC
From: Roger Leone <raleoneTAKEOUT@sbcglobal.net>
Message-ID: <t8cUb.20170$qc7.11819@newssvr27.news.prodigy.com>
Source record: 28984

Joseph:

Go to the Elecraft website (http://elecraft.com/) and on the left hand menu click "Builders For Hire"

73,

Roger K6XQ

948. Re: 433MHz tracker

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 20:17:19 UTC
From: dplatt@radagast.org
Message-ID: <1022kqfb9gt0s8b@corp.supernews.com>
Source record: 28985

In article <4021432d.16891410@news.compuserve.com>,
stan <stanandsue2000REMOVE@REMOVEyahoo.com> wrote:

>1) as power increases at some point i will need to get a technician
>class license , no problem as i will do that , but my question is at
>what power level is this required ? can you point me to where this
>is defined ?

The information you want is almost certainly in Title 47 of the Code
of Federal Regulations, Part 15. "This part sets out the regulations
under which an intentional, unintentional, or incidental radiator may
be operated without an individual license. It also contains the
technical specifications, administrative requirements and other
conditions relating to the marketing of part 15 devices."

http://www.access.gpo.gov/nara/cfr/waisidx_02/47cfr15_02.html

Take a look at section 15.209, which covers radiated emission limits
for "intentional" radiators. The limits are not defined in terms of
transmitter power, but in terms of the field strength at a specific
distance and frequency... this takes antenna gain into account.

In general, I'd guess that if you buy one of the little commercial
modules which is intended for Part 15 operation, and use it with the
sort of antenna that they recommend, you'd be safely within the
emission limits. If you add a gain antenna, or an outboard power
amplifier, you'll need to simulate and/or test to make sure that you
aren't exceeding the specified limits.

>2) i know building little transmitters for sale as a product requires
>an FCC registration number ... but building only a couple for your own
>use does not .. correct ? (if so hams couldn't ever build their own
>transmitters)

Several different sets of rules apply here, depending on whether
you're going to be justifying your use of the device under Part 15
(license-free) or Part 97 (Amateur Radio service).

For Part 15 operation:

Sec. 15.23 Home-built devices.

(a) Equipment authorization is not required for devices that are
not marketed, are not constructed from a kit, and are built in
quantities of five or less for personal use.

(b) It is recognized that the individual builder of home-built
equipment may not possess the means to perform the measurements

for determining compliance with the regulations. In this case, the builder is expected to employ good engineering practices to meet the specified technical standards to the greatest extent practicable. The provisions of Sec. 15.5 apply to this equipment.

For Part 97 (Amateur Radio): in general, it is _not_ necessary to have an FCC registration or certification to build or sell radio equipment intended for use in the Amateur Radio bands. In this case, the responsibility for the technical correctness of the equipment belongs to the amateur-radio operator who actually uses it, and not to the builder/seller. Amateur Radio is specifically designed as a service intended to support experimentation.

There are some exceptions, having mostly to do with high-power amplifiers and with equipment which could be used both on amateur bands and other bands (which generally _do_ require certification).

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

949. Re: 433MHz tracker

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 20:19:34 UTC
From: dplatt@radagast.org
Message-ID: <1022kum2skbm2e8@corp.supernews.com>
Source record: 28986

In article <1022i95frl7ugf2@corp.supernews.com>,
Tim Wescott <tim@wescottnospamdesign.com> wrote:

>I think there's a lot of technically illegal radio building that's tolerated
>because it's not bothering anyone. Building your own 2mW transmitter and
>using it for fun is a lot like driving at 90mph on a deserted freeway --
>they're both illegal, but if you do it well the law will look the other way.
>This is how we all got away with those AM transmitters on our RatShack
>100-in-1 project kits when we were kids.

>Building your own transmitters that are within the rules for unlicensed use
>is technically illegal but practically OK (see above).

Actually, as I read it, if you homebrew a system which stays within
the FCC Part 15 limits, it's perfectly legal. The rules have a
specific "no certification required" exception for systems which are
built for home use, not-from-a-kit, in small quantities.

>By all means go ahead and get a licence

Definitely!

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

950. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 20:43:34 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <zU682vC2lVIAFA8o@ifwtech.co.uk>
Source record: 28987

Michael Black wrote:

>Perfboard was around long before most hobbyists had heard of wire wrap.
>
>Once transistors came along, perfboard tended to be the method of
>construction, unless you were planning to do it point to point on a
>chassis like you would with tubes. "Messy" has no relevance since the
>wiring was under the board. You'd use component leads to connect the
>parts, and if they weren't long enough, bits of wire.

That's right...

Maybe it would help to give an example where plain perfboard was the best construction method. I recently built a small power distribution board which involved four 0.1in-pitch connector headers, a voltage regulator IC and a few passive components.

Why choose plain perfboard for this project? Mostly because the wiring underneath was going to be fairly complex, so hand-wiring was going to be the easiest way to make the board reasonably small. The advantage of hand-wiring is that you can have as many crossovers as you like, using insulated wire.

What other techniques didn't I choose? Even a double-sided PC board would have needed some jumpers, and wouldn't have been worth the effort for a one-off project. A single-sided PC board would have required lots of jumpers, and copper-strip perfboard (Veroboard/Vectorboard) would have been even worse.

So bare perfboard it was. The four headers were temporarily superglued onto the board, so they wouldn't fall out when the board was turned over to do the wiring. Under the board, I ran a common ground bus of 18SWG/16AWG tinned copper wire around all the headers. The other small components were pushed through the holes, and anchored by their leads as the various connections were made.

Most of the wiring was done point-to-point using the bare component leads. Crossovers were handled using kynar insulated wire - sold for wire-wrapping, but excellent for point-to-point soldered wiring too. By the time all the header pins had been soldered to, the headers were well anchored through the board and are very secure.

The whole thing looks quite tidy from the top. If neatness is important (and indeed, why not make a good job of it?) the main consideration is to cut the board cleanly and file off the ragged edges.

> And the ones with bits of copper at each hole had the advantage, as
>someone pointed out, that you could solder the components to the board
>before adding the wires.
>
>People were hesitant to make their own etched circuit boards, and even
>after they became fairly common in hobby circles, many would say "I
>don't want to bother" and they'd stick with perfboard.
>
Certainly... and as I just said, it's one of the preferred techniques
for one-off construction.

>If perfboard faded from view in recent years, it's likely because
>etched circuit boards have tended to take over, if not made by the
>hands of the hobbyist then because people were buying premade circuit
>boards.
>
Maybe plain perfboard just hasn't had much publicity. As an author, I
can see why: if it's a fairly basic 'follow these instructions' project,
then at the very least you're expected to design a PC board; but if it's
a project for experienced constructors, you don't need to tell them how
to build it. In either kind of article, plain perfboard probably doesn't
get a mention... but it's still there.

>As someone pointed out, perfboard is not so great for RF. Better to
>use a blank piece of copper circuit board, and build on top of that, so
>you have the copper as a good ground point.

Yep. The strengths of plain perfboard are for DC, audio and slow logic
circuits, and in the sheer versatility of hand-wiring underneath the
board.

>But that's likely "messier" than using perfboard with the wiring on the
>bottom.
>
>Of course, from time to time I've used copper circuit board as
>"perfboard", drilling holes where needed and reaming out the copper
>from around the holes so the components go in without shorting. Wire
>up on the non-copper side of the board, like perfboard, but all ground
>connections go to the copper on the top side.
>

If all the grounds are to the common top-side groundplane, it doesn't
look messy at all. The top-side looks very neat and the wiring
underneath is simplified by the absence of ground wires. Above all, the
RF performance will probably be very good.

For this kind of project, I very often use PCB design software to work
up the layout, but don't always etch a board. Just as often, I cut a
piece of single-sided board, tape a 1:1 printout of the PCB design onto
the board and use it as a drilling template. Then I hand-wire the
underside using the layout as a guide.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

951. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 21:23:19 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <1022plk37ona075@corp.supernews.com>
Source record: 28989

"Michael Black" <et472@FreeNet.Carleton.CA> wrote in message
news:bvrg42$91f$1@freenet9.carleton.ca...

> As someone pointed out, perfboard is not so great for RF. Better
> to use a blank piece of copper circuit board, and build on top of
> that, so you have the copper as a good ground point. But that's
> likely "messier" than using perfboard with the wiring on the bottom.
> But how something looks is irrelevant. You can stick it in a box
> out of view. Building over circuit board actually works better than
> perfboard, because it's easier to run wires in a three dimensional
> space.

If you look at the manhattan style work of Jim Kortge
(http://www.qsl.net/k8iqy/) or Chuck Adams (http://www.qsl.net/k7qo/) it's
hard to call it "messier".

Of course, few of us mortals can do the sort of work they can.

..

952. Re: PLL Interface

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 21:27:24 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <1022plkg9kcsb77@corp.supernews.com>
Source record: 28990

"Ed." <zapary7@hotmailxxx.com> wrote in message
news:4021091D.657D8C57@hotmailxxx.com...
> From my point of view, a VFO completely independant of the personnal
computer
> is desirable. This can be done with a PIC or other microprocessor with 2
> thumbwheel switches for 99 channels (or frequencies) or a two digit
display
> with up and down selection buttons. Ed!

While encoders can be found for upwards of fifty bucks, plenty of encoders that do a much nicer job than thumbwheel switches cost barely more than two. And why would you use a two digit display when a nice 8 digit LCD can be had for around five bucks, less if you're willing to hunt around. This stuff may have made sense when it was all going to be lashed together with 7400 series logic chips, but with a PIC or other processor, the encoder and LCD display is a lot easier, and usually cheaper, to say nothing of nicer.

..

953. Attn: Crystal Filter Designers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 21:29:25 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <VudUb.15683$bn1.14821@nwrdny02.gnilink.net>
Source record: 28988

I just posted "CrystalCalc" to the Downloads section of my web site (http://mysite.verizon.net/jdrocci/).

This nifty little Windows program calculates all the important motional parameters of a quartz crystal with information derived from a few simple measurements. Those of you who are designing crystal ladder filters per the Hayward (W7ZOI) or Hardcastle (G3JIR) methods might find this very useful.

This is first-cut code. I'd appreciate feedback.

Joe
W3JDR

954. Re: 433MHz tracker

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 21:47:46 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <bvrpdcrce1@newshost.mot.com>
Source record: 28991

Roy,

It has been a while since I read it, but isn't the bulk of the requirement a field strength number? I run a validation department and we measure field strength for our products. If there is a section of part 15 which gets specific (like I think the old 136 KHz part or the AM band where a power and antenna IS specified, then he's ok. Otherwise he'll have to measure field strength.

--
Steve N, K,9;d, c. i My email has no u's.

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:1022ier9am23782@corp.supernews.com...
> Assuming you're in the U.S., you need a copy of Part 15 of the FCC
> rules, which deals with unlicensed transmitters among other things. I
> imagine it's on the web these days -- if not, it's available from the
> government printing office for a nominal charge.
>
> Roy Lewallen, W7EL
>
> stan wrote:
> > hello folks , hope someone can help me
> >
> > i have built some 433MHz CW transmitters and used them for tracking
> > model airplanes and stuff so I can find them if they get lost , the
> > only ones i have built so far are only a couple of mW output , the
> > company make they low power modules say no license is required for
> > their use
> >
> > ok , so now i want to build a higher power one for greater distance ,
> > thinking of using the linx modules which can either have 10mW or 50mW
> > output at 433MHz CW
> >
> > my questions
> >
> > 1) as power increases at some point i will need to get a technician
> > class license , no problem as i will do that , but my question is at
> > what power level is this required ? can you point me to where this
> > is defined ?
> >
> > 2) i know building little transmitters for sale as a product requires
> > an FCC registration number ... but building only a couple for your own
> > use does not .. correct ? (if so hams couldn't ever build their own
> > transmitters)

> >
> > thanks for any assistance ... stan
> >
>

955. Re: 433MHz tracker

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 22:31:29 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1022slfscf0o8b4@corp.supernews.com>
Source record: 28993

Oh that's good to know. I have part 97 ('cause I'm KG7LI) and part 68 ('cause I occasionally work with phone equipment), but not part 15. I'll have to take a look sometime.

"Dave Platt" <dplatt@radagast.org> wrote in message news:1022kum2skbm2e8@corp.supernews.com...
> In article <1022i95frl7ugf2@corp.supernews.com>,
> Tim Wescott <tim@wescottnospamdesign.com> wrote:
>
> >I think there's a lot of technically illegal radio building that's tolerated
> >because it's not bothering anyone. Building your own 2mW transmitter and
> >using it for fun is a lot like driving at 90mph on a deserted freeway --
> >they're both illegal, but if you do it well the law will look the other way.
> >This is how we all got away with those AM transmitters on our RatShack
> >100-in-1 project kits when we were kids.
>
> >Building your own transmitters that are within the rules for unlicensed use
> >is technically illegal but practically OK (see above).
>
> Actually, as I read it, if you homebrew a system which stays within
> the FCC Part 15 limits, it's perfectly legal. The rules have a
> specific "no certification required" exception for systems which are
> built for home use, not-from-a-kit, in small quantities.
>
> >By all means go ahead and get a licence
>
> Definitely!
>
> --
> Dave Platt <dplatt@radagast.org> AE6EO
> Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
> I do _not_ wish to receive unsolicited commercial email, and I will
> boycott any company which has the gall to send me such ads!

956. Re: 433MHz tracker

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 22:40:48 UTC
From: stanandsue2000REMOVE@yahooREMOVE.com
Message-ID: <40217333.3047686@news.compuserve.com>
Source record: 28992

.. big thanks to everyone for their comments , i downloaded p15 & p97 and understand much better .

.. if i want to measure the output of my little transmitter i have a friend who has access to this neato little digital meter which displays .001-2000 uW/cm**2 , power field density or something (?) , ... mmm but the fcc paperwork describes field strength uV/M ?? ... scratchin my head ... stan

(er i guess i could just take the test and not worry about this since it is only a 50mW transmitter)

957. Cardmatic update & ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-04 23:21:57 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <1022vkt2tb42006@corp.supernews.com>
Source record: 28994
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

I've got one of my Hickok LS 15874 L2 Cardmatics going. I cleaned, lubed and realigned the switch matrix as well as other switches and also found a cold solder joint from a previous repair. About 100 of the switch matrix pins had what looked like old paper capacitor wax on them, very sticky! I took all the pins out, cleaned each one and the sockets. (An ultrasonic cleaner would have been nice.) It took several attempts to get the clearance correct, since the jam nut moved but I finally figured out a system. Now it appears to test tubes just fine but it still has one problem that escapes me and wonder if anyone would have any ideas. It responds per the manual to all test cards except card 9, Gm, Low Ib. About half the time card 9 will kick power off and I'm guessing it's because the meter kicks backwards below zero when button 2 is pressed When it doesn't I can adjust Low Ib per the manual and seems to work fine. However sometimes the meter needle doesn't go below zero enough to kick the power out but when this happens the Ib control has no effect! Any ides or tips appreciated.

73
hank wd5jfr

958. Re: 433MHz tracker

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 00:27:09 UTC
From: averyfineman@aol.com
Message-ID: <20040204192709.29815.00003109@mb-m21.aol.com>
Source record: 28995

In article <1022j6795r4i515@corp.supernews.com>, "Tim Wescott"
<tim@wescottnospamdesign.com> writes:

>And the US government will refer to it as "Part 15 of CFR 47" -- CFR 47
>being volume 47 of the code of federal regulations. If you get if from the
>gov'ment as a book it will come bound with other parts -- my 1992 set of CFR
>47 has three volumes.

Suggestion: Go to the FCC website and click the Office of Engineering
and Technology button (to the right). OET page will let you access
Part 15 rules directly instead of going to the Government Printing Office
site and doing small (free) downloads of any portion of Parts of the
Code of Federal Regulations.

My 1995 set of 47 C.F.R. was five volumes and cost $120. GPO has
branch offices in most of the larger cities of the USA. No shipping
charges. Individual volumes are available. Part 15 is still available
free over the Internet.

Len Anderson
retired (from regular hours) electronic engineer person

959. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 00:27:09 UTC
From: averyfineman@aol.com
Message-ID: <20040204192709.29815.00003108@mb-m21.aol.com>
Source record: 28996

In article <zU682vC2lVIAFA8o@ifwtech.co.uk>, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> writes:

>Michael Black wrote:
>
>>Perfboard was around long before most hobbyists had heard of wire wrap.
>>
>>Once transistors came along, perfboard tended to be the method of
>>construction, unless you were planning to do it point to point on a
>>chassis like you would with tubes. "Messy" has no relevance since the
>>wiring was under the board. You'd use component leads to connect the
>>parts, and if they weren't long enough, bits of wire.
>
>That's right...
>
>Maybe it would help to give an example where plain perfboard was the
>best construction method. I recently built a small power distribution
>board which involved four 0.1in-pitch connector headers, a voltage
>regulator IC and a few passive components.
>
>Why choose plain perfboard for this project? Mostly because the wiring
>underneath was going to be fairly complex, so hand-wiring was going to
>be the easiest way to make the board reasonably small. The advantage of
>hand-wiring is that you can have as many crossovers as you like, using
>insulated wire.
>
>What other techniques didn't I choose? Even a double-sided PC board
>would have needed some jumpers, and wouldn't have been worth the effort
>for a one-off project. A single-sided PC board would have required lots
>of jumpers, and copper-strip perfboard (Veroboard/Vectorboard) would
>have been even worse.
>
>So bare perfboard it was. The four headers were temporarily superglued
>onto the board, so they wouldn't fall out when the board was turned over
>to do the wiring. Under the board, I ran a common ground bus of
>18SWG/16AWG tinned copper wire around all the headers. The other small
>components were pushed through the holes, and anchored by their leads as
>the various connections were made.
>
>Most of the wiring was done point-to-point using the bare component
>leads. Crossovers were handled using kynar insulated wire - sold for
>wire-wrapping, but excellent for point-to-point soldered wiring too. By
>the time all the header pins had been soldered to, the headers were well
>anchored through the board and are very secure.

>
>The whole thing looks quite tidy from the top. If neatness is important
>(and indeed, why not make a good job of it?) the main consideration is
>to cut the board cleanly and file off the ragged edges.

Ian, I'm in perfect agreement with what you and Michael Black wrote.

I base that on working prototypes made for over three decades. It
seems as though perfboard has been around longer...:-)

One thing that all should remember: Electrons don't care about "neat"
construction. "Neat" gets something past inspectors, appeals to
customers, looks mighty fine and "professional" in photographs.
Electrons don't care for any of that. Fields and waves only care about
placement of conductors and nearby dielectric material.

>> And the ones with bits of copper at each hole had the advantage, as
>>someone pointed out, that you could solder the components to the board
>>before adding the wires.
>>
>>People were hesitant to make their own etched circuit boards, and even
>>after they became fairly common in hobby circles, many would say "I
>>don't want to bother" and they'd stick with perfboard.

Perf and hand wiring SAVES TIME. Homebrewing is about making
electronic things at home. Few of us have TIME at our disposal.

For relatively simple circuit arrangements, it would take me (somewhat
experienced) more time to sketch out a PCB foil pattern and check it
against a schematic than direct-wiring a perf-board circuit. A PCB
still has to be masked and etched and cleaned.

Printed circuit boards originally were a tremendous advantage in mass
production of electronics. It could physically hold components as well
as perfectly reproduce wiring paths...compared to the longer time needed
to mount (vacuum tube style) components and then hand-wire all the
connections, usually in several stages of wiring by different assemblers.
Production costs dropped considerably once all got through the
capital equipment expenditure for PCB machinery.

SMT got a big following because it was small...but also because it
cut down on production even more. Fewer holes to drill (sometimes
none) and the "baking" ovens didn't need as much maintenance as
the flow soldering machines did with peanut oil, cleaner and degreaser,
solder solutions. SMT took the basic PCB construction technique.

>Certainly... and as I just said, it's one of the preferred techniques
>for one-off construction.
>
>>If perfboard faded from view in recent years, it's likely because
>>etched circuit boards have tended to take over, if not made by the
>>hands of the hobbyist then because people were buying premade circuit
>>boards.

>>
>Maybe plain perfboard just hasn't had much publicity. As an author, I
>can see why: if it's a fairly basic 'follow these instructions' project,
>then at the very least you're expected to design a PC board; but if it's
>a project for experienced constructors, you don't need to tell them how
>to build it. In either kind of article, plain perfboard probably doesn't
>get a mention... but it's still there.

Perf with hand-wired "solder side" connections doesn't photograph
well. Image is important in magazine layout. :-)

>>As someone pointed out, perfboard is not so great for RF. Better to
>>use a blank piece of copper circuit board, and build on top of that, so
>>you have the copper as a good ground point.
>
>Yep. The strengths of plain perfboard are for DC, audio and slow logic
>circuits, and in the sheer versatility of hand-wiring underneath the
>board.

Right on! But...if one is familiar with RF layout through experience
and a "feel" for lead placement and lengths, perf can be used on
up to 70 MHz. That is NOT recommended for beginners who have
just memorized Ohm's Law.

At RCA EASD in the 1970s we regularly used Douglas Electronics
11-DE-1 boards for prototyping digital logic at equivalent clock rates
up to 10 MHz. Those held 12 DIPs had three-hole pads and #24 or
#26 insulated wire did the interconnects on the component side. A
44-pin edge contact allowed plug-in assembly and extenders. That
was most excellent for churning out 1- to 3-of-a-kind prototypes at up
to 150 cards per system. Techs could just follow a schematic and
hand-wire the cards...sort of "connect the dots" kind of operation.
Was very good with few errors done by anyone.

Douglas is still in business and the 11-DE-1 prototype board is still
available in the USA at about $12 each. A comparable Vector
Electronics prototype board is about the same price. I prefer the
Douglas since it is gold-flashed and a variant is available with a
ground plane on the component side.

>>But that's likely "messier" than using perfboard with the wiring on the
>>bottom.
>>
>>Of course, from time to time I've used copper circuit board as
>>"perfboard", drilling holes where needed and reaming out the copper
>>from around the holes so the components go in without shorting. Wire
>>up on the non-copper side of the board, like perfboard, but all ground
>>connections go to the copper on the top side.
>
>If all the grounds are to the common top-side groundplane, it doesn't
>look messy at all. The top-side looks very neat and the wiring
>underneath is simplified by the absence of ground wires. Above all, the

>RF performance will probably be very good.
>
>For this kind of project, I very often use PCB design software to work
>up the layout, but don't always etch a board. Just as often, I cut a
>piece of single-sided board, tape a 1:1 printout of the PCB design onto
>the board and use it as a drilling template. Then I hand-wire the
>underside using the layout as a guide.

I cheat a bit. Originally an illustrator, I sketch out the foil paths on
vellum 1:1, mark the drill holes and use the vellum as a small
center-punch guide. The paths are then painted in with lacquer,
free-hand, using the vellum as a guide. Lacquer can be peeled off
after etching with a sharp graphics knife (an X-Acto modeller's knife
to olde-tymers) and dissolved in acetone to be reused later.

Lacquer works fine with ferric chloride etchant. Enamel does NOT.
Enamels, now common in aircraft model shops can be undercut in
the etching. One has to really hunt for low-enough-price lacquer
now but it once was standard "dope" for modelers. I'm still using
a half-pint bottle of Testor's model airplane Dope obtained in 1947
(Testor's wisely changed the name slightly after that). Acetone in
pint can sizes is available in U.S. do-it-yourself stores. :-)

Len Anderson
retired (from regular hours) electronic engineer person

960. Re: 433MHz tracker

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 00:30:06 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <10233khl4na0rb9@corp.supernews.com>
Source record: 28847

Steve Nosko wrote:
> Roy,
>
> It has been a while since I read it, but isn't the bulk of the requirement a
> field strength number? I run a validation department and we measure field
> strength for our products. If there is a section of part 15 which gets
> specific (like I think the old 136 KHz part or the AM band where a power and
> antenna IS specified, then he's ok. Otherwise he'll have to measure field
> strength.
>
Yes, virtually all the part 15 specifications are field strength.
However, if the power is known, the field strength can often be
approximated by modeling or by making some assumptions about antenna
gain and efficiency. Accurate measurement of field strength isn't trivial.

Roy Lewallen, W7EL

961. Re: rf antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 00:33:22 UTC
From: ultanir_99@yahoo.com
Message-ID: <c403e21f.0402041633.6846c3f8@posting.google.com>
Source record: 28848
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.homebrew

I am trying to build rf transmitter and receiver that could transfer information (doors open closed, light on, etc, etc) from my car in the parking lot to my office desk. The distance is about 100m. I would like to have the receiver to be very small-key chain size. Therefore I thought high frequency might result in a smaller antenna. Most probably bandwidth will be very small (I do not need high speed data transfer). I am not sure about the polarization issue. About the power, that depends on the design, most probably. I am planning to use the IC from; http://www.maxim-ic.com/Wireless.cfm

Is it possible to do this kind of a device that small?

Adam

" Stephen Cowell" <scowell@sbcglobal.net> wrote in message news:<NXXTb.780$4k3.466@newssvr23.news.prodigy.com>...
> "erdem" <ultanir_99@yahoo.com> wrote in message
> news:c403e21f.0402030550.f92ac8d@posting.google.com...
> > Actually I am not trying to design antennas (>500Mhz to 1Ghz- I guess
> > this gives you information about what sort they are), I am trying to
> > buy them on a pcb or small chips that could be mounted on a PCB.
>
> Your wavelength of interest is 3cm at a minimum...
> you're trying to put them into a box smaller than
> that.
>
> How much gain should this antenna have? How
> broad-banded does it have to be? How much
> power does it have to handle? What kind of
> polarization do I want? These are basic
> questions you should answer.
> __
> Steve
> KI5YG/EA
> .

962. Re: Testing ceramic tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 01:43:12 UTC
From: Bob P <nospam@nospam.end>
Message-ID: <QchUb.130$t16.191791@newssvr28.news.prodigy.com>
Source record: 28849

Yeah, got no help. I think I'll just ebay them "as is" pulls
Bob

"Tim Wescott" <tim@wescottnospamdesign.com> wrote in message
news:10229543gr96ue7@corp.supernews.com...
> Well, this is the second newsgroup where no one has told you how to test
> them but has offered to buy them instead, so let me suggest a procedure:
>
> - Sell the tubes to Gregg at a high percentage of the "tested" price.
> - Promise to take back the bad ones.
> - Count how many come back.
>
> "Gregg" <nospam@unknown.org> wrote in message
> news:U0ZTb.54$213.41@edtnps89...
> > We on R.A.T. use those in keister-kickin' audio amps - how much? Would
you
> > consider trading for other tubes?
> >
> > --
> > Gregg
> > *It's probably useful, even if it can't be SPICE'd*
> > http://geek.scorpiorising.ca
>
>

963. Re: rf antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 01:55:57 UTC
From: Stephen Cowell <scowell@sbcglobal.net>
Message-ID: <NohUb.995$b13.39@newssvr23.news.prodigy.com>
Source record: 28850
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.homebrew

"erdem" <ultanir_99@yahoo.com> wrote in message
news:c403e21f.0402041633.6846c3f8@posting.google.com...
> I am trying to build rf transmitter and receiver that could transfer
> information (doors open closed, light on, etc, etc) from my car in the
> parking lot to my office desk. The distance is about 100m. I would
> like to have the receiver to be very small-key chain size. Therefore I
> thought high frequency might result in a smaller antenna. Most
> probably bandwidth will be very small (I do not need high speed data
> transfer). I am not sure about the polarization issue. About the
> power, that depends on the design, most probably. I am planning to use
> the IC from; http://www.maxim-ic.com/Wireless.cfm
>
> Is it possible to do this kind of a device that small?

Easily... as long as all it has to do is receive. You
can pump out 20W of UHF RF from your car, you'll
hear it without any antenna at all inside, probably.
Your concerns are path loss (not that much through
the walls of the building) and receiver antenna
inefficiency (the greater of the two, since you put
a small size limit).

Perhaps you're talking about this chip:

http://www.maxim-ic.com/view_press_release.cfm/release_id/932

Pretty impressive, I must say... looks like fun.

Keeping this On Topic for r.r.a.a, I'd start with
a piece of wire 1/4 wave long, run around the
perimeter of your device, as an antenna.

--
Steve
KI5YG/EA
.

PS Make sure that you address any legal considerations
about one-way automatic transmissions.

964. Bandwidth vs. Noise???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 02:36:24 UTC
From: hexter@blazenet.net
Message-ID: <1023b18chupojc1@corp.supernews.com>
Source record: 28854

Hey all,

My current I.F. bandwidth is 8mhz at the 6db points. I am looking at pulses of .8microseconds length, or about 1.25mhz. If all else remains the same, and I change the swamping resistors, and tweak the slugs for a 1.5mhz I.F. bandwidth at the 6db points, what increase in signal to noise ratio should I see?

TNX 73

965. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 02:36:42 UTC
From: Bob McConnell <rmcconne@NOSPAM.lightlink.com>
Message-ID: <4va3201kb30il2j0lc3nhqo926j0bvnu38@4ax.com>
Source record: 28853

On Wed, 04 Feb 2004 06:31:08 -0800, James W
<change-to-jw22-at-trlp-dot-com@trlp.com> wrote:

>When working with simple perfboard (just holes, no 'traces' connecting
>the holes) how does one connect the components together? I'm guessing by
>using jumper wires for point-to-point wiring on the backside, but that
>seems a bit ugly.
>
> - jim

I don't have a catalog anymore, but Vector used to make a variety of
pins, for both wire wrap and solder, that fit in their perfboards.
Punch in the pins, mount the components on them, run the connections
on the bottom and solder. They also had a wiring pencil that could be
used to run the connections. The wire had an insulation that would
melt when hit with solder. I wired up a couple of simple IC based
digital designs with one. I just used normal DIP sockets for the IC's.

Bob McConnell
N2SPP

966. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 03:03:42 UTC
From: The Eternal Squire <eternalsquire@comcast.net>
Message-ID: <EJKdnTYDufgxNrzdRVn-uw@comcast.com>
Source record: 28851

I'm using a very elegant "in-between" technique which combines the
flexibility of perfboard wire with the shielding and relative precision
advantages of copper-clad.

It's also very cheap!

I buy rolls of adhesive copper tape of various widths from a stained-glass
supplies store. I'll use the wide tape for covering one side of the PCB
with the ground plane. Then, on the other side, I'll construct traces of
the
size and placement that I want with small pieces of copper tape.

If I need to make a correction, I can usually add or cut away more foil.
If I need to join pieces of tape electrically, a small dab of solder along
the edge works nicely.

Copper tape allows me to do double sided work at will without the
need for chemicals or the danger of using an electric drill to rout away
copper.

I've been able to bang out one small circuit per weekend and usually get
it right the first time, if not the second.

Try it! You'll be pleasantly surprised.

The Eternal Squire

Roy Lewallen <w7el@eznec.com> wrote in message
news:1022jb6mqooh994@corp.supernews.com...
> A good way to connect the components is to simply bend the component
> leads over. Often, they're long enough to reach between connected
> components. If not, short bare wires can be added. It can be done quite
> neatly, and the result is very durable. But if beauty is important to
> you, you should probably go to the trouble of making a PCB.
>
> This method shares a problem with conventional one- or two-sided
> non-ground plane PCBs in that proper bypassing and "grounding" requires
> some skill and knowledge. It's easy to end up with "ground" currents
> from multiple circuits sharing a common conductor, which can often lead
> to crosstalk and oscillation. This becomes more of a problem with
> increasing frequency, but because virtually all modern semiconductors
> have substantial gain at very high frequencies, it can still be a
> problem even when the operating frequency is low. I personally favor
> "ugly" construction, in which components are mounted over a solid ground
> plane. This reduces the impedance of inter-circuit ground connections so
> is considerably more forgiving of less-than-optimum layout.
>

> Roy Lewallen, W7EL
>
> James W wrote:
> > When working with simple perfboard (just holes, no 'traces' connecting
> > the holes) how does one connect the components together? I'm guessing by
> > using jumper wires for point-to-point wiring on the backside, but that
> > seems a bit ugly.
> >
> > - jim
> >
>

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.564 / Virus Database: 356 - Release Date: 1/19/04

967. Re: Attn: Crystal Filter Designers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 03:05:27 UTC
From: The Eternal Squire <eternalsquire@comcast.net>
Message-ID: <LqadnQFYx5KLMbzdRVn-hQ@comcast.com>
Source record: 28852

Try placing the output of your crystal filter through a capacitive divider
back to the input. You'll get plenty of feedback that way! :)

The Eternal Squire

W3JDR <joe@roccis.com> wrote in message
news:VudUb.15683$bn1.14821@nwrdny02.gnilink.net...
> I just posted "CrystalCalc" to the Downloads section of my web site
> (http://mysite.verizon.net/jdrocci/).
>
> This nifty little Windows program calculates all the important motional
> parameters of a quartz crystal with information derived from a few simple
> measurements. Those of you who are designing crystal ladder filters per
the
> Hayward (W7ZOI) or Hardcastle (G3JIR) methods might find this very useful.
>
> This is first-cut code. I'd appreciate feedback.
>
> Joe
> W3JDR
>
>

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.564 / Virus Database: 356 - Release Date: 1/19/04

968. Re: Bandwidth vs. Noise???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 03:49:11 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1023f984qlnqf0@corp.supernews.com>
Source record: 28855

Is this an exam question?

If "tweaking" the slugs for a more than six times reduction in bandwidth doesn't break anything your signal/noise should go up by around 8dB -- you'll lose than 8dB of noise, but you'll also lose a bit of the signal's sidebands.

Your pulses will be way distorted, though.

Did I pass?

"gudmundur" <hexter@blazenet.net> wrote in message news:1023b18chupojc1@corp.supernews.com...
> Hey all,
>
> My current I.F. bandwidth is 8mhz at the 6db points. I am looking at pulses
> of .8microseconds length, or about 1.25mhz. If all else remains the same,
> and I change the swamping resistors, and tweak the slugs for a 1.5mhz I.F.
> bandwidth at the 6db points, what increase in signal to noise ratio should
> I see?
>
> TNX 73
>

969. Re: 433MHz tracker

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 06:28:28 UTC
From: Doug Smith W9WI <w9wi@invalid.invalid>
Message-ID: <4021E28C.6010603@invalid.invalid>
Source record: 28856

Roy Lewallen wrote:
> Assuming you're in the U.S., you need a copy of Part 15 of the FCC
> rules, which deals with unlicensed transmitters among other things. I
> imagine it's on the web these days -- if not, it's available from the
> government printing office for a nominal charge.

http://wireless.fcc.gov/rules.html (which has links to all Parts of the
FCC rules.)
--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com

970. Re: RG-133 coax

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 07:11:58 UTC
From: Crazy George <mNunsOch@atStglPobAal.nMet>
Message-ID: <4021ee22_2@news1.prserv.net>
Source record: 28857
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna

For the first time in a long time, I didn't bring my coax catalog with me in the field. What are the salient characteristics of 133?

Crazy George

"R. Soetedjo" <robi@u.washington.edu> wrote in message news:Pine.A41.4.58.0402031509140.213054@mead12.u.washington.edu...
> I'm looking for some RG-133 coax for building antenna phasing network?
> Please email me if you have some.
>
> tnx
> rob

971. Re: RG-133 coax

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 08:04:14 UTC
From: W4JLE <w4jle@pbtcomm.net>
Message-ID: <bvstdr$2coo$1@news3.infoave.net>
Source record: 28858
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna

95 Ohm coax

"Crazy George" <mNunsOch@atStglPobAal.nMet> wrote in message
news:4021ee22_2@news1.prserv.net...
> For the first time in a long time, I didn't bring my coax catalog with me
in
> the field. What are the salient characteristics of 133?
>
> Crazy George
>
>
> "R. Soetedjo" <robi@u.washington.edu> wrote in message
> news:Pine.A41.4.58.0402031509140.213054@mead12.u.washington.edu...
> > I'm looking for some RG-133 coax for building antenna phasing network?
> > Please email me if you have some.
> >
> > tnx
> > rob
>
>

972. Re: Designing a directional coupler for 2m & 70cm

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 10:32:33 UTC
From: St&#65533;phane Rey <sre_prolem@yahoo.com>
Message-ID: <40221bbf$1@news.deckpoint.ch>
Source record: 28859

Hey Tom,

Well, I've downloaded RFsim99 which allow to compute some microstrip or striplines couplers.
Unfortunately, all parameters are not taken into account line frequency or power.

I would appreciate if you could send me the scan of the mentionned pages.
Here is my mail : stephane.rey@netcourrier.com

The link from Wim seems very interresting to. I've to investigate more.

Thanks a lot for your support.

Regards

Stephane
F1TJJ

"Tom Bruhns" <k7itm@aol.com> wrote in message
news:3200347.0401311326.400fd89c@posting.google.com...
> OK...St&#65533;phane, would a scan of a couple articles still be helpful?
>
> I found the ARRL one last night, and also a similar but somewhat
> better one in the old RSGB/Jessop VHF/UHF manual. Guess I can scan
> both.
>
> And thank to Wim for the reference. It's one I'd seen before but had
> lost the link to, and appreciate having it again.
>
> Cheers,
> Tom
>
> "Tim Wescott" <tim@wescottnospamdesign.com> wrote in message
news:<101lmcjmudqio53@corp.supernews.com>...
> > I don't have a scanner, so if you help St&#65533;phane here he'll get something
> > useful.
> >
> > "Tom Bruhns" <k7itm@aol.com> wrote in message
> > news:3200347.0401301048.54c6670d@posting.google.com...
> ...
> > > If you don't get it somewhere else, I can scan and send the ARRL
> > > article on making an SWR meter using copper pipe fittings. I suppose
> > > they are US-standard fittings, but there should be reasonable
> > > equivalents in the civilized metric world.

973. Re: what will plug into a Fluke 87's test-lead jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 10:52:08 UTC
From: alanh_27@yahoo.com
Message-ID: <1e3670a7.0402050252.1961e50@posting.google.com>
Source record: 28860
Cross-posted to:
sci.electronics.equipment,sci.electronics.repair,alt.engineering.electrical,alt.engineering.maintenance,rec.radio.amateur.homebrew

> Standard Banana Plugs.

ok. Now, just out of curiosity, where to buy banana JACKS?

974. Re: Cardmatic update & ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 11:28:37 UTC
From: chris@airpump.com
Message-ID: <9123781c.0402050328.6551939b@posting.google.com>
Source record: 28861
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:<1022vkt2tb42006@corp.supernews.com>...
> I've got one of my Hickok LS 15874 L2 Cardmatics going. I cleaned, lubed
> and realigned the switch matrix as well as other switches and also found a
> cold solder joint from a previous repair. About 100 of the switch matrix
> pins had what looked like old paper capacitor wax on them, very sticky! I
> took all the pins out, cleaned each one and the sockets. (An ultrasonic
> cleaner would have been nice.) It took several attempts to get the
> clearance correct, since the jam nut moved but I finally figured out a
> system. Now it appears to test tubes just fine but it still has one problem
> that escapes me and wonder if anyone would have any ideas. It responds per
> the manual to all test cards except card 9, Gm, Low Ib. About half the time
> card 9 will kick power off and I'm guessing it's because the meter kicks
> backwards below zero when button 2 is pressed When it doesn't I can adjust
> Low Ib per the manual and seems to work fine. However sometimes the meter
> needle doesn't go below zero enough to kick the power out but when this
> happens the Ib control has no effect! Any ides or tips appreciated.
>
> 73
> hank wd5jfr

I told you if you moved those jam nuts at the bottom of the reader
you'd have fun! Have you replaced ALL of the electrolytic caps? Caps
could be the cause of what you are seeing. Plus--seems like there is
also an adjustment for the sensitivity of the circuit breaker in the
machine. There are something like 50+ cards to calibrate the
machine--went through all of those?

Chris

975. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 11:36:25 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <RWqUb.157$DG5.89@newsfep3-gui.server.ntli.net>
Source record: 28862

> Of course, from time to time I've used copper circuit board
> as "perfboard", drilling holes where needed and reaming out the copper
> from around the holes so the components go in without shorting. Wire
> up on the non-copper side of the board, like perfboard, but all
> ground connections go to the copper on the top side.
==========
Double sided copperclad board is a universal base for anything electronics including RF circuits.
I prefer the already mentioned 'dead bug' or 'ugly construction ' method where ICs are involved (legs up), with the legs to be earthed bent down and directly soldered to the board.
Earthed components serve as connection posts for other non-earthed circuit components. For connecting points free from earth I use a special 'island drill' ,a cylindric rotary bit covered with 'diamond grit' leaving a insulated 5mm diameter island to which up to 4 components can be joined.
Instead of the islands I also use small 0.25 Watt , 10 MOhm resistors with one end connected to ground ,the other end serving as post ,since many circuits have impedences 2 orders of magnitude lower than 10 MOhm.

All earthed components are soldered to other side of board via drilled holes ,hence are perpendicular to board face.

The 2 copper clad sides are joined either by multiple connections through drilled holes ,or all-around board edge copper wire/strip connection, the latter especially for vhf circuits.
I have no experience in UHF/microwave home brewing , but understand that single sided copper clad teflon board (thin) is normally used.

Frank GM0CSZ / KN6WH

976. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 11:55:15 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <RWqUb.158$DG5.85@newsfep3-gui.server.ntli.net>
Source record: 28863

> So bare perfboard it was. The four headers were temporarily superglued
> onto the board, so they wouldn't fall out when the board was turned over
> to do the wiring. Under the board, I ran a common ground bus of
> 18SWG/16AWG tinned copper wire around all the headers. The other small
> components were pushed through the holes, and anchored by their leads as
> the various connections were made.
==========
As far as superglue is concerned a warning !

Superglue is Cyanoacrylate , which if heated releases a very nasty gas which
really 'hits' you when inhaled.

Recently I superglued a component before doing some additional soldering
work around that component.
I now know I shall NEVER do that again.
Superglue is fine but not in a environment involving heat at soldering
level.

Frank GM0CSZ / KN6WH

977. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 13:16:16 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <rF$qi6BgIkIAFAOW@ifwtech.co.uk>
Source record: 28868

Frank Dinger wrote:
>> So bare perfboard it was. The four headers were temporarily superglued
>> onto the board, so they wouldn't fall out when the board was turned over
>> to do the wiring. Under the board, I ran a common ground bus of
>> 18SWG/16AWG tinned copper wire around all the headers. The other small
>> components were pushed through the holes, and anchored by their leads as
>> the various connections were made.
>===
>As far as superglue is concerned a warning !
>
>Superglue is Cyanoacrylate , which if heated releases a very nasty gas which
>really 'hits' you when inhaled.
>
>Recently I superglued a component before doing some additional soldering
>work around that component.
>I now know I shall NEVER do that again.
>Superglue is fine but not in a environment involving heat at soldering
>level.

I'm aware of that problem, but in the application I was suggesting, the
amount of superglue that can get heated by soldering is trivial.

There's no problem unless you are already inhaling flux fumes... so
"don't inhale."

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

978. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 13:42:07 UTC
From: Hans Summers <Hans.Summers@Tudor.Com>
Message-ID: <bvth7e$10dimf$1@ID-61331.news.uni-berlin.de>
Source record: 28864

I have ALWAYS used plain (no copper) perfboard for my digital circuits. It's point to point wiring but I don't leave the wiring on the underside of the board, I route it around on the upper side. I prefer this method because I find it looks nicer, and it gives easier access to the bottom of the board for soldering modifications, repairs etc. Overall I have found it provides a very reliable and compact construction.

I'm not entirely sure why I started building this way. My first big digital project started when I was aged 13 (http://www.hanssummers.com/electronics/clocks/sidereal/intro.htm) and this would've been when I first used the method. I didn't have any "mentor" to follow on digital circuit construction, I just came up with this method as the best available for what my resources were at the time, and have stuck with it ever since. I still believe it's the most appropriate for my circumstances (VERY limited hobby time etc).

There are many examples on my website (all my projects use this method), some good pictures to start with are at:

http://www.hanssummers.com/computers/newz80/intro.htm
http://www.hanssummers.com/electronics/equipment/spectrumanalyser2/index.htm

For RF work I tend to use "ugly", i.e. a groundplane PCB with the components anchored above. If extra mechanical stability is required at some points I use a very high value resistor or very tiny value capacitor (depending on what the circuit will allow without alteration of its performance).

I have never used a PCB, for several reasons, not least because as Len said, it can take longer to design and fabricate a PCB than to handwire a perfboard. The main reason for me is that a perfboard is easy to modify, a PCB isn't. This is useful when a design is finished if some modifications are required, but most importantly in my case it's vital because I never completely design a circuit before I begin constructing it, I just have a bare bones design in my head then start building it and design the finer details as I go.

73 Hans G0UPL
http://www.HansSummers.com

979. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 13:49:45 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <hVZoGvD5nkIAFAvI@ifwtech.co.uk>
Source record: 28869

Avery Fineman wrote:

> One thing that all should remember: Electrons don't care about "neat"
> construction. "Neat" gets something past inspectors, appeals to
> customers, looks mighty fine and "professional" in photographs.
> Electrons don't care for any of that. Fields and waves only care about
> placement of conductors and nearby dielectric material.
>
[...]
>
> Right on! But...if one is familiar with RF layout through experience
> and a "feel" for lead placement and lengths, perf can be used on
> up to 70 MHz. That is NOT recommended for beginners who have
> just memorized Ohm's Law.
>
Wish I knew how to pass on that "feel" for RF layout to other people.
It's easy to explain to someone why their existing layout doesn't work,
but more difficult to make positive recommendations so their next
attempt *will* work.

I once wrote an article about that for RadCom, which was lifted by the
ARRL Handbook and survived for some years as part of the Construction
chapter as 'From Schematic to Working Circuit'. That chapter, taken as a
whole, is a pretty good basic reference.

But in the end, there's no substitute for your own experience. Just
build and build and build. Notice what works, and what doesn't... and
then the trick is to understand why.

>>For this kind of project, I very often use PCB design software to work
>>up the layout, but don't always etch a board. Just as often, I cut a
>>piece of single-sided board, tape a 1:1 printout of the PCB design onto
>>the board and use it as a drilling template. Then I hand-wire the
>>underside using the layout as a guide.
>
> I cheat a bit. Originally an illustrator, I sketch out the foil paths on
> vellum 1:1, mark the drill holes and use the vellum as a small
> center-punch guide. The paths are then painted in with lacquer,
> free-hand, using the vellum as a guide.
>
The lack of those paper-graphics skills is why I use the PCB software.
Heck, I even use it for roughing-out stripboard layouts, to try to
maximize the use of the strips.

In Europe there's a gadget called a Dalo resist pen which is made
specifically for hand-drawing on PCBs. It has a fine fibre tip and very

thick, quick-drying ink. It's very expensive for what it is (namely a not very good fibre-tip pen) but with care it can be quite effective.

As many people already know, the Staedtler marker pens (waterproof/ wasserfest grade) are excellent for touching-up photo and iron-on resist patterns, but they're not as good as the Dalo for filling large areas.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

980. Re: what will plug into a Fluke 87's test-lead jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 13:54:49 UTC
From: "Keith R. Williams" <krw@attglobal.net>
Message-ID: <MPG.1a8c15359bf6a6fb989bbf@enews.newsguy.com>
Source record: 28865
Cross-posted to:
sci.electronics.equipment,sci.electronics.repair,alt.engineering.electrical,alt.engineering.maintenance,rec.radio.amateur.homebrew

In article <1e3670a7.0402050252.1961e50@posting.google.com>, alanh_27
@yahoo.com says...
> > Standard Banana Plugs.
>
>
> ok. Now, just out of curiosity, where to buy banana JACKS?
>
How about: http://www.jdr.com/interact/item.asp?itemno=BJ-B

--
Keith

981. Re: rf antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 14:57:23 UTC
From: Mikey <ki6pr@arrl.net>
Message-ID: <40210351_3@newsfeed.slurp.net>
Source record: 28866
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Adam, before you get all wound up over building a system from scratch, why not consult some security and alarm companies, and see what they have available...?

- KI6PR

"erdem" wrote
> I am trying to build rf transmitter and receiver that could transfer
> information (doors open closed, light on, etc, etc) from my car in the
> parking lot to my office desk. The distance is about 100m. I would
> like to have the receiver to be very small-key chain size. Therefore I
> thought high frequency might result in a smaller antenna. Most
> probably bandwidth will be very small (I do not need high speed data
> transfer). I am not sure about the polarization issue. About the
> power, that depends on the design, most probably. I am planning to use
> the IC from; http://www.maxim-ic.com/Wireless.cfm
>
> Is it possible to do this kind of a device that small?
>
> Adam
>
>
>
> " Stephen Cowell" <scowell@sbcglobal.net> wrote in message
news:<NXXTb.780$4k3.466@newssvr23.news.prodigy.com>...
> > "erdem" <ultanir_99@yahoo.com> wrote in message
> > news:c403e21f.0402030550.f92ac8d@posting.google.com...
> > > Actually I am not trying to design antennas (>500Mhz to 1Ghz- I guess
> > > this gives you information about what sort they are), I am trying to
> > > buy them on a pcb or small chips that could be mounted on a PCB.
> >
> > Your wavelength of interest is 3cm at a minimum...
> > you're trying to put them into a box smaller than
> > that.
> >
> > How much gain should this antenna have? How
> > broad-banded does it have to be? How much
> > power does it have to handle? What kind of
> > polarization do I want? These are basic
> > questions you should answer.
> > __
> > Steve
> > KI5YG/EA
> > .

982. re: test leads fluke

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 15:12:41 UTC
From: simpson_guy <simpson_guy@nospam.com>
Message-ID: <40225D68.B2BB7A87@nospam.com>
Source record: 28867

hi,

I know you want to make your own.

If you want a set of us gov military surplus leads with all the
connections
you'll ever need just do a ebay search for test lead military

you'll find a nice new set arout 7 bucks or so (don't pay more!)
universal test lead set by elwyn industries.

983. Re: Cardmatic update & ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 15:26:21 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <1024o52n32t9g24@corp.supernews.com>
Source record: 28870
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

Chris
I am guilty of not heeding your advice on the jam nut but it was not intentional mistake, it was the result of several attempts to get the parts back together. But a dope slap imigh tbe in order. I'm very impressed with engineering, design, and manufacture of the switch. Except for alignment, I don't see any need for improvements. I'd guess the facctory had a jig for aligment. I used a 13/64" allen wrench as a "feeler guage" after I determined what clearance was necessary to make sure all pins were out and how much they needed to go down so the female contacts would snap in the grooves of the pins. It took hours but the next time it will be quicker!
As far as the 54 test cards, I can't get proper readings on 1 thru 5 as my Cal. Cell is dead, or Card 9 but the rest are in spec! For the calibration cell Alan Douglas's book shows a 4.7 volt Zener while the USM-118 website has a 5.1 volt Zener and I'm trying to find out if the difference is important.. I think I may attempt to recharge the Cal. Cell mercury battery with my constant current source and see what happens.
The tube socket voltage and resistance readings pretty much agree with the data in the manual. All the electrolytics pass on my Dick Smith ESR meter.. I'm a rifleman not a shotgunner when it come to caps unless there is evidence that most of the caps are suxpect because of manufacturer or age. Besides, I like to know what component caused the fault. Next I think I'll let the unit hot soak for 24 hours and look at it with a scope.
It passes the breaker tests fine so I don't think relay needs adjustment. Since the Card 9 problem is not always repeatable it's difficult to pinpoint. What happens on Card 9 is sometimes the meter tries to go below zero and sometimes it kicks the unit off. I'm still trying to figure out how this Gm balance bridge circuit works. I've colored a set of schematics with Card 9 switches activiated and trying to get thru the maze to see if I can pinpoint the fault.
All that being said the Cardmatic is one hell of a design for a tube checker! I've got to get it going because I hve hundreds of tubes to check!
Any all tips appreciated.
73
hank wd5jfr

"Chris Haedt" <chris@airpump.com> wrote in message
news:9123781c.0402050328.6551939b@posting.google.com...
> "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:<1022vkt2tb42006@corp.supernews.com>...
> > I've got one of my Hickok LS 15874 L2 Cardmatics going. I cleaned,
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> > and realigned the switch matrix as well as other switches and also found
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> > cold solder joint from a previous repair. About 100 of the switch matrix
> > pins had what looked like old paper capacitor wax on them, very sticky!
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> > card 9 will kick power off and I'm guessing it's because the meter
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> > Low Ib per the manual and seems to work fine. However sometimes the
meter
> > needle doesn't go below zero enough to kick the power out but when this
> > happens the Ib control has no effect! Any ides or tips appreciated.
> >
> > 73
> > hank wd5jfr
>
> I told you if you moved those jam nuts at the bottom of the reader
> you'd have fun! Have you replaced ALL of the electrolytic caps? Caps
> could be the cause of what you are seeing. Plus--seems like there is
> also an adjustment for the sensitivity of the circuit breaker in the
> machine. There are something like 50+ cards to calibrate the
> machine--went through all of those?
>
> Chris

984. Re: Cardmatic update & ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 16:17:52 UTC
From: Chuck Harris <cfharris@erols.com>
Message-ID: <40226cb1$0$8369$61fed72c@news.rcn.com>
Source record: 28871
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

Henry Kolesnik wrote:
> Chris
> I am guilty of not heeding your advice on the jam nut but it was not
> intentional mistake, it was the result of several attempts to get the parts
> back together. But a dope slap imigh tbe in order. I'm very impressed with
> engineering, design, and manufacture of the switch. Except for alignment, I
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> grooves of the pins. It took hours but the next time it will be quicker!
> As far as the 54 test cards, I can't get proper readings on 1 thru 5 as
> my Cal. Cell is dead, or Card 9 but the rest are in spec! For the
> calibration cell Alan Douglas's book shows a 4.7 volt Zener while the
> USM-118 website has a 5.1 volt Zener and I'm trying to find out if the
> difference is important.. I think I may attempt to recharge the Cal. Cell
> mercury battery with my constant current source and see what happens.

Don't! At best, it won't work, at worst, it will explode. The mercury
cell is a one way reaction. It cannot be reversed.

Been there, tried that, blew it up!

-Chuck Harris

985. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 16:32:41 UTC
From: Hans Summers <Hans.Summers@Tudor.Com>
Message-ID: <bvtr7b$10v1gc$1@ID-61331.news.uni-berlin.de>
Source record: 28872

And here's another (very recent) example on my website, a 30m QRSS beacon see http://www.hanssummers.com/radio/qrss/, showing both perfboard construction for the digital circuits and "ugly" for the RF bits, in the same project.

Hans

"Hans Summers" <Hans.Summers@Tudor.Com> wrote in message news:bvth7e$10dimf$1@ID-61331.news.uni-berlin.de...
>
> I have ALWAYS used plain (no copper) perfboard for my digital circuits. It's
> point to point wiring but I don't leave the wiring on the underside of the
> board, I route it around on the upper side. I prefer this method because I
> find it looks nicer, and it gives easier access to the bottom of the board
> for soldering modifications, repairs etc. Overall I have found it provides a
> very reliable and compact construction.
>
> I'm not entirely sure why I started building this way. My first big digital
> project started when I was aged 13
> (http://www.hanssummers.com/electronics/clocks/sidereal/intro.htm) and this
> would've been when I first used the method. I didn't have any "mentor" to
> follow on digital circuit construction, I just came up with this method as
> the best available for what my resources were at the time, and have stuck
> with it ever since. I still believe it's the most appropriate for my
> circumstances (VERY limited hobby time etc).
>
> There are many examples on my website (all my projects use this method),
> some good pictures to start with are at:
>
> http://www.hanssummers.com/computers/newz80/intro.htm
>
http://www.hanssummers.com/electronics/equipment/spectrumanalyser2/index.htm
>
> For RF work I tend to use "ugly", i.e. a groundplane PCB with the components
> anchored above. If extra mechanical stability is required at some points I
> use a very high value resistor or very tiny value capacitor (depending on
> what the circuit will allow without alteration of its performance).
>
> I have never used a PCB, for several reasons, not least because as Len said,

> it can take longer to design and fabricate a PCB than to handwire a
> perfboard. The main reason for me is that a perfboard is easy to modify, a
> PCB isn't. This is useful when a design is finished if some modifications
> are required, but most importantly in my case it's vital because I never
> completely design a circuit before I begin constructing it, I just have a
> bare bones design in my head then start building it and design the finer
> details as I go.
>
> 73 Hans G0UPL
> http://www.HansSummers.com
>
>

986. Re: test leads fluke

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 16:54:08 UTC
From: Bob <balbert@access1.net>
Message-ID: <kf2dnYlg-bLX6L_dRVn2iA@ecrii.com>
Source record: 28873

I have a peculiar Simpson 260 that has recessed male test lead connectors.
Where can I get a set of test leads for this?

Bob

987. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 17:35:31 UTC
From: averyfineman@aol.com
Message-ID: <20040205123531.06226.00002714@mb-m19.aol.com>
Source record: 28874

In article <4va3201kb30il2j0lc3nhqo926j0bvnu38@4ax.com>, Bob McConnell
<rmcconne@NOSPAM.lightlink.com> writes:

>I don't have a catalog anymore, but Vector used to make a variety of
>pins, for both wire wrap and solder, that fit in their perfboards.
>Punch in the pins, mount the components on them, run the connections
>on the bottom and solder. They also had a wiring pencil that could be
>used to run the connections. The wire had an insulation that would
>melt when hit with solder. I wired up a couple of simple IC based
>digital designs with one. I just used normal DIP sockets for the IC's.

Vector Electronics has a website with catalog information on it.

The wire you are mentioning is like "SolderEze" or some name
similar to that, usually found in #26 AWG size. I've used it but
would just as soon go with ordinary Kynar insultaion wire-wrap
stuff. SolderEze tended to get abrasion of the insulation, resulting
in cross-circuiting. Especially so with heat.

I got spoiled with #24 and #26 Teflon insulated solid wire, strips
easily and never abrades the insultation.

Len Anderson
retired (from regular hours) electronic engineer person

988. Re: Bandwidth vs. Noise???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 17:35:31 UTC
From: averyfineman@aol.com
Message-ID: <20040205123531.06226.00002713@mb-m19.aol.com>
Source record: 28875

In article <1023b18chupojc1@corp.supernews.com>, hexter@blazenet.net (gudmundur) writes:

> My current I.F. bandwidth is 8mhz at the 6db points. I am looking at pulses >of .8microseconds length, or about 1.25mhz. If all else remains the same, >and I change the swamping resistors, and tweak the slugs for a 1.5mhz I.F. >bandwidth at the 6db points, what increase in signal to noise ratio should >I see?

Signal to noise ratio changes as the _square_root_ of bandwidth change. Wouldn't be much of an effect going from 1.25 to 1.5 MHz.

With 0.8 uSec pulses and a 1.25 to 1.5 MHz bandwidth (I presume Mega Hertz, not milli Hertz), the output envelope will be very rounded, almost Guassian or "cosine-quared" in shape. Rounding happens because of the limitation of passing the harmonics of the pulsed RF; all you have left is the carrier frequency.

The relatively narrow bandpass and pulse rounding MAY be okay in your application. It wasn't stated. I spent some years on a program that deliberately used 1 MHz bandwidth filters for 1 uSec wide pulses on carriers 1 MHz apart. Interesting to see the effect of "matched filters" on adjacent frequencies...those immediately on each side came through with a reduced amplitude "bow tie" envelope shape, the "knot" in the middle.

Len Anderson
retired (from regular hours) electronic engineer person

989. Re: Cardmatic update & ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 17:39:30 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <1024vuodj9mh15d@corp.supernews.com>
Source record: 28876
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

It's fixed, a new day respite helps. Previously I noticed that the component board had been removed at some time becasue I could see signs of resoldered wires on the non-component side. (At that time I found a cold solder joint on R231.) I thought perhaps a wire had come off or someone transposed some. Being lazy I got the high intensity light out and thought I could see if there was a problem without taking the board out, there's only 4 screws! But before doing that I thought I'd recheck the 10K ohm Gm bridge resistors, pot and as I was connecting my Fluke to the10K resistor lead I could see it was wrapped around the post but not soldered, same for all of them. Eureka and happiness, good light helps. I took a pix and posted it at alt.binaries.pictures.radio. I soldered 4 ends and now it works like a champ and checks a known good 12AX7 as good. No more meter slamming backwards on Card 9 or power kick off and the Lo Gm pot works per spec. After more careful inspection I could see where others have tried to repair this one because I could see other signs of soldering and component replacements, some not so good. Since it was like this from the factory, it had to have been continually intermittent and became a waster of gravity. Anyway I'll be it didn't get much use and I think the condition of the switch matrix with all the waxy stuff was becasue it was sprayed trying to solve the no solder problem. This one is Serial No. 703 so if you have one near that you might want to check R 402, 403, 404, and 406 for no solder!
73
hank wd5jfr

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:1022vkt2tb42006@corp.supernews.com...
> I've got one of my Hickok LS 15874 L2 Cardmatics going. I cleaned, lubed
> and realigned the switch matrix as well as other switches and also found a
> cold solder joint from a previous repair. About 100 of the switch matrix
> pins had what looked like old paper capacitor wax on them, very sticky! I
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> cleaner would have been nice.) It took several attempts to get the
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> the manual to all test cards except card 9, Gm, Low Ib. About half the
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> card 9 will kick power off and I'm guessing it's because the meter kicks
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> Low Ib per the manual and seems to work fine. However sometimes the

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> needle doesn't go below zero enough to kick the power out but when this
> happens the Ib control has no effect! Any ides or tips appreciated.
>
> 73
> hank wd5jfr
>
>

990. Re: Cardmatic update & ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 19:01:04 UTC
From: Jeffrey D Angus <jangus@socal.rr.com>
Message-ID: <QpwUb.7733$ow4.5271@twister.socal.rr.com>
Source record: 28877
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

Henry Kolesnik wrote:

> It's fixed, a new day respite helps.

Which just undescores what I've been telling my techs all
along. VERIFY everything before you start flogging the
assembly.

Jeff

--
"They that can give up essential liberty to obtain a little temporary
safety deserve neither liberty nor safety." Benjamin Franklin
"A life lived in fear is a life half lived."
Tara Morice as Fran, from the movie "Strictly Ballroom"

991. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 20:38:50 UTC
From: averyfineman@aol.com
Message-ID: <20040205153850.25815.00006424@mb-m07.aol.com>
Source record: 28878

In article <hVZoGvD5nkIAFAvI@ifwtech.co.uk>, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> writes:

>In Europe there's a gadget called a Dalo resist pen which is made
>specifically for hand-drawing on PCBs. It has a fine fibre tip and very
>thick, quick-drying ink. It's very expensive for what it is (namely a
>not very good fibre-tip pen) but with care it can be quite effective.
>
>As many people already know, the Staedtler marker pens (waterproof/
>wasserfest grade) are excellent for touching-up photo and iron-on resist
>patterns, but they're not as good as the Dalo for filling large areas.

I'll add something from the machine shop that is probably in
the UK as well: Marker lacquer used to make marks on metal
about to be machined. Over here it is usually a deep blue and
is very dilute lacquer, obvious from the acetone odor. Various
brands, some are available in red or green (not good colors).
Scribes nicely. Brushes well with small brushes available from
craft stores.

From the drafting department of old: K&E ink pens, the two-part
cylindrical, concentric ones. Those will hold dilute lacquers and
there is a pen holder that takes the nibs. Must soak them in
acetone after using since the capilliary clearance is tiny. With
practice those pens can draw straight lines but any dilute lacquer
likes to migrate to the straightedge...:-)

Office Depot and Office Max chains over here carry the Sanford
"Sharpie" pens (permanent marker type) whose ink is ferric
chloride resistant. I find it difficult to maintain a fine nib on those
for small foil lines and prefer a small brush. Mileage varies.

I once tried acetone-diluted liquid rosin as a resist, had mixed
results. Nice odor combination while doing it. :-)

As always, with any kind of resist, the unetched copper surface
must be clean and oxide free, smooth in order to take the resist
evenly.

Len Anderson
retired (from regular hours) electronic engineer person

992. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 20:54:47 UTC
From: MR NO SPAM <NOSPAM@NOSPAM.COM>
Message-ID: <v4yUb.6297$5M.184163@dfw-read.news.verio.net>
Source record: 28879

Have had reasonable success using the "Sharpies." What kicks me is way back when, when I bought a PCB kit from the Shack, I tried to make one and the ink came right off. I gave up - I was still young and stupid, but it was the ink that failed. A few years later, I decided to give it another go, using sharpies after reading some others having used them. I did nothing else different. The success was in the pen. Had I tried a different pen way back when, instead of giving up, I could have been very good at it by now, rather than OK. I have made a few PC boards and though "my" artistic talent isn't that great, the boards came out ok and work as intended. When I do decide to make a project, I actually enjoy going through the whole process including making the board. It is fun to go from nothing to a working item. I've made some test equipment for my shop that has saved me a few hours time already and paid for themselves in parts, time and effort. Just out of curiosity, anyone else buy the Shacks PCB kits and have any problems with the pens? OR solution? For me, the solution has been ok. MNS

"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040205153850.25815.00006424@mb-m07.aol.com...
> In article <hVZoGvD5nkIAFAvI@ifwtech.co.uk>, "Ian White, G3SEK"
> <G3SEK@ifwtech.co.uk> writes:
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> >In Europe there's a gadget called a Dalo resist pen which is made
> >specifically for hand-drawing on PCBs. It has a fine fibre tip and very
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> the UK as well: Marker lacquer used to make marks on metal
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> is very dilute lacquer, obvious from the acetone odor. Various
> brands, some are available in red or green (not good colors).
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> acetone after using since the capilliary clearance is tiny. With
> practice those pens can draw straight lines but any dilute lacquer
> likes to migrate to the straightedge...:-)

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> for small foil lines and prefer a small brush. Mileage varies.
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> I once tried acetone-diluted liquid rosin as a resist, had mixed
> results. Nice odor combination while doing it. :-)
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> As always, with any kind of resist, the unetched copper surface
> must be clean and oxide free, smooth in order to take the resist
> evenly.
>
> Len Anderson
> retired (from regular hours) electronic engineer person

993. Re: Cardmatic update & ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 21:09:49 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <1025c94g572m1f2@corp.supernews.com>
Source record: 28880
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

In this case the "assembler" needed flogging!

hank wd5jfr
"Jeffrey D Angus" <jangus@socal.rr.com> wrote in message
news:QpwUb.7733$ow4.5271@twister.socal.rr.com...
>
>
> Henry Kolesnik wrote:
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> > It's fixed, a new day respite helps.
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> Which just undescores what I've been telling my techs all
> along. VERIFY everything before you start flogging the
> assembly.
>
> Jeff
>
> --
> "They that can give up essential liberty to obtain a little temporary
> safety deserve neither liberty nor safety." Benjamin Franklin
> "A life lived in fear is a life half lived."
> Tara Morice as Fran, from the movie "Strictly Ballroom"
>

994. Re: Cardmatic update & ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 21:37:36 UTC
From: Lou deGonzague <nobody@nycap.rr.com>
Message-ID: <AIyUb.43723$%72.40707@twister.nyroc.rr.com>
Source record: 28881
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

This was a very interesting post Henry, I have one of these and it seems to be working OK. I have everything except the cal cell is dead. I would like to see a pic of those jam nuts that you shouldn't touch if possible as I thought about cleaning the card reader.
"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message news:1025c94g572m1f2@corp.supernews.com...
> In this case the "assembler" needed flogging!
>
> hank wd5jfr
> "Jeffrey D Angus" <jangus@socal.rr.com> wrote in message
> news:QpwUb.7733$ow4.5271@twister.socal.rr.com...
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> > Henry Kolesnik wrote:
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> > Tara Morice as Fran, from the movie "Strictly Ballroom"
> >
>
>

995. Re: what will plug into a Fluke 87's test-lead jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 22:10:50 UTC
From: James Sweet <jamessweet@hotmail.com>
Message-ID: <KbzUb.230426$xy6.1169093@attbi_s02>
Source record: 28882
Cross-posted to: sci.electronics.equipment,sci.electronics.repair,alt.engineering.electrical,alt.engineering.maintenance,rec.radio.amateur.homebrew

"Alan Horowitz" <alanh_27@yahoo.com> wrote in message
news:1e3670a7.0402050252.1961e50@posting.google.com...
> > Standard Banana Plugs.
>
>
> ok. Now, just out of curiosity, where to buy banana JACKS?

DigiKey has them in a full range of colors.

996. Re: Cardmatic update & ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 23:01:29 UTC
From: Alan Douglas <adouglasatgis.net>
Message-ID: <o3i520ddo1aqstk24uj0rair67o7ql4nig@4ax.com>
Source record: 28883
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

Hi,
The calibration cell simply verifies that the meter is 100
microamps and a total of 250 ohms. And it contains the limit resistors
for the leakage test. I wouldn't worry about it.

Incidentally I wouldn't use any silicone lubricants on the
card-reader pins. While the original organic grease has stiffened with
time and needed to be replaced, it was probably carefully selected to
do its job. On the Cardmatics I've repaired, I've used a grease
originally supplied to General Radio by Oak, but I have no idea where
to get more of it. It was described to me by the GR engineer who gave
me some, as "Beacon M325" grease.

73, Alan

997. FS: 2000: 50V 7.5pF Ceramic Capacitors :: $ 16 SHIPPED

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-05 23:58:54 UTC
From: jrakar@en.com
Message-ID: <10f72e79.0402051558.490d03fb@posting.google.com>
Source record: 28884

FS: 2000: 50V 7.5pF Ceramic Capacitors :: $ 16 SHIPPED

==========

Lots of 2000: 50V 7.5pF Radial Type Ceramic Capacitors

The price is: $ 16.00 per lot of 2000

which INCLUDES the UPS shipping cost

Check out more info and pics at:

http://www.jrakar.com/glw/electronics/capacitors/e7r5dcrcsr.htm

Thanks,

Jerry

==========

Please also check out our other pages:

Main Electronic Components page at:
http://www.jrakar.com/glw/electronics/ec.htm

Capacitors for Sale page at:
http://www.jrakar.com/glw/electronics/caps.htm

Crystals for Sale page at:
http://www.jrakar.com/glw/electronics/crystals.htm

DIP Switches for Sale page at:
http://www.jrakar.com/glw/electronics/dipswitches.htm

ICs for Sale page at:
http://www.jrakar.com/glw/electronics/ics.htm

Relays for Sale page at:
http://www.jrakar.com/glw/electronics/relays.htm

Sockets for Sale page at:
http://www.jrakar.com/glw/electronics/sockets.htm

Main Web Page at: www.jrakar.com

:: Thank You ::

==========

998. Re: Cardmatic update & ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 00:35:52 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <1025objd1cpg672@corp.supernews.com>
Source record: 28885
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

For noisy TV tuners back in the 1960s when I was working in a Radio and TV shop we used Lubriplate white grease that came in a small black and grey tube that resembled travel toothpaste.We sprayed the wafer switch in the tuner, rotated several times and then applied a light coating of Lubrplate with a small stick and rotated several more times. On turret tuners we cleaned the pads and wipers with contact cleaner on a Qtip and then applied Lubriplate. This was in Norman, Okla where the humidity played havoc with tuners making them intermittent and after the treatment we never had call backs. Somewhere I have a partial tube of this stuff but haven't located it as yet, so I used DeOxit on the Hickok switch matirix but would have used Lubriplate if I found it. After about more than 20 moves there's lots of possiblities where it is. Two local auto parts stores didn't have anything but silicone grease which I haven't used except as a heat transfer aid on power transistor heart sinks. I think that Lubriplate would be a good lubricant/protector unless there's something better that I don't know about. I'm guessing that there's something better after 40 yeats and would be interested in what users have used>
Now to repair number 2!
73
hank wd5jfr

"Alan Douglas" <adouglasatgis.net> wrote in message
news:o3i520ddo1aqstk24uj0rair67o7ql4nig@4ax.com...
> Hi,
> The calibration cell simply verifies that the meter is 100
> microamps and a total of 250 ohms. And it contains the limit resistors
> for the leakage test. I wouldn't worry about it.
>
> Incidentally I wouldn't use any silicone lubricants on the
> card-reader pins. While the original organic grease has stiffened with
> time and needed to be replaced, it was probably carefully selected to
> do its job. On the Cardmatics I've repaired, I've used a grease
> originally supplied to General Radio by Oak, but I have no idea where
> to get more of it. It was described to me by the GR engineer who gave
> me some, as "Beacon M325" grease.
>
> 73, Alan

999. What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 01:03:55 UTC
From: Dave <Devarim@hotmail.com>
Message-ID: <c88722f99e070f0dd405ad9e6fc50f36@news.meganetnews.com>
Source record: 28886
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

Hi all,

I just found several 829B tubes - believe it or not in my garage - I must have got them in a box of stuff at a ham fest at one time. A check on Ebay shows they're pretty much worthless for the sake of dollars, but they're so COOL! With the two plate caps that are actually just stiff pins, they look like little Martians.

I put a pair on my office credenza just to look geeky cool. Fresh out of the box as NOS they look amazing - just like they were made yesterday. It's a pity they have no value - maybe as a homebrew project??

So can someone tell me what they would have been used for? Something tells me they're a VHF power tube.

Any application as a one-tube QRP rig of any sort? Any stories about using them in the past? I've built a lot of little rigs over the years, but never knew about the 829

Thanks,

Dave

1000. Re: Bandwidth vs. Noise???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 01:26:28 UTC
From: k7itm@aol.com
Message-ID: <3200347.0402051726.2237ce09@posting.google.com>
Source record: 28887

averyfineman@aol.com (Avery Fineman) wrote in message
news:<20040205123531.06226.00002713@mb-m19.aol.com>...
> In article <1023b18chupojc1@corp.supernews.com>, hexter@blazenet.net
> (gudmundur) writes:
>
> > My current I.F. bandwidth is 8mhz at the 6db points. I am looking at pulses
> >of .8microseconds length, or about 1.25mhz. If all else remains the same,
> >and I change the swamping resistors, and tweak the slugs for a 1.5mhz I.F.
> >bandwidth at the 6db points, what increase in signal to noise ratio should
> >I see?
>
> Signal to noise ratio changes as the _square_root_ of bandwidth
> change. Wouldn't be much of an effect going from 1.25 to 1.5 MHz.

Um, he was starting with an 8MHz BW...
>
> With 0.8 uSec pulses and a 1.25 to 1.5 MHz bandwidth (I presume
> Mega Hertz, not milli Hertz), the output envelope will be very
> rounded, almost Guassian or "cosine-quared" in shape. Rounding
> happens because of the limitation of passing the harmonics of the
> pulsed RF; all you have left is the carrier frequency.

Yes, the pulses will certainly be rounded when they come out of the
filter (though they may have started that way anyway). But depending
on the filter type, they may also incur lots of ringing, and if the
pulses follow one after another at the right spacing, the phase of the
energy in the pulse relative to the phase of the energy left in the
filter will matter a whole lot in what you see coming out. The
trailing edge of a rectangular pulse fed through a Chebychev filter
isn't very Gaussian looking!

As for the original question, the answer depends on the spectral
distribution of the noise...if it happens to be strongly peaked at the
carrier frequency of the pulses, the narrowing won't make much
difference; if it happens to be peaked at some other frequency, it may
help a lot. If it's uniformly distributed, AND you keep the filter
shape the same and narrow the bandwidth by 1.5:8, then you will have
1.5/8 as much noise _power_. You'll also have somewhat less signal
power, depending on the shape of the pulses. And of course, the
filter won't get rid of noise that's introduced after the
filter--fairly obvious but sometimes overlooked.

Cheers,
Tom

1001. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 01:33:48 UTC
From: Roger Gt <not@here.net>
Message-ID: <0aCUb.9926$sx7.1573@newssvr29.news.prodigy.com>
Source record: 28888
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

"Dave" <Devarim@hotmail.com> wrote in message
news:c88722f99e070f0dd405ad9e6fc50f36@news.meganetnews.com...
> Hi all,
>
> I just found several 829B tubes - believe it or
not in my garage - I
> must have got them in a box of stuff at a ham
fest at one time.
> A check on Ebay shows they're pretty much
worthless for the sake
> of dollars, but they're so COOL! With the two
plate caps that are
> actually just stiff pins, they look like little
Martians.
>
> I put a pair on my office credenza just to look
geeky cool. Fresh
> out of the box as NOS they look amazing - just
like they were made
> yesterday. It's a pity they have no value -
maybe as a homebrew
> project??
>
> So can someone tell me what they would have been
used for?
> Something tells me they're a VHF power tube.
>
> Any application as a one-tube QRP rig of any
sort? Any stories
> about using them in the past? I've built a lot
of little rigs over the
> years, but never knew about the 829
>
> Thanks,
>
> Dave

The last rig I saw using an 829 was about 35 to 50
watts in the 50 to 70 MHZ range.
Makes a good 2 Meter amp.
Nice tube. Not QRP IMO...
I have three of them around here somewhere.

1002. Re: Bandwidth vs. Noise???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 01:38:31 UTC
From: hexter@blazenet.net
Message-ID: <1025s0n58au1f59@corp.supernews.com>
Source record: 28889

I went from 8 mhz to 1.5 mhz,,,,
As for breaking things, the wide i.f. was stagger tuned to achieve bandwidth
and swamped with resistors, I could chop the resistors, and retune, and get
25khz bandwidth if I wanted to. It is a short pulse radar i.f., and it will
be used in a long pulse application,,,

Therefore going from 8mhz at 6db edges to 1.5mhz at 6db edges is a must. Any
narrower, and I lose object resolution, any wider, and I amplify unwanted
and detrimental noise.

In article <20040205123531.06226.00002713@mb-m19.aol.com>, averyfineman@aol.com
says...
>
>In article <1023b18chupojc1@corp.supernews.com>, hexter@blazenet.net
>(gudmundur) writes:
>
>> My current I.F. bandwidth is 8mhz at the 6db points. I am looking at pulses
>>of .8microseconds length, or about 1.25mhz. If all else remains the same,
>>and I change the swamping resistors, and tweak the slugs for a 1.5mhz I.F.
>>bandwidth at the 6db points, what increase in signal to noise ratio should
>>I see?
>
> Signal to noise ratio changes as the _square_root_ of bandwidth
> change. Wouldn't be much of an effect going from 1.25 to 1.5 MHz.
>
> With 0.8 uSec pulses and a 1.25 to 1.5 MHz bandwidth (I presume
> Mega Hertz, not milli Hertz), the output envelope will be very
> rounded, almost Guassian or "cosine-quared" in shape. Rounding
> happens because of the limitation of passing the harmonics of the
> pulsed RF; all you have left is the carrier frequency.
>
> The relatively narrow bandpass and pulse rounding MAY be okay
> in your application. It wasn't stated. I spent some years on a
> program that deliberately used 1 MHz bandwidth filters for 1 uSec
> wide pulses on carriers 1 MHz apart. Interesting to see the effect
> of "matched filters" on adjacent frequencies...those immediately
> on each side came through with a reduced amplitude "bow tie"
> envelope shape, the "knot" in the middle.
>
> Len Anderson
> retired (from regular hours) electronic engineer person

1003. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 01:47:15 UTC
From: Uncle Peter <radioconnectionNO@cox.netSPAM>
Message-ID: <fmCUb.12231$gl2.8324@lakeread05>
Source record: 28890
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

"Dave" <Devarim@hotmail.com> wrote in message
news:c88722f99e070f0dd405ad9e6fc50f36@news.meganetnews.com...
> Hi all,
>
> I just found several 829B tubes - believe it or not in my garage - I
> must have got them in a box of stuff at a ham fest at one time.
> A check on Ebay shows they're pretty much worthless for the sake
> of dollars, but they're so COOL! With the two plate caps that are
> actually just stiff pins, they look like little Martians.
>

They are WWII military tubes. As you surmised, mostly for VHF
work. The smaller cousin was the 832B tube, used in the
SCR-522 transmitter (driver, PA stages). A very popular conversion
for 2-meter AM through the 50s and early 60s. The modern
version of the 829 is the 5894 power tube.

Pete

1004. Re: PLL Interface

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 01:55:09 UTC
From: Ed <zapary7@hotmailxxx.com>
Message-ID: <4022F3FD.F9BB7240@hotmailxxx.com>
Source record: 28891

Glad to hear about these encoders; is it possible to have info on manufacturer
to buy one? Ed.

xpyttl wrote:

> "Ed." <zapary7@hotmailxxx.com> wrote in message
> news:4021091D.657D8C57@hotmailxxx.com...
> > From my point of view, a VFO completely independant of the personnal
> computer
> > is desirable. This can be done with a PIC or other microprocessor with 2
> > thumbwheel switches for 99 channels (or frequencies) or a two digit
> display
> > with up and down selection buttons. Ed!
>
> While encoders can be found for upwards of fifty bucks, plenty of encoders
> that do a much nicer job than thumbwheel switches cost barely more than two.
> And why would you use a two digit display when a nice 8 digit LCD can be had
> for around five bucks, less if you're willing to hunt around. This stuff
> may have made sense when it was all going to be lashed together with 7400
> series logic chips, but with a PIC or other processor, the encoder and LCD
> display is a lot easier, and usually cheaper, to say nothing of nicer.
>
> ..

1005. Re: Cardmatic update & ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 02:50:02 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <c30620p68h6slsag35m9hfdk3rv479udqp@4ax.com>
Source record: 28892
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

On Thu, 5 Feb 2004 11:39:30 -0600 "Henry Kolesnik"
<wd5jfr@oklahoma.net> wrote:

>But before doing that I thought I'd recheck the 10K ohm Gm
>bridge resistors, pot and as I was connecting my Fluke to the10K resistor
>lead I could see it was wrapped around the post but not soldered, same for
>all of them.

Very nice going, but I'm not able to see your photos (server doesn't
have that newsgroup) so could you describe for the rest of us what
this connection looked like?

thanks,

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA

1006. BFO freq how far down SSB filter skirt?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 03:13:05 UTC
From: Tom Holden <holden_family@sympatico.ca>
Message-ID: <6CDUb.7045$ZN1.582640@news20.bellglobal.com>
Source record: 28895

ARRL Handbook says that the BFO frequency should be at the -20dB point down the skirt of the SSB filter. Pete, KE9OA, says -24dB.
1. What is the reasoning behind these choices?
2. How critical is it that the BFO be so positioned?
3. Wouldn't the shape factor have some bearing on where it should be?
4. Is linear interpolation between the -6 and -60dB points accurate enough to determine the BFO freq?

TIA,
Tom

1007. Re: PLL Interface

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 03:20:24 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <10261vtcb9ae81e@corp.supernews.com>
Source record: 28894

If you go to the DigiKey catalog (www.digikey.com) there are basically 4 manufacturers. Bournes makes some pricey ones, but they also make some small, low resolution encoders with no detents ($2.77). Pretty nice for some things. They also have a 24 pulse model for $4.86 which has very serious detents. Grayhill makes a number of encoders with fairly positive detents (series 25L, $4.70). Panasonic makes encoders with a kind of soft detent. They have a bazillion models now, ranging from 66 cents to $3.53. CTS also makes some, and I know I've used them, but I just can't remember much about them $2.58-$5.42.

None of these have the great feel of the $50 flavor, but you don't need that for a lot of things.

..

"Ed" <zapary7@hotmailxxx.com> wrote in message
news:4022F3FD.F9BB7240@hotmailxxx.com...
> Glad to hear about these encoders; is it possible to have info on
manufacturer
> to buy one? Ed.
>
> xpyttl wrote:
>
> > "Ed." <zapary7@hotmailxxx.com> wrote in message
> > news:4021091D.657D8C57@hotmailxxx.com...
> > > From my point of view, a VFO completely independant of the personnal
> > computer
> > > is desirable. This can be done with a PIC or other microprocessor with
2
> > > thumbwheel switches for 99 channels (or frequencies) or a two digit
> > display
> > > with up and down selection buttons. Ed!
> >
> > While encoders can be found for upwards of fifty bucks, plenty of
encoders
> > that do a much nicer job than thumbwheel switches cost barely more than
two.
> > And why would you use a two digit display when a nice 8 digit LCD can be
had
> > for around five bucks, less if you're willing to hunt around. This
stuff
> > may have made sense when it was all going to be lashed together with
7400
> > series logic chips, but with a PIC or other processor, the encoder and
LCD

> > display is a lot easier, and usually cheaper, to say nothing of nicer.
> >
> > ..
>

1008. Re: PLL Interface

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 04:01:10 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <akEUb.18434$KV5.653@nwrdny01.gnilink.net>
Source record: 28896

Here's an interesting approach:
http://www.hut.fi/~jwagner/electr/rotary-enc/
I have a small 'pancake' stepper that puts out 128 pulses per revolution and
it's silky smooth

Joe
W3JDR

"Ed" <zapary7@hotmailxxx.com> wrote in message
news:4022F3FD.F9BB7240@hotmailxxx.com...
> Glad to hear about these encoders; is it possible to have info on
manufacturer
> to buy one? Ed.
>
> xpyttl wrote:
>
> > "Ed." <zapary7@hotmailxxx.com> wrote in message
> > news:4021091D.657D8C57@hotmailxxx.com...
> > > From my point of view, a VFO completely independant of the personnal
> > computer
> > > is desirable. This can be done with a PIC or other microprocessor with
2
> > > thumbwheel switches for 99 channels (or frequencies) or a two digit
> > display
> > > with up and down selection buttons. Ed!
> >
> > While encoders can be found for upwards of fifty bucks, plenty of
encoders
> > that do a much nicer job than thumbwheel switches cost barely more than
two.
> > And why would you use a two digit display when a nice 8 digit LCD can be
had
> > for around five bucks, less if you're willing to hunt around. This
stuff
> > may have made sense when it was all going to be lashed together with
7400
> > series logic chips, but with a PIC or other processor, the encoder and
LCD
> > display is a lot easier, and usually cheaper, to say nothing of nicer.
> >
> > ..
>

1009. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 04:18:07 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <GMmdnYmNlpKTlb7dRVn-hA@ctc.net>
Source record: 28893
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

> I just found several 829B tubes - believe it or not in my garage - I
> must have got them in a box of stuff at a ham fest at one time.
> A check on Ebay shows they're pretty much worthless for the sake
> of dollars, but they're so COOL! With the two plate caps that are
> actually just stiff pins, they look like little Martians.
>
> I put a pair on my office credenza just to look geeky cool. Fresh
> out of the box as NOS they look amazing - just like they were made
> yesterday. It's a pity they have no value - maybe as a homebrew
> project??
>
> So can someone tell me what they would have been used for?
> Something tells me they're a VHF power tube.

They are about the same as a pair of 6146 tubes in one envelope but are more
efficient at higher frequencies.
Good for about 100 watts out at 2 meters and somewhat ueuable at 440 mhz.
I think the old VHV book had an amp in it for 144 mhz that was rated for
about 40 watts out on AM and more on CW/SSB.

1010. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 04:53:33 UTC
From: cornytheclown@hotmail.com
Message-ID: <8e8f59d4.0402052053.7e637bd0@posting.google.com>
Source record: 28797

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:<hVZoGvD5nkIAFAvI@ifwtech.co.uk>...
> Avery Fineman wrote:
>
>
> > One thing that all should remember: Electrons don't care about "neat"
> > construction. "Neat" gets something past inspectors, appeals to
> > customers, looks mighty fine and "professional" in photographs.
> > Electrons don't care for any of that. Fields and waves only care about
> > placement of conductors and nearby dielectric material.
> >
> [...]
> >
> > Right on! But...if one is familiar with RF layout through experience
> > and a "feel" for lead placement and lengths, perf can be used on
> > up to 70 MHz. That is NOT recommended for beginners who have
> > just memorized Ohm's Law.
> >
> Wish I knew how to pass on that "feel" for RF layout to other people.
> It's easy to explain to someone why their existing layout doesn't work,
> but more difficult to make positive recommendations so their next
> attempt *will* work.
>
> I once wrote an article about that for RadCom, which was lifted by the
> ARRL Handbook and survived for some years as part of the Construction
> chapter as 'From Schematic to Working Circuit'. That chapter, taken as a
> whole, is a pretty good basic reference.
>
> But in the end, there's no substitute for your own experience. Just
> build and build and build. Notice what works, and what doesn't... and
> then the trick is to understand why.
>
>
>
>
> >>For this kind of project, I very often use PCB design software to work
> >>up the layout, but don't always etch a board. Just as often, I cut a
> >>piece of single-sided board, tape a 1:1 printout of the PCB design onto
> >>the board and use it as a drilling template. Then I hand-wire the
> >>underside using the layout as a guide.
> >
> > I cheat a bit. Originally an illustrator, I sketch out the foil paths on
> > vellum 1:1, mark the drill holes and use the vellum as a small
> > center-punch guide. The paths are then painted in with lacquer,

> > free-hand, using the vellum as a guide.
> >
> The lack of those paper-graphics skills is why I use the PCB software.
> Heck, I even use it for roughing-out stripboard layouts, to try to
> maximize the use of the strips.
>
> In Europe there's a gadget called a Dalo resist pen which is made
> specifically for hand-drawing on PCBs. It has a fine fibre tip and very
> thick, quick-drying ink. It's very expensive for what it is (namely a
> not very good fibre-tip pen) but with care it can be quite effective.
>
> As many people already know, the Staedtler marker pens (waterproof/
> wasserfest grade) are excellent for touching-up photo and iron-on resist
> patterns, but they're not as good as the Dalo for filling large areas.

Those Dalo pens are nothing but lacquer pens... Sharpies, laundry markers....even other brands of common permanent markers will work.....you can get by cheaper and have a better supply of tip sizes from ultrafine for smt work to xtra large that will cover ground planes nicely. Other permanent markers will also work. Stadtler pens are nice too, dont know their chemical makeup but they are tougher to remove than sharpie lacquer pens with solvents.

I do surface mount by hand with a double ended sharpie, one end has the normal fine tip and the other end has the ultrafine tip.
I used a piece of clear plastic to layout the patterns for common soic and surface mount resistor capacitor pads and drilled these out with a very fine drill bit used for drilling out small gas appliance orifices, it works great

Anyhow.....I have used perfboard for projects before, its quick and if you take your time you can do some really nice work. I have also used g-10 with the copper completely etched off for projects that used larger components where it was easier just to used 18 gauge wire underneath as opposed to ridiculously large traces.
For hobbyist purposes perfboard is fine.....its making sure the circuit works and works reliably that counts.

1011. Re: what will plug into a Fluke 87's test-lead jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 05:02:44 UTC
From: cornytheclown@hotmail.com
Message-ID: <8e8f59d4.0402052102.55050acf@posting.google.com>
Source record: 28798
Cross-posted to:
sci.electronics.equipment,sci.electronics.repair,alt.engineering.electrical,alt.engineering.maintenance,rec.radio.amateur.homebrew

hhc314@yahoo.com (Harry Conover) wrote in message
news:<7ce4e226.0401201146.14605931@posting.google.com>...
> jerryg50@hotmail.com (Jerry Greenberg) wrote in message
news:<460a833b.0401191758.4791e924@posting.google.com>...
> > They are called "banana plugs", and are available from most any
> > elecronics supplier.
> >
> > Jerry Greenberg
> > http://www.zoom-one.com
>
> I really don't believe that a Fluke 87 connector is a banana plug. See
> this site:
>
> http://www.jensentools.com/product/group.asp?parent_id=8385
>
> Like most modern multimeters, the Fluke 87 employs safety connectors
> so that if a test lead pulls out of the meter, it doesn't pose a
> safety hazard with an exposed conductor.
>
> It is rare to see banana plugs used on many multimeters since the days
> of the Simpson 260 and Triplett 630, and these were circa 1965. This
> is because they were responsible for too many accidents. Today, banana
> connectors are rarely seen other than insrumentation targeted at
> accomplishing audio measurments, where it is commonplace.
>
> Wish that I could provide information on the connectors that mate with
> the Fluke 87, but without a search I have no idea what these
> connectors are, or who makes them.
>
> Even my cheap little Wavetek 5XL employs connectors of the shrouded
> gendre, and while you probably can jam a banana plug into them (or a
> twisted paper clip for that matter), you would negate the safety
> features of the shrouded connector design and in some applications
> their use would not only be unsafe but illegal.
>
>
> Harry C.

illegal under what authority ??? osha ??? They are shrouded banana
plugs,,,thats all.......I own several fluke meters along with other
brands and have many specialized test leads.....some shrouded , some
not and they work fine...even in an abusive industrial environment.
Yes, the shroud does help support the connection, this is good if the

meter gets laid down on its face or if it gets banged around in a tool bag or tool box.....but I know of know "laws" or osha regs that prevent the use of unshrouded banana plugs.

1012. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 05:04:31 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <bvv78v$c57$1@freenet9.carleton.ca>
Source record: 28799

cornytheclown (cornytheclown@hotmail.com) writes:
>
> Those Dalo pens are nothing but lacquer pens... Sharpies, laundry
> markers....even other brands of common permanent markers will
> work.....you can get by cheaper and have a better supply of tip
> sizes from ultrafine for smt work to xtra large that will cover ground
> planes nicely. Other permanent markers will also work. Stadtler pens
> are nice too, dont know their chemical makeup but they are tougher to
> remove than sharpie lacquer pens with solvents.
>
There was an article in Ham Radio, in the late eighties or so,
when someone wrote about using common pens for etch resist. He
mentioned adding some rubbing alcohol to the ink (ie pull open
the pen, and put in a bit of it) to make the ink flow better.
I know I tried it at the time, and the ink did apply better. I
can't remember if I ever etched boards with such a souped up pen.

Michael VE2BVW

1013. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 05:56:14 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <20GUb.14771$An3.12809@edtnps84>
Source record: 28800
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

They also make good push-pull stereo amps :-)

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

1014. Re: BFO freq how far down SSB filter skirt?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 06:06:17 UTC
From: Rick Karlquist N6RK <richard@karlquist.removethis.com>
Message-ID: <t9GUb.185646$sv6.971699@attbi_s52>
Source record: 28801

On transmit, you need to get some of the carrier
suppression by means of the filter. Most balanced
modulators are not able to get good enough
carrier suppression when operated at low enough
levels to have good IMD. This is main reason
why phasing rigs went out of fashion.

Rick N6RK

"Tom Holden" <holden_family@sympatico.ca> wrote in message
news:6CDUb.7045$ZN1.582640@news20.bellglobal.com...
> ARRL Handbook says that the BFO frequency should be at the -20dB point
down
> the skirt of the SSB filter. Pete, KE9OA, says -24dB.
> 1. What is the reasoning behind these choices?
> 2. How critical is it that the BFO be so positioned?
> 3. Wouldn't the shape factor have some bearing on where it should be?
> 4. Is linear interpolation between the -6 and -60dB points accurate enough
> to determine the BFO freq?
>
> TIA,
> Tom
>
>

1015. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 06:18:32 UTC
From: Eddie Haskel <wiseguy@clever.com>
Message-ID: <YkGUb.20765$%X7.9737@newssvr27.news.prodigy.com>
Source record: 28802
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

Motorola used them in the "K" strip series of transmitters....60 watts at 150Mhz. Usually driven with a 2E26. That tube with 700 Volts on the plates would make that kind of power all day...Eddie

"Dave" <Devarim@hotmail.com> wrote in message news:c88722f99e070f0dd405ad9e6fc50f36@news.meganetnews.com...
> Hi all,
>
> I just found several 829B tubes - believe it or not in my garage - I
> must have got them in a box of stuff at a ham fest at one time.
> A check on Ebay shows they're pretty much worthless for the sake
> of dollars, but they're so COOL! With the two plate caps that are
> actually just stiff pins, they look like little Martians.
>
> I put a pair on my office credenza just to look geeky cool. Fresh
> out of the box as NOS they look amazing - just like they were made
> yesterday. It's a pity they have no value - maybe as a homebrew
> project??
>
> So can someone tell me what they would have been used for?
> Something tells me they're a VHF power tube.
>
> Any application as a one-tube QRP rig of any sort? Any stories
> about using them in the past? I've built a lot of little rigs over the
> years, but never knew about the 829
>
> Thanks,
>
> Dave
>
>

1016. Re: 4CX5000A

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 06:23:16 UTC
From: Eddie Haskel <wiseguy@clever.com>
Message-ID: <opGUb.20766$D6.17317@newssvr27.news.prodigy.com>
Source record: 28803

look at (and copy) the final circuit from a BE-5A (broadcast electronics) FM transmitter.It's very simple and very stable too. It likes about 200 watts of drive from a IPA. Will run nicely with 5000 volts at about 1 amp on the plate. In the BE transmitter the tube sits in a cavity, with the plate being slide tuned. A coupling loop sits close to the tube....Eddie

"Onno de Vries." <mail@catv-solutions.nl> wrote in message news:bfa23d16.0402040943.7beda11a@posting.google.com...
> My name is Onno de Vries and i'm living in the Netherland and building
> big amps is my hobby.
> I just bought a 4CX 5000A on a radio market here for a good price (180
> Euro) including socket.
> Becourse the price was so good i took the challenge to build a 88-108
> Mhz final from it.
> After some experimenting i found out that the anode resonator a a bit
> of a problem course of the high cappacity of the tube.
> I try to do it with a double output coil (together Almost a half wave)
> wich you see in manny designs for 144 Mhz amateur amps using for
> example the russian tube GU84.
> This works but it has a terrible efficiency,about 25%.
> I hope that somebody can give me some Info about making a good and
> high efficiend tank with this kind of tube.
>
>
> Greetings.....Onno

1017. Will this circuit work for controlling a power relay.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 06:50:55 UTC
From: James W <change-to-jw22-at-trlp-dot-com@trlp.com>
Message-ID: <1026eag5rjbgj7d@corp.supernews.com>
Source record: 28804

I need to use a 12v relay to control power to a project that is a 12V/20A load.

My plan, is to use an automotive 12v 30A relay. The relay's coils have ~80ohms of resistance. The relay has a builtin diode to handle the inductive kickback when de-energizing the coil.

I plan is to feed the emitter of a 3906 from 12v, connecting the collector to the coil, and grounding the other end of the coil.

The base of the 3906 will connect to the collector on a 4N26 optoisolator through a ~5K resistor. The emitter of the 4N26 will be grounded.

I'll be using an AVR microprocessor to drive the LED in the 4N26.

Does this all seem reasonable? I'm new at designing things like this, and though it is a simple circuit, I want it to be reliable and safe, so I'll take any criticism and or suggestions you have (about the circuit ;-)

- jim

1018. mc13135

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 07:07:33 UTC
From: jill fryer <fryer@melbpc.org.au>
Message-ID: <bvvefo$l8r$1@possum.melbpc.org.au>
Source record: 28805

Could someone help me find pcb detail for this IC I've tried the motorola one with not much luck,maybe someone has homebrewed one that I could get a copy of,
thanks in advance.
Mark.

1019. Re: Bandwidth vs. Noise???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 07:56:49 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <sag620pf5tqd1571dfi503bd64jkulh43l@4ax.com>
Source record: 28806

On 05 Feb 2004 17:35:31 GMT, averyfineman@aol.com (Avery Fineman)
wrote:

> Signal to noise ratio changes as the _square_root_ of bandwidth
> change.

I do not quite understand this.

Usually the signal to noise ratio is defined as the signal power S
compared to the noise N (or compared to S+N). In a white noise
environment with constant noise density, the noise power is directly
proportional to bandwidth.

If the noise bandwidth is larger than the required signal bandwidth,
reducing the noise bandwidth will not affect the signal but only
reduce the noise power directly proportional to the bandwidth
(dropping the bandwidth to 1/4 will drop the noise power by 1/4 or 6
dB and increase the SNR by 6 dB).

However, if you looking at the noise _voltage_, it will drop by the
square_root of the bandwidth. But dropping the bandwidth to 1/4 will
drop the noise voltage to 1/2, which is again 6 dB.

In the OP's case, some of the signal sidebands are also cut, thus also
reducing the signal power. Are you assuming something about the
spectral or phase distribution of these sidebands (e.g. adding
coherent side bands produce the sum of the sideband _voltages_, while
adding noise from two side bands with random phase only produces a sum
of sideband _power_).

Paul OH3LWR

1020. Re: mc13135

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 08:08:10 UTC
From: Roger Gt <not@here.net>
Message-ID: <KXHUb.20800$T11.942@newssvr27.news.prodigy.com>
Source record: 28807

"jill fryer" <fryer@melbpc.org.au> wrote in
message news:bvvefo$l8r$1@possum.melbpc.org.au...
> Could someone help me find pcb detail for this
IC I've tried the motorola
> one with not much luck,maybe someone has
homebrewed one that I could get a
> copy of,
> thanks in advance.
> Mark.

Not the foot print only. But all the dimentions
are in the PDF file at:

http://pubpages.unh.edu/~aperkins/pdf/mc13135.pdf

1021. Re: 4CX5000A

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 08:23:53 UTC
From: Dave Foreman <davelf11@cox.net>
Message-ID: <amj620ppchmsi5920kukkfnjvgr04hgd22@4ax.com>
Source record: 28808

On Fri, 06 Feb 2004 06:23:16 GMT, "Eddie Haskel" <wiseguy@clever.com>
wrote:

>look at (and copy) the final circuit from a BE-5A (broadcast electronics) FM
>transmitter.It's very simple and very stable too. It likes about 200 watts
>of drive from a IPA. Will run nicely with 5000 volts at about 1 amp on the
>plate. In the BE transmitter the tube sits in a cavity, with the plate being
>slide tuned. A coupling loop sits close to the tube....Eddie
>
>"Onno de Vries." <mail@catv-solutions.nl> wrote in message
>news:bfa23d16.0402040943.7beda11a@posting.google.com...
>> My name is Onno de Vries and i'm living in the Netherland and building
>> big amps is my hobby.
>> I just bought a 4CX 5000A on a radio market here for a good price (180
>> Euro) including socket.

SNIP

>>
>> Greetings.....Onno
>

the 4CX5000A takes 10 Volts at 75 Amps, if I remember correctly.
Dave F.

1022. Re: 4CX5000A oops

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 08:52:21 UTC
From: Dave Foreman <davelf11@cox.net>
Message-ID: <lcl620l2co259asv6d4ce4gkhe5r9asler@4ax.com>
Source record: 28809

On Fri, 06 Feb 2004 01:23:53 -0700, Dave Foreman <davelf11@cox.net> wrote:

>On Fri, 06 Feb 2004 06:23:16 GMT, "Eddie Haskel" <wiseguy@clever.com>
>wrote:
>
>>look at (and copy) the final circuit from a BE-5A (broadcast electronics) FM
>>transmitter.It's very simple and very stable too. It likes about 200 watts
>>of drive from a IPA. Will run nicely with 5000 volts at about 1 amp on the
>>plate. In the BE transmitter the tube sits in a cavity, with the plate being
>>slide tuned. A coupling loop sits close to the tube....Eddie
>>
>>"Onno de Vries." <mail@catv-solutions.nl> wrote in message
>>news:bfa23d16.0402040943.7beda11a@posting.google.com...
>>> My name is Onno de Vries and i'm living in the Netherland and building
>>> big amps is my hobby.
>>> I just bought a 4CX 5000A on a radio market here for a good price (180
>>> Euro) including socket.
>
>SNIP
>
>>>
>>> Greetings.....Onno
>>
>
>the 4CX5000A takes 10 Volts at 75 Amps, if I remember correctly.
>Dave F.

Meant to say on the filiment, I had one at one time and
mostly used as a paper weight.
Dave F.

1023. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 09:09:44 UTC
From: K7JEB <k7jeb.remove_this@qsl.net>
Message-ID: <OUIUb.22592$tP1.11601@fed1read07>
Source record: 28810
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

Dave wrote:

> I just found several 829B tubes - believe it or not in my garage...

> So can someone tell me what they would have been used for?
> Something tells me they're a VHF power tube.

You've gotten some good responses from some others in the NG.
The most unusual application for the 829B that I saw was their
being used to drive the magnetic-core memory modules in the
Whirlwind I computer racks on display in the Computer Museum
in Boston. The sockets may have originally been designed for
832's and "upgraded" to 829's for more drive or longer life.

Jim Bromley, K7JEB
Glendale, AZ

1024. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 14:57:34 UTC
From: "P.T." <snowshoe@dimensional.com>
Message-ID: <4023aacb$1_2@omega.dimensional.com>
Source record: 28811
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

they are 2 ea 6l6 tubes in 1 envelope and were used for a lot of vhf
transmitters you get 40 to 60 watts in a class c fm transmitter.
"Dave" <Devarim@hotmail.com> wrote in message
news:c88722f99e070f0dd405ad9e6fc50f36@news.meganetnews.com...
> Hi all,
>
> I just found several 829B tubes - believe it or not in my garage - I
> must have got them in a box of stuff at a ham fest at one time.
> A check on Ebay shows they're pretty much worthless for the sake
> of dollars, but they're so COOL! With the two plate caps that are
> actually just stiff pins, they look like little Martians.
>
> I put a pair on my office credenza just to look geeky cool. Fresh
> out of the box as NOS they look amazing - just like they were made
> yesterday. It's a pity they have no value - maybe as a homebrew
> project??
>
> So can someone tell me what they would have been used for?
> Something tells me they're a VHF power tube.
>
> Any application as a one-tube QRP rig of any sort? Any stories
> about using them in the past? I've built a lot of little rigs over the
> years, but never knew about the 829
>
> Thanks,
>
> Dave
>
>

1025. Re: BFO freq how far down SSB filter skirt?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 16:11:45 UTC
From: Gary Schafer <gaschafer@comcast.net>
Message-ID: <q5f7209vscki01r465b8dp74gqmgl9cumf@4ax.com>
Source record: 28812

On Thu, 5 Feb 2004 22:13:05 -0500, "Tom Holden"
<holden_family@sympatico.ca> wrote:

>ARRL Handbook says that the BFO frequency should be at the -20dB point down
>the skirt of the SSB filter. Pete, KE9OA, says -24dB.
>1. What is the reasoning behind these choices?
>2. How critical is it that the BFO be so positioned?
>3. Wouldn't the shape factor have some bearing on where it should be?
>4. Is linear interpolation between the -6 and -60dB points accurate enough
>to determine the BFO freq?
>
>TIA,
>Tom
>

20 db down is where they are usually set. It is not too critical
though. It does provide that much carrier suppression in addition.

The best way is to set it where it sounds the best. Too far down and
you get better opposite side band suppression but it also cuts the low
frequency response of the wanted side band.

Yes it will depend on the shape factor of the filter as to where the
best point on the slope is.

You can easily measure 20 db down or how far you want it by just
measuring the output voltage level from what you get at the center of
the filter. Measuring is much easier than interpolating the correct
point as only a few tenths of a cycle change on the slope will make a
large change in db down.

73
Gary K4FMX

1026. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 16:13:43 UTC
From: Wes Stewart <n7ws@_arrl.net>
Message-ID: <fmd720dphdkqdrs69kajrc3tko7k4e585p@4ax.com>
Source record: 28813
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

On Fri, 06 Feb 2004 01:03:55 GMT, "Dave" <Devarim@hotmail.com> wrote:

|Hi all,
|
|I just found several 829B tubes - believe it or not in my garage - I
|must have got them in a box of stuff at a ham fest at one time.
|A check on Ebay shows they're pretty much worthless for the sake
|of dollars, but they're so COOL! With the two plate caps that are
|actually just stiff pins, they look like little Martians.
|
|I put a pair on my office credenza just to look geeky cool. Fresh
|out of the box as NOS they look amazing - just like they were made
|yesterday. It's a pity they have no value - maybe as a homebrew
|project??
|
|So can someone tell me what they would have been used for?
|Something tells me they're a VHF power tube.
|
|Any application as a one-tube QRP rig of any sort? Any stories
|about using them in the past? I've built a lot of little rigs over the
|years, but never knew about the 829

I used one on two meters in the early 60's. The amp was of course push-pull and had a tuned line plate circuit with link coupling. I ran AM and CW and used the modulated high voltage out of my Heathkit DX-100 for plate and screen voltage.

The original exciter was a converted SCR-522, which used the 829's baby brother, the 832 as frequency multipliers and final. Later I replaced the 829 with a 5894 and the 832s with a baby version of the '94, whose part number escapes me at the moment (6907 I think).

These later tubes were more efficient at vhf and were tetrodes rather than the 832-829 "beam-power" tubes. The 832 was sort of like a pair of 2E26s sharing a cathode and the 829 was sort of like a pair of 807s.

Eventually, I replaced the clunky '522 with a more compact exciter out of the Handbook that used somethin' or the other as oscillator/doubler/tripler and a 6360 tripler driving another 6360.

Real progress came when I converted the second 6360 to a high level mixer driven with a Central Electronics 10A SSB exciter. (I don't even want to think what the IMD out of this mess must have been.)

1027. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 16:21:05 UTC
From: Dave <Devarim@hotmail.com>
Message-ID: <4bddccded265bb98a0c3f9d6e4d5621c@news.meganetnews.com>
Source record: 28816
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

Many thanks to all who replied, both here and by email. They sound like a great tube for LOTS of purposes. My favorite suggestion was building a regen, using each half in place of the 6AQ5's called for in the ARRL handbook design from the 50's!

How about an oscillator / amplifier for HF, running low plate voltage for a relatively low RF output? Seems they should be able to do that - and having a separate oscillator stage it wouldn't be prone to runaway and exessive crystal current. And it would look VERY cool!

What sort of plate caps were used? There are just pins, and it looks almost as if there would have been a ceramic gizmo like a tube socket to have bridged the two of them....

Again, thanks for the info!!

Dave

1028. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 16:24:19 UTC
From: Cambio <CAM@ripped.net>
Message-ID: <UcPUb.7963$IF1.3703@fed1read01>
Source record: 28814
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

To see the tube photo -- go to googe.com type in "829B tubes"
Select IMAGES not web.

I recall these in Military Aircraft of the 50's --- I believe ARC-27 -- a
UHF Transceiver by Collins Radio

The ARC-1 Transceiver used a smaller rounded version 832B -- we called them
door knob tubes -- see google

So would make a VHF/UHF power output stage maybe 10 watts or so

--
73- Cambio - Keyboard To You (:-)

"Dave" <Devarim@hotmail.com> wrote in message
news:c88722f99e070f0dd405ad9e6fc50f36@news.meganetnews.com...
> Hi all,
>
> I just found several 829B tubes - believe it or not in my garage - I
> must have got them in a box of stuff at a ham fest at one time.
> A check on Ebay shows they're pretty much worthless for the sake
> of dollars, but they're so COOL! With the two plate caps that are
> actually just stiff pins, they look like little Martians.
>
> I put a pair on my office credenza just to look geeky cool. Fresh
> out of the box as NOS they look amazing - just like they were made
> yesterday. It's a pity they have no value - maybe as a homebrew
> project??
>
> So can someone tell me what they would have been used for?
> Something tells me they're a VHF power tube.
>
> Any application as a one-tube QRP rig of any sort? Any stories
> about using them in the past? I've built a lot of little rigs over the
> years, but never knew about the 829
>
> Thanks,
>
> Dave
>
>

1029. Re: BFO freq how far down SSB filter skirt?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 16:36:29 UTC
From: Wes Stewart <n7ws@_arrl.net>
Message-ID: <gef7205e4pa43vto4m64a1cv27ker0ji6d@4ax.com>
Source record: 28815

On Thu, 5 Feb 2004 22:13:05 -0500, "Tom Holden"
<holden_family@sympatico.ca> wrote:

|ARRL Handbook says that the BFO frequency should be at the -20dB point down
|the skirt of the SSB filter. Pete, KE9OA, says -24dB.
|1. What is the reasoning behind these choices?
|2. How critical is it that the BFO be so positioned?
|3. Wouldn't the shape factor have some bearing on where it should be?
|4. Is linear interpolation between the -6 and -60dB points accurate enough
|to determine the BFO freq?
|

Perhaps an example is the best way to explain this. Assume that you
have a nominal 9 MHz crystal filter, with a 2.0 KHz BW at the -6 dB
points.

The -6 dB frequencies are thus 8.999 and 9.001 MHz. Forgetting the
bandwidth restrictions on the incoming signal, let's say you would
like the recovered audio signal to be 6 dB down at 500 and 2500 Hz
respectively.

For an upper sideband signal, the BFO should be 500 Hz below the lower
cutoff frequency, i.e. 8.9985 MHz. For lower sideband, the BFO should
be 500 Hz above the upper cutoff frequency, 9.0015 MHz.

Where these two frequencies land on the skirts is dependent on the
shape factor. These "rules" that say the BFO should be so many dB
down are really "rules of thumb" that work with typical shape factors.

Wes Stewart N7WS

1030. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 16:44:29 UTC
From: mikea@mikea.ath.cx
Message-ID: <c00g9d$782$1@puck.litech.org>
Source record: 28817
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

In <UcPUb.7963$IF1.3703@fed1read01> (rec.radio.amateur.boatanchors), Cambio wrote:
> To see the tube photo -- go to googe.com type in "829B tubes"
> Select IMAGES not web.

> I recall these in Military Aircraft of the 50's --- I believe ARC-27 -- a
> UHF Transceiver by Collins Radio

> The ARC-1 Transceiver used a smaller rounded version 832B -- we called them
> door knob tubes -- see google

> So would make a VHF/UHF power output stage maybe 10 watts or so

They were the final in the TX of the AN/ARC-3, too. I never got
mine lit up, as I went into the USAF not long after I got mine --
surplused (or something) from the Civil Air Patrol, way back in
1964.

--
Any research done on how to efficiently use computers has been long lost
in the mad rush to upgrade systems to do things that aren't needed by
people who don't understand what they are really supposed to do with
them. -- Graham Reed, in a.s.r.

1031. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 16:47:29 UTC
From: mikea@mikea.ath.cx
Message-ID: <c00gf1$782$2@puck.litech.org>
Source record: 28818
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

In <4bddccded265bb98a0c3f9d6e4d5621c@news.meganetnews.com> (rec.radio.amateur.homebrew), Dave wrote:

> What sort of plate caps were used? There are just pins, and
> it looks almost as if there would have been a ceramic gizmo
> like a tube socket to have bridged the two of them....

On the transmitter for the AN/ARC-3, the plate leads just had push-on clips with a little bit of spring-loading, much like the contacts in a tube socket.

--
You haven't lived until you've seen the households Great Hunter Panther^wtomcat cowering in terror under a bush after being caught in an instant thunderstorm on a sunny day.
-- Lionel, about his owner, in the Monastery

1032. Re: Will this circuit work for controlling a power relay.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 17:17:34 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1027j14cger0l18@corp.supernews.com>
Source record: 28819

A more normal setup would be an NPN transistor with the emitter grounded and your 5K resistor switched from the optoisolator. NPN's are generally just a bit better than a similar PNP, and you'll have a wider range of choices. A 2N3904 would work, but a 2N4401 would be a better choice.

The minimum current gain for these things is around 40, and you should design for lower yet, so you should put about 5-10mA into the base of the transistor to get it turned on good and hard. With a 12V supply rail this implies no more than a 2.2k-ohm resistor. If your optoisolator can't supply that then use an NPN Darlington instead of a single NPN.

If you do use a PNP lose the base resistor. The minimum guaranteed current gain of a 2N3906 is 60, so with 150mA collector current you'd need 2.5mA into the base - that's a 12.5V drop across your resistor, which means the circuit just wouldn't work. Even without the resistor you'll still drop some voltage in the opto, then some more in the emitter-base junction of the drive transistor. By the time you're done you'll be lucky to have 10V to the relay.

Have fun.

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

"James W" <change-to-jw22-at-trlp-dot-com@trlp.com> wrote in message
news:1026eag5rjbgj7d@corp.supernews.com...
>
> I need to use a 12v relay to control power to a project that is a
> 12V/20A load.
>
> My plan, is to use an automotive 12v 30A relay. The relay's coils have
> ~80ohms of resistance. The relay has a builtin diode to handle the
> inductive kickback when de-energizing the coil.
>
>
> I plan is to feed the emitter of a 3906 from 12v, connecting the
> collector to the coil, and grounding the other end of the coil.
>
> The base of the 3906 will connect to the collector on a 4N26
> optoisolator through a ~5K resistor. The emitter of the 4N26 will be
> grounded.
>
> I'll be using an AVR microprocessor to drive the LED in the 4N26.
>

> Does this all seem reasonable? I'm new at designing things like this,
> and though it is a simple circuit, I want it to be reliable and safe, so
> I'll take any criticism and or suggestions you have (about the circuit
;-)
>
> - jim
>

1033. Re: test leads fluke

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 17:20:12 UTC
From: simpson <simpson_guy@nospam.com>
Message-ID: <4023CCC9.96A1CEBE@nospam.com>
Source record: 28820

Hi

I got a set from this site:

http://www.stores.ebay.com/testparts

joe

Bob wrote:

> I have a peculiar Simpson 260 that has recessed male test lead connectors.
> Where can I get a set of test leads for this?
>
> Bob

1034. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 18:01:56 UTC
From: mcalhoun@ksu.edu
Message-ID: <c00kqk$cho@unix1.cc.ksu.edu>
Source record: 28821
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

>I just found several 829B tubes - believe it or not in my garage - I
>....[snip]....

>So can someone tell me what they would have been used for?
>Something tells me they're a VHF power tube.
>....[snip]....

A nice article starting on page 40 of the August, 1949, issue of QST
describs a two-tube (6AG7 oscillator [26MHz xtal]/doubler and 829
amplifier) for 75 watts output in the 6-meter band.

--Myron.
--
Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge
PhD EE (retired). "Barbershop" tenor. CDL(PTXS). W0PBV. (785) 539-4448
NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle, Pistol)

1035. Buy and Sell Tubes , Parts, and Gear!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 18:11:57 UTC
From: Jeff James <cbstv@optonline.net>
Message-ID: <NNQUb.76733$%93.14498207@news4.srv.hcvlny.cv.net>
Source record: 28822

The Boatanchor Classifieds
http://www.dealamerica.com/deal/cgi-bin/ads/bcads.cgi
Dedicated to vintage amateur radio!

1036. messing with a car radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 18:25:58 UTC
From: cde@rocketmail.com
Message-ID: <c057333a.0402061025.a119808@posting.google.com>
Source record: 28823
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.shortwave

I have an 80s model delco am/fm radio. I'd like to attach an external long wire AM antenna, an external FM antenna, and rig something up so I can listen to it with headphones at bedside.

Questions:

1. What do I need to do/build the headphone connection? Can I put something together using the car radio speaker wires?

2. Is it possible to hook up the long wire antenna without getting too complicated? Can I use the antenna plug on the radio in some way, or will I have to get inside the box? I don't know a lot about electronics. I have a soldering iron and have fixed the occasional loose wire on things around the house, but not much more than that.

Or should I just forget it and buy a portable receiver? I mainly want to listen to AM talk at night and a particular FM college station in the next town. I read on several posts about using a car radio because of the AM reception.

I've also thought about buying a used Grundig receiver, in particular the S350. I think having the option of listening to shortwave might be fun. Does this thing put out good audio via headphones?

Thanks.

1037. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 18:50:28 UTC
From: kludge@panix.com
Message-ID: <c00nlkqlt1@panix2.panix.com>
Source record: 28824
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

In article <20GUb.14771$An3.12809@edtnps84>, Gregg <nospam@unknown.org> wrote:
>They also make good push-pull stereo amps :-)

I was looking at doing something like that years ago, using a homebrew
output transformer, but I never finished it. I do know that the 829
was used in some of the modulation decks for aircraft band transmitters
at one point, so they should be fun at AF.
--scott
--
"C'est un Nagra. C'est suisse, et tres, tres precis."

1038. Re: BFO freq how far down SSB filter skirt?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 18:51:11 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c00nq9$bu8$1@newshost.mot.com>
Source record: 28827

>
> |ARRL Handbook says that the BFO frequency should be at the -20dB point
down
> |the skirt of the SSB filter. Pete, KE9OA, says -24dB.
> |1. What is the reasoning behind these choices?
> |2. How critical is it that the BFO be so positioned?
> |3. Wouldn't the shape factor have some bearing on where it should be?

I think you understand. The filter is placed in relation to the AUDIO or sideband that it has to pass. The filter shape factor then determines where on the skirt the BFO happend to fall. On the type of filter (commonly) used, it appears to be the -20dB point.

Someof the other reaponses are saying the same thing in various ways.

> |4. Is linear interpolation between the -6 and -60dB points accurate
enough
> |to determine the BFO freq?

That's probablu not to bad, but the answer above says that this is going at it the wrong way. Place the filter pass band where it needs to be and the BFO goes on the carrier freq, wherever it is. If you want the filter to cut off some of the highs, then put the BFO further down the skirt - visa-versa.

If I actually answer your question and consider a "typical" (in my mind anyway) filter shape, linear interpolation will put the BFO a little too close (less than -20dB down -- as in like -18dB down) to the bandpass.
--
Steve N, K,9;d, c. i My email has no u's.

1039. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 19:13:56 UTC
From: kludge@panix.com
Message-ID: <c00p1kvi1@panix2.panix.com>
Source record: 28826
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

Dave <Devarim@hotmail.com> wrote:
>Many thanks to all who replied, both here and by email.
>They sound like a great tube for LOTS of purposes. My
>favorite suggestion was building a regen, using each
>half in place of the 6AQ5's called for in the ARRL handbook
>design from the 50's!
>
>How about an oscillator / amplifier for HF, running low
>plate voltage for a relatively low RF output? Seems they
>should be able to do that - and having a separate oscillator
>stage it wouldn't be prone to runaway and exessive crystal
>current. And it would look VERY cool!

If I recall, the 829 is one of the tubes with the cathodes tied
together to a single pin, isn't it? This reduces the utility for
such things.

>What sort of plate caps were used? There are just pins, and
>it looks almost as if there would have been a ceramic gizmo
>like a tube socket to have bridged the two of them....

They are little ceramic clips. You can use Molex pins in a pinch.
--scott

--
"C'est un Nagra. C'est suisse, et tres, tres precis."

1040. Re: messing with a car radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 20:51:53 UTC
From: Tom Sevart <n2uhc@yahoo.nospam.com>
Message-ID: <c00no7$117c5e$1@ID-52518.news.uni-berlin.de>
Source record: 28825
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.shortwave

"ellisc" <cde@rocketmail.com> wrote in message
news:c057333a.0402061025.a119808@posting.google.com...
>
> 1. What do I need to do/build the headphone connection? Can I put
> something together using the car radio speaker wires?

You can use the speaker wires, however, the audio used to feed the speakers will be amplified, and will probably overdrive your headphones. You'll need to find a way to match the headphones to the speaker output.

> 2. Is it possible to hook up the long wire antenna without getting too
> complicated? Can I use the antenna plug on the radio in some way, or
> will I have to get inside the box? I don't know a lot about
> electronics. I have a soldering iron and have fixed the occasional
> loose wire on things around the house, but not much more than that.

It should be easy to connect a random wire antenna to the jack of the car radio. Just solder the plug onto the wire antenna. I think they use Motorola type plugs as a standard. However, an antenna that is good for the AM broadcast band won't necessarily be good for the FM broadcast band. However, as you stated below, you just want to listen to an FM station in the next town, so a random wire antenna will probably work OK.

> Or should I just forget it and buy a portable receiver? I mainly want
> to listen to AM talk at night and a particular FM college station in
> the next town. I read on several posts about using a car radio
> because of the AM reception.

Well it all depends on if you're looking to do it easy, or if you want the challenge of making it work. If you're looking for a technical challenge then the car radio will fit the bill. You'll need to match the headphones to the speaker output, attach an antenna, and find a way to power it from 12VDC, either from a battery or power supply. It would be fairly easy to go buy a decent AM/FM radio for DXing (GE Superradio comes to mind).

--
Tom Sevart N2UHC
Frontenac, KS
http://www.geocities.com/n2uhc

1041. Bandwidth vs. Noise,,,Take 2

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 21:16:04 UTC
From: hexter@blazenet.net
Message-ID: <102810k8bgmef72@corp.supernews.com>
Source record: 28828

Okay, let me restate, since I seem to be mis-understood,

The I.F. is stagger tuned, with swamping resistors to kill the Q. It is running at 60mhz with a 6db bandwidth of 8mhz. It is part of a 'short pulse' marine radar unit. The pulses were like maybe .06microseconds at about 1khz rep rate.

The transmitter now squirts out 'long pulses' of about .8microseconds. I want to raise the value of the swamp resistors, and 'un-stagger' the tuning to get a 1.5mhz bandwidth at the 6db point.

So the original question was "If I reduce the bandwidth from 8mhz to 1.5mhz, and everything else remains the same, what will happen to the signal to noise ratio in terms of db snr?

I have done similar mods before, and the units work better than ever. Just getting the swamp resistors up in value helps receiver gain more than the numbers would apparently indicate, as I can see small craft at 24 miles, when I could hardly see them at 12 miles before mods.

1042. Re: Bandwidth vs. Noise,,,Take 2

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 22:09:39 UTC
From: Gary Schafer <gaschafer@comcast.net>
Message-ID: <t44820hhad9aabrveq0865vjeqfh1slcg4@4ax.com>
Source record: 28829

Why not just use the narrow IF that is already in the radar for the
wider pulse width?

73
Gary K4FMX

On Fri, 06 Feb 2004 21:16:04 -0000, hexter@blazenet.net (gudmundur)
wrote:

> Okay, let me restate, since I seem to be mis-understood,
>
> The I.F. is stagger tuned, with swamping resistors to kill the Q. It is
>running at 60mhz with a 6db bandwidth of 8mhz. It is part of a 'short pulse'
>marine radar unit. The pulses were like maybe .06microseconds at about 1khz
>rep rate.
>
> The transmitter now squirts out 'long pulses' of about .8microseconds. I
>want to raise the value of the swamp resistors, and 'un-stagger' the tuning
>to get a 1.5mhz bandwidth at the 6db point.
>
> So the original question was "If I reduce the bandwidth from 8mhz to 1.5mhz,
>and everything else remains the same, what will happen to the signal to
>noise ratio in terms of db snr?
>
> I have done similar mods before, and the units work better than ever. Just
>getting the swamp resistors up in value helps receiver gain more than the
>numbers would apparently indicate, as I can see small craft at 24 miles, when
>I could hardly see them at 12 miles before mods.

1043. W: CT-29B schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 22:32:29 UTC
From: Tom <truckdrivingman@hotmail.com>
Message-ID: <c014m3$19f$02$1@news.t-online.com>
Source record: 28830

Hello NG
I need the schematic to build a CT-29B cable for my FT-8900.Can somebody
mail it to me ?

tnx and 73
Tom,DL7JSK

1044. NOISE REDUCTION

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 23:26:12 UTC
From: VITEL <vitel@eunet.yu>
Message-ID: <c017rladq1@news.eunet.yu>
Source record: 28831

I need good schematic of audio noise reduction filter (for my home-made HF transceiver). I tried with many of diferent DSP filter softwares, but they have some delay which made problems during contests.

So, if someone can help me with good schematic of noise reduction filter, I will be grateful.

(More preferable schematic without DSP IC's, because I have problem to bay them in my country).

Best regards,

73 de Djole,
YZ1GW

1045. Re: NOISE REDUCTION

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-06 23:58:27 UTC
From: dplatt@radagast.org
Message-ID: <1028ah3k6nr8a70@corp.supernews.com>
Source record: 28832

>I need good schematic of audio noise reduction filter (for my home-made HF
>transceiver). I tried with many of diferent DSP filter softwares, but they
>have some delay which made problems during contests.
>
>So, if someone can help me with good schematic of noise reduction filter, I
>will be grateful.
>
>(More preferable schematic without DSP IC's, because I have problem to bay
>them in my country).

What specific sorts of noise are you trying to reduce? It matters,
quite a great deal.

The circuitry needed for an impulse-noise reduction circuit ("noise
blanker") is going to be a lot different than the circuit needed to
notch out narrowband interference (heterodynes or spurious-signal
"birdies"), and both of these will be a lot different than what you'd
need for a multisegment broadband audio noise reducer.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

1046. Re: Cardmatic update & ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 00:02:04 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <1028ao0p1j8pu59@corp.supernews.com>
Source record: 28833
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

Lou
Under the black cover over the matrix swtich there are 3 black bakelite slabs (3.5" X 4.5" X ~1/4") with 187 holes sandwiching 185 pins. With the black cover removed (2 screws) and the card plunger pushed in and you'll see that the sandwich "floats" on four 8-32 threaded posts. Each of these posts has 2 nuts sandwiching the slab sandwich. The position of the lower 4 nuts (I called these jam nuts) determines how far in the 185 pins go into their female counterpart where there is no hole in the card. If there's a hole in the card the pins must not make contact with their female counterpart, and this clearance is about the thickness of a dime. In addtion all these jam nuts must be on the same plane so that the sandwich is orthagonal and will not bind so it can move smoothly.
A pix would have been easier but the batteries are being charged. Let me know if you still need a pix.
73
hank wd5jfr

"Lou deGonzague" <nobody@nycap.rr.com> wrote in message
news:AIyUb.43723$%72.40707@twister.nyroc.rr.com...
> This was a very interesting post Henry, I have one of these and it seems
to
> be working OK. I have everything except the cal cell is dead. I would like
> to see a pic of those jam nuts that you shouldn't touch if possible as I
> thought about cleaning the card reader.
> "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
> news:1025c94g572m1f2@corp.supernews.com...
> > In this case the "assembler" needed flogging!
> >
> > hank wd5jfr
> > "Jeffrey D Angus" <jangus@socal.rr.com> wrote in message
> > news:QpwUb.7733$ow4.5271@twister.socal.rr.com...
> > >
> > >
> > > Henry Kolesnik wrote:
> > >
> > > > It's fixed, a new day respite helps.
> > >
> > > Which just undescores what I've been telling my techs all
> > > along. VERIFY everything before you start flogging the
> > > assembly.
> > >
> > > Jeff
> > >

> > > --
> > > "They that can give up essential liberty to obtain a little temporary
> > > safety deserve neither liberty nor safety." Benjamin Franklin
> > > "A life lived in fear is a life half lived."
> > > Tara Morice as Fran, from the movie "Strictly Ballroom"
> > >
> >
> >
>
>

1047. Re: messing with a car radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 00:10:12 UTC
From: Stephen Cowell <scowell@sbcglobal.net>
Message-ID: <E1WUb.1272$BV1.816@newssvr23.news.prodigy.com>
Source record: 28834
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.shortwave

"Tom Sevart" <n2uhc@yahoo.nospam.com> wrote in message
news:c00no7$117c5e$1@ID-52518.news.uni-berlin.de...
>
> "ellisc" <cde@rocketmail.com> wrote in message
> news:c057333a.0402061025.a119808@posting.google.com...
> >
> > 1. What do I need to do/build the headphone connection? Can I put
> > something together using the car radio speaker wires?
>
> You can use the speaker wires, however, the audio used to feed the
speakers
> will be amplified, and will probably overdrive your headphones. You'll
need
> to find a way to match the headphones to the speaker output.

This is easily done with a resistor divider... I'd put a load
for the speaker, too. This would look like an 8-ohm 20W
resistor (RatShak sells 'em) across the speaker leads, with
a 500ohm pot across that... your h-phones are tapped
from ground to the center wiper of the pot. Adjust for taste.

--
Steve
KI5YG
.

1048. Re: 13.8 V power supply question - another site

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 00:32:48 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <QmWUb.241861$na.399132@attbi_s04>
Source record: 28835

Look at this site for documentation and ideas:

http://www.kbt-dc-supplies.com/index.php

gb

"Uwe Langmesser" <outhouse@midcoast.com> wrote in message
news:BC430972.B653%outhouse@midcoast.com...
> I need a 12-14 V power supply for my new 2m tranceiver. On transmit I need
> probably 10 to 15 amps and I hooked up and old transformer with a
rectifier
> and a filter section I get 15V at my filter with no load, the transformer
is
> good for 25 amps) but if I draw 15 amps I will get too much ripple,
>
> so I need a regulating section.
>
>
> Homebrewing is called for.
>
> Last years radio amateur handbook has a design for a 28 volt regulated
> power supply and while I would feel comfortable building a proven design I
> do not feel comfortable to redesign that regulating section for my needs.
>
> So the question is does anyone have a diagram for a proven 12-14 Volt
> regulated supply for 10 to 25 amps??
>
> Thanks for your help
> Uwe
>

1049. Re: Bandwidth vs. Noise,,,Take 2

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 01:27:14 UTC
From: hexter@blazenet.net
Message-ID: <1028fniqiqfvlb8@corp.supernews.com>
Source record: 28836

Because that is just it..... It is a cheap radar with only AN 8 MHZ FACTORY
SUPPLIED I.F. BANDWIDTH which is typical of these units. The newer ones
have at least 2 bandwidths, and perhaps 3 on the really expensive units.
I would not re-invent the wheel, I just want an answer in db snr.

My answer is this, The screen full of echos looks real good after I do my
voodoo. Now, can someone just answer the question?

In article <t44820hhad9aabrveq0865vjeqfh1slcg4@4ax.com>, gaschafer@comcast.net
says...
>
>Why not just use the narrow IF that is already in the radar for the
>wider pulse width?
>
>73
>Gary K4FMX
>
>On Fri, 06 Feb 2004 21:16:04 -0000, hexter@blazenet.net (gudmundur)
>wrote:
>
>> Okay, let me restate, since I seem to be mis-understood,
>>
>> The I.F. is stagger tuned, with swamping resistors to kill the Q. It is
>>running at 60mhz with a 6db bandwidth of 8mhz. It is part of a 'short pulse'
>>marine radar unit. The pulses were like maybe .06microseconds at about 1khz
>>rep rate.
>>
>> The transmitter now squirts out 'long pulses' of about .8microseconds. I
>>want to raise the value of the swamp resistors, and 'un-stagger' the tuning
>>to get a 1.5mhz bandwidth at the 6db point.
>>
>> So the original question was "If I reduce the bandwidth from 8mhz to 1.5mhz,
>>and everything else remains the same, what will happen to the signal to
>>noise ratio in terms of db snr?
>>
>> I have done similar mods before, and the units work better than ever. Just
>>getting the swamp resistors up in value helps receiver gain more than the
>>numbers would apparently indicate, as I can see small craft at 24 miles, when
>>I could hardly see them at 12 miles before mods.
>

1050. Re: 4CX5000A oops

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 01:35:06 UTC
From: mail@catv-solutions.nl
Message-ID: <bfa23d16.0402061735.400c1925@posting.google.com>
Source record: 28837

Dave Foreman <davelf11@cox.net> wrote in message
news:<lcl620l2co259asv6d4ce4gkhe5r9asler@4ax.com>...
> On Fri, 06 Feb 2004 01:23:53 -0700, Dave Foreman <davelf11@cox.net> wrote:
>
> >On Fri, 06 Feb 2004 06:23:16 GMT, "Eddie Haskel" <wiseguy@clever.com>
> >wrote:
> >
> >>look at (and copy) the final circuit from a BE-5A (broadcast electronics) FM
> >>transmitter.It's very simple and very stable too. It likes about 200 watts
> >>of drive from a IPA. Will run nicely with 5000 volts at about 1 amp on the
> >>plate. In the BE transmitter the tube sits in a cavity, with the plate being
> >>slide tuned. A coupling loop sits close to the tube....Eddie
> >>
> >>"Onno de Vries." <mail@catv-solutions.nl> wrote in message
> >>news:bfa23d16.0402040943.7beda11a@posting.google.com...
> >>> My name is Onno de Vries and i'm living in the Netherland and building
> >>> big amps is my hobby.
> >>> I just bought a 4CX 5000A on a radio market here for a good price (180
> >>> Euro) including socket.
> >
> >SNIP
> >
> >>>
> >>> Greetings.....Onno
> >>
> >>
> >
> >the 4CX5000A takes 10 Volts at 75 Amps, if I remember correctly.
> >Dave F.
>
> Meant to say on the filiment, I had one at one time and
> mostly used as a paper weight.
> Dave F.

Hallo Eddy. Thank's for responding.
I allready did some seaching for this BE-5A transmitter and i found it
manny time's. The onely problem is that photo's,schematic's or
manuals are not there.
Atleast i cannot find them. I had some more reactions on my call in
the broadcast group. The collins 830F and the harris FM-25K are alsow
transmitters with the 4CX in the final but here it's the same. I
cannot find anny photo's or manuals. I thought (when i bought this
tube)it would be easy to get some info about it becourse it it a
,,famous,,tube.

Well i wil keep on seaching........buy the way,if You know where i can find what i need,please let me know.

Regards. Onno.

1051. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 01:45:00 UTC
From: k3hvg <jeepp@erols.com>
Message-ID: <4024431C.FF5CC035@erols.com>
Source record: 28838
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

That's right on! The rig was the Collins ARC-1. It used one in the final and one in the modulator. The thing was for 100-156 MHz. Later conversions for the airlines in the late 40's added 50 or so channels (sort of like the ARC-3 and the ARC-49).

>
> snip-
> I was looking at doing something like that years ago, using a homebrew
> output transformer, but I never finished it. I do know that the 829
> was used in some of the modulation decks for aircraft band transmitters
> at one point, so they should be fun at AF.
> --scott
>

1052. Re: 4CX5000A oops

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 01:58:03 UTC
From: mail@catv-solutions.nl
Message-ID: <bfa23d16.0402061758.1419c97e@posting.google.com>
Source record: 28839

Hallo Eddy. Thanks for responding. I did some seaching and i
can find this BE-5A manny time's but i cannot find photo's, schematics
,manuals wich can explane me a bit more in detail so i can build the
thing.
This time better than before,This double resonator.

If You know where i can find what i need please let me know.

Allready thank's Onno.

Dave Foreman <davelf11@cox.net> wrote in message
news:<lcl620l2co259asv6d4ce4gkhe5r9asler@4ax.com>...
> On Fri, 06 Feb 2004 01:23:53 -0700, Dave Foreman <davelf11@cox.net> wrote:
>
> >On Fri, 06 Feb 2004 06:23:16 GMT, "Eddie Haskel" <wiseguy@clever.com>
> >wrote:
> >
> >>look at (and copy) the final circuit from a BE-5A (broadcast electronics) FM
> >>transmitter.It's very simple and very stable too. It likes about 200 watts
> >>of drive from a IPA. Will run nicely with 5000 volts at about 1 amp on the
> >>plate. In the BE transmitter the tube sits in a cavity, with the plate being
> >>slide tuned. A coupling loop sits close to the tube....Eddie
> >>
> >>"Onno de Vries." <mail@catv-solutions.nl> wrote in message
> >>news:bfa23d16.0402040943.7beda11a@posting.google.com...
> >>> My name is Onno de Vries and i'm living in the Netherland and building
> >>> big amps is my hobby.
> >>> I just bought a 4CX 5000A on a radio market here for a good price (180
> >>> Euro) including socket.
> >
> >SNIP
> >
> >>>
> >>> Greetings.....Onno
> >>
> >
> >the 4CX5000A takes 10 Volts at 75 Amps, if I remember correctly.
> >Dave F.
>
> Meant to say on the filiment, I had one at one time and
> mostly used as a paper weight.
> Dave F.

1053. Re: what will plug into a Fluke 87's test-lead jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 02:01:46 UTC
From: hhc314@yahoo.com
Message-ID: <7ce4e226.0402061801.36c02176@posting.google.com>
Source record: 28840
Cross-posted to:
sci.electronics.equipment,sci.electronics.repair,alt.engineering.electrical,alt.engineering.maintenance,rec.radio.amateur.homebrew

cornytheclown@hotmail.com (cornytheclown) wrote in message
news:<8e8f59d4.0402052102.55050acf@posting.google.com>...
> hhc314@yahoo.com (Harry Conover) wrote in message
news:<7ce4e226.0401201146.14605931@posting.google.com>...

> > Even my cheap little Wavetek 5XL employs connectors of the shrouded
> > gendre, and while you probably can jam a banana plug into them (or a
> > twisted paper clip for that matter), you would negate the safety
> > features of the shrouded connector design and in some applications
> > their use would not only be unsafe but illegal.
> >
> >
> >
>
> illegal under what authority ??? osha ???

That is one example.

Harry C.

1054. Re: what will plug into a Fluke 87's test-lead jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 02:57:32 UTC
From: "Daniel L. Belton" <abuse@spam.gov>
Message-ID: <wuYUb.11418$cc.9262@fe3.columbus.rr.com>
Source record: 28841
Cross-posted to:
sci.electronics.equipment,sci.electronics.repair,alt.engineering.electrical,alt.engineering.maintenance,rec.radio.amateur.homebrew

Harry Conover wrote:

> cornytheclown@hotmail.com (cornytheclown) wrote in message
news:<8e8f59d4.0402052102.55050acf@posting.google.com>...
>
>>hhc314@yahoo.com (Harry Conover) wrote in message
news:<7ce4e226.0401201146.14605931@posting.google.com>...
>
>
>>>Even my cheap little Wavetek 5XL employs connectors of the shrouded
>>>gendre, and while you probably can jam a banana plug into them (or a
>>>twisted paper clip for that matter), you would negate the safety
>>>features of the shrouded connector design and in some applications
>>>their use would not only be unsafe but illegal.
>>>
>>>
>>>
>>
>>illegal under what authority ??? osha ???
>
>
> That is one example.
>
> Harry C.

My guess would be that if you are using it for personal use, the OSHA
has no authority.

Also, if you are using it for personal use, then plugging a banana plug
into the jack, while negating any safety features, would not be illegal.
The jacks are actually the same as the banana jacks, but added the
extra covering over the plug for safety, so you would not damage the
jack on any way by plugging in a standard banana plug.

All this would change if you are in fact using it in a commercial
environment, because then the OSHA regulations would come into the
picture, along with others as well.

1055. Re: messing with a car radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 03:32:56 UTC
From: tommyknocker <tomynokr@uucp.hell>
Message-ID: <1028n3f39rh5qb4@corp.supernews.com>
Source record: 28842
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.shortwave

ellisc wrote:

> I have an 80s model delco am/fm radio. I'd like to attach an external
> long wire AM antenna, an external FM antenna, and rig something up so
> I can listen to it with headphones at bedside.
>
> Questions:
>
> 1. What do I need to do/build the headphone connection? Can I put
> something together using the car radio speaker wires?
>
> 2. Is it possible to hook up the long wire antenna without getting too
> complicated? Can I use the antenna plug on the radio in some way, or
> will I have to get inside the box? I don't know a lot about
> electronics. I have a soldering iron and have fixed the occasional
> loose wire on things around the house, but not much more than that.
>
> Or should I just forget it and buy a portable receiver? I mainly want
> to listen to AM talk at night and a particular FM college station in
> the next town. I read on several posts about using a car radio
> because of the AM reception.
>
> I've also thought about buying a used Grundig receiver, in particular
> the S350. I think having the option of listening to shortwave might
> be fun. Does this thing put out good audio via headphones?
>
> Thanks.

It would be easier to buy a normal radio. For AM a CCRadio or GE
Superadio 3 would work. The best FM reciever there is is the Tivoli
Audio Henry Kloss Model One, but be prepared to plunk down mucho dinero
for one ($100 last time I checked) and it's not that great on AM. I'd go
with a SR3, or you can try to get an SR2, which some think had better
build quality, but since it's (obviously) an earlier, out of production
model it's hard to find.

1056. Re: BFO freq how far down SSB filter skirt?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 03:55:56 UTC
From: Tom Holden <holden_family@sympatico.ca>
Message-ID: <9kZUb.39883$9U5.1535141@news20.bellglobal.com>
Source record: 28843

Tom Holden wrote:
> ARRL Handbook says that the BFO frequency should be at
> the -20dB point down the skirt of the SSB filter. Pete,
> KE9OA, says -24dB.
> 1. What is the reasoning behind these choices?
> 2. How critical is it that the BFO be so positioned?
> 3. Wouldn't the shape factor have some bearing on where
> it should be?
> 4. Is linear interpolation between the -6 and -60dB
> points accurate enough to determine the BFO freq?

Thanks for all the useful replies! I neglected to explain that this question is related to upgrading a particular receiver and another design target is that the BFO frequency must be fixed at +/-1500Hz from the filter and IF centre frequency (1 side for USB, the other for LSB) due to the way this double conversion receiver tunes and displays frequency. So it is more a question of determining what filter bandwidth and shape would be most suitable. By targetting -20 to -24dB attenuation with this offset, I computed that example filters suited to that offset would have -6dB/-60dB bandwidths and corresponding audio passbands of:
1) 2kHz/5.4kHz ----- 500-2500Hz
2) 2.3kHz/4.7kHz --- 350-2650Hz
3) 2.5kHz/4.2kHz --- 250-2750Hz
Do these calculations seem reasonable?

Examples 2 and 3 seem to be acceptable for communications speech but the steeper the skirts the greater the risk that filter tolerances will place the BFO somewhere else on the skirts well removed from the -20dB target. Are there any economical 455kHz filters with the characteristics of examples 2 or 3 with symmetrical skirts?

TIA ,
Tom

1057. does "Bird" have a homepage??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 04:32:07 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1076128329.199509@smtp-1.griffin.com>
Source record: 28844

cant find bird's website..thats the people who make rf test equipment..ie 43 wattmeter..can someone point the way please..

thanks.

1058. bird dummy load question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 04:37:18 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1076128638.839217@smtp-1.griffin.com>
Source record: 28845

looking for details in construction of bird 500w dummy load..have aquired large 50r ceramic rf resistor, but dont want to go down oilcan route, cos of the mess and they look crap..wish to make bird style one..how are they made???whats in the large horizontal ali cylinder???resistor..oil??if so wheres the pressure release valve??

help..

thanks..

g0zen..

oh not so easy to buy the real thing here without spending lots of wonga..and being a radio ham i dont want to do that...

1059. Re: Bandwidth vs. Noise,,,Take 2

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 04:41:17 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1028r322h8daq75@corp.supernews.com>
Source record: 28846

But I did -- assuming white noise, you should gain somewhere in the neighborhood of a 6x improvement in signal power vs. noise power, which works out to around 8dB. It probably doesn't actually do that well, so call it at least 6dB. It's interesting that you see a 2x range improvement, because radar path loss goes as distance squared, so you'd expect to need 12dB improvement.

Of course when one is really proud of ones modifications one tends to look harder...

"gudmundur" <hexter@blazenet.net> wrote in message news:1028fniqiqfvlb8@corp.supernews.com...
> Because that is just it..... It is a cheap radar with only AN 8 MHZ FACTORY
> SUPPLIED I.F. BANDWIDTH which is typical of these units. The newer ones
> have at least 2 bandwidths, and perhaps 3 on the really expensive units.
> I would not re-invent the wheel, I just want an answer in db snr.
>
> My answer is this, The screen full of echos looks real good after I do my
> voodoo. Now, can someone just answer the question?
>
> In article <t44820hhad9aabrveq0865vjeqfh1slcg4@4ax.com>, gaschafer@comcast.net
> says...
> >
> >Why not just use the narrow IF that is already in the radar for the
> >wider pulse width?
> >
> >73
> >Gary K4FMX
> >
> >On Fri, 06 Feb 2004 21:16:04 -0000, hexter@blazenet.net (gudmundur)
> >wrote:
> >
> >> Okay, let me restate, since I seem to be mis-understood,
> >>
> >> The I.F. is stagger tuned, with swamping resistors to kill the Q. It is
> >>running at 60mhz with a 6db bandwidth of 8mhz. It is part of a 'short pulse'
> >>marine radar unit. The pulses were like maybe .06microseconds at about 1khz
> >>rep rate.
> >>
> >> The transmitter now squirts out 'long pulses' of about .8microseconds.
> I

> >>want to raise the value of the swamp resistors, and 'un-stagger' the
tuning
> >>to get a 1.5mhz bandwidth at the 6db point.
> >>
> >> So the original question was "If I reduce the bandwidth from 8mhz to
1.5mhz,
> >>and everything else remains the same, what will happen to the signal to
> >>noise ratio in terms of db snr?
> >>
> >> I have done similar mods before, and the units work better than ever.
Just
> >>getting the swamp resistors up in value helps receiver gain more than
the
> >>numbers would apparently indicate, as I can see small craft at 24 miles,
when
> >>I could hardly see them at 12 miles before mods.
> >
>

1060. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 05:05:05 UTC
From: Hulen Smith <clay1952@cmaaccess.com>
Message-ID: <4024789e$0$32591$2c56edd9@news.cablerocket.com>
Source record: 28747
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

Dave, as I recall there was a design in one of the ARRL books..... maybe VHF manual that included an 829B. I also recall Motorola using this in a very old radio, don't remember exactly. Anyway I think it's good for 40-50 watts. I wouldn't mind having them if your looking to part with them.

Clay

"Dave" <Devarim@hotmail.com> wrote in message news:c88722f99e070f0dd405ad9e6fc50f36@news.meganetnews.com...
> Hi all,
>
> I just found several 829B tubes - believe it or not in my garage - I
> must have got them in a box of stuff at a ham fest at one time.
> A check on Ebay shows they're pretty much worthless for the sake
> of dollars, but they're so COOL! With the two plate caps that are
> actually just stiff pins, they look like little Martians.
>
> I put a pair on my office credenza just to look geeky cool. Fresh
> out of the box as NOS they look amazing - just like they were made
> yesterday. It's a pity they have no value - maybe as a homebrew
> project??
>
> So can someone tell me what they would have been used for?
> Something tells me they're a VHF power tube.
>
> Any application as a one-tube QRP rig of any sort? Any stories
> about using them in the past? I've built a lot of little rigs over the
> years, but never knew about the 829
>
> Thanks,
>
> Dave
>
>

1061. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 06:53:10 UTC
From: "Geoffrey G. Rochat" <777geoff777@777pkworks777.777com777>
Message-ID: <c020v4$4ra$1@news.utelfla.com>
Source record: 28748
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

> I just found several 829B tubes - believe it or not in my garage - I

<snip>

> So can someone tell me what they would have been used for?
> Something tells me they're a VHF power tube.
>
> Any application as a one-tube QRP rig of any sort? Any stories
> about using them in the past? I've built a lot of little rigs over the
> years, but never knew about the 829

The datasheet is here:

http://www.mif.pg.gda.pl/homepages/frank/sheets/049/8/829B.pdf

A lot of The Radio Amateur's Handbooks of the '50s and '60s had 892B projects in them. The 1953 edition, immediately to my left as I write this, has "A 100-Watt RF Amplifier for 50 and 144 Mc." on page 405. It runs push-pull class-C, up to 120 Watts CW or FM, and 100 Watts AM.

And the following fellow has gone to an awful lot of trouble to use two 829Bs in parallel single-ended triode mode in a stereo amplifier:

http://www.pmillett.addr.com/829b_amplifier.htm

1062. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 07:01:09 UTC
From: averyfineman@aol.com
Message-ID: <20040207020109.07984.00000493@mb-m22.aol.com>
Source record: 28752

In article <fmCUb.12231$gl2.8324@lakeread05>, " Uncle Peter"
<radioconnectionNO@cox.netSPAM> writes:

>"Dave" <Devarim@hotmail.com> wrote in message
>news:c88722f99e070f0dd405ad9e6fc50f36@news.meganetnews.com...
>> Hi all,
>>
>> I just found several 829B tubes - believe it or not in my garage - I
>> must have got them in a box of stuff at a ham fest at one time.
>> A check on Ebay shows they're pretty much worthless for the sake
>> of dollars, but they're so COOL! With the two plate caps that are
>> actually just stiff pins, they look like little Martians.
>
>They are WWII military tubes. As you surmised, mostly for VHF
>work. The smaller cousin was the 832B tube, used in the
>SCR-522 transmitter (driver, PA stages). A very popular conversion
>for 2-meter AM through the 50s and early 60s. The modern
>version of the 829 is the 5894 power tube.

The 829 was the final amplifier in the AN/TRC-1 and AN/TRC-4
VHF radio relay transmitter that was first fielded in Europe in 1943.
70 to 90 MHz, crystal controlled, phase modulation at a low
frequency, multiplied many times. Probably designed about 1941
but no data on that. Dual pentode with common cathode, plates
brought out to heavy pins on the envelope top. Pushed and
operating at maximums, it can put out about 75 W at 6 Meters.

TRC-1 and TRC-8 (high VHF) radio relay equipment was on 24/7
"hot spares" service for landline coupling backup at Army station
ADA in Tokyo up to 1954. Had literal hands-on with those. :-)
Those TRC-1 transmitters ran for hours and hours and hours without
fail, 40 to 50 Watts RF output.

A small tale on Lubriplate from Hank Kolesnik's mention in another
thread: The old radio relay equipment had separate receiver and
and transmitter cases and the TRC-1s had brushless shaded-pole
fan motors in the lids. While very cheap, those shaded-pole motors
are quite reliable. They have a (felt?) lubricant pad for sleeve
bearings; no appreciable load to require ball bearings nor high speed.

A well-intentioned newbie on one shift decided to "improve motor
performance" with Lubriplate (then a very new product in 1954) and
loaded the lubricant pads with it. While Lubriplate is a very good
product, it is a SLOW-SPEED thing. The shaded-pole fan motors
would seize up eventually, their normal light oil lubricant displaced by
the Lubriplate. For about three months it was SOP for all shifts to have

the "VHF man" check all the fans. Any fan with low or no flow meant a bothersome job of removing the fan, replacing it with a spare, then soaking the lubricant pad for several hours in solvent, saturating it afterwards in the proper light oil, checking it out, keeping it as a spare for the next stopped fan. Really put a kink in my magazine reading on the night shifts...:-) Lubriplate is a fine lubricant for dial drives and shaft bearings but should NOT be used in motor bearings.

Other than one incident with a blown fuse in one transmitter, the dozen-plus AN/TRC-1s and TRC-8s ran and ran and ran reliably.

Len Anderson
retired (from regular hours) electronic engineer person

1063. Re: Bandwidth vs. Noise???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 07:01:10 UTC
From: averyfineman@aol.com
Message-ID: <20040207020110.07984.00000494@mb-m22.aol.com>
Source record: 28751

In article <sag620pf5tqd1571dfi503bd64jkulh43l@4ax.com>, Paul Keinanen
<keinanen@sci.fi> writes:

>On 05 Feb 2004 17:35:31 GMT, averyfineman@aol.com (Avery Fineman)
>wrote:
>
>> Signal to noise ratio changes as the _square_root_ of bandwidth
>> change.
>
>I do not quite understand this.
>
>Usually the signal to noise ratio is defined as the signal power S
>compared to the noise N (or compared to S+N). In a white noise
>environment with constant noise density, the noise power is directly
>proportional to bandwidth.
>
>If the noise bandwidth is larger than the required signal bandwidth,
>reducing the noise bandwidth will not affect the signal but only
>reduce the noise power directly proportional to the bandwidth
>(dropping the bandwidth to 1/4 will drop the noise power by 1/4 or 6
>dB and increase the SNR by 6 dB).
>
>However, if you looking at the noise _voltage_, it will drop by the
>square_root of the bandwidth. But dropping the bandwidth to 1/4 will
>drop the noise voltage to 1/2, which is again 6 dB.

My apologies for not stating a reference. Was thinking in terms of
voltage, a bad habit picked up with vacuum-state electronics many
moons ago. I've been working with FETs lately and am too
(for shame) conditioned to thinking in terms of signal voltages.

>In the OP's case, some of the signal sidebands are also cut, thus also
>reducing the signal power. Are you assuming something about the
>spectral or phase distribution of these sidebands (e.g. adding
>coherent side bands produce the sum of the sideband _voltages_, while
>adding noise from two side bands with random phase only produces a sum
>of sideband _power_).

Random noise POWER always adds directly. If the spectral
distribution of noise power is uniform, the noise power through a
bandwidth-limiting device is proportional to the bandwidth of that
device. Ergo, if there is a change in bandwidth, the amount of
noise power change is directly proportional to bandwidth change.

Normally for such things as radar, the receiver bandwidth is kept
wide to preserve the echo's shape (a very rectangular pulse if the

target is very reflective and a plane (not airplane) surface. The leading edge sharpness is very useful in determining precise range to the radar target.

In other applications, such as limiting the pulsed signal bandwidth to just a few sidebands on either side of the carrier, the received pulse is rounded, more rounded as the sidebands get down to just one set closest to carrier. If just a portion of the first (or major) SB set, the shape resembles the "cosine-squared" envelope, nowhere close to rectangular. That is sometimes called a "matched filter" condition where the bandwidth is equal to the pulse duration time inverse.

At RCA EASD, there was an R&D program for aircraft anti-collision that involved many carrier frequencies all spaced at 1 MHz intervals with 1 uSec pulse widths. Deliberate receiver limiting was used so the discrimination between frequencies depened highly on the matched-filter distortion. At 1 MHz away, a matched-filter would pass only the sideband content of the first two sidebands on one side; the resulting RF envelope would have a rounded "bow tie" shape with a reduced peak envelope. That made it relatively easy to discriminate against adjacent channels. While predicted in theory by the system designer, it nonetheless had a number of the senior staff (all very used to conventional RF pulse techniques) scratching their heads and doing many simulations. It worked very well in hardware but I've not seen any similar explanation in any texts before or since.

Something vaguely similar goes on in digital TV now, the video information sent digitally and the resulting digital pulse train shaped to reduce sideband content. That allows a nearly one-third bandwidth reduction so that a 6 MHz wide TV channel allotment can accept the information requiring at least 16 MHz bandwidth under conventional video modulation techniques. Obviously there is also the MPEG video compression also a part of the bandwidth reduction. Digital TV has an almost infinite S:N ratio down to the lower limit of its processing capability, none of the noise "snow" effects seen with early days of analog TV and distant TV stations "down in the mud."

Remotely, vaguely similar (:-) is the now-conventional 56K telephone line modem capable of sending high digital data rates over a 3 KHz (or less) telephone line bandwidth. While most of that bandwidth reduction is due to using a combination of AM and PM, there exists bandpass filtering of one sort or another to limit the sideband content of that combinatorial modulation. All of the techniques mentioned work in concert to present the best signal-to-noise ratio of each system.

Ever since the RCA SECANT project, I've gotten away from the conventional wide-bandwidth radar-like thinking in terms of RF pulses. Sometimes pulse shape distortion can be used to advantage. It depends on the application and not "staying in the box" all the time (holding to conventional thinking).

My apologies again for not stating my references to voltage instead of power in the previous message.

Len Anderson
retired (from regular hours) electronic engineer person

1064. Re: Bandwidth vs. Noise???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 07:01:12 UTC
From: averyfineman@aol.com
Message-ID: <20040207020112.07984.00000495@mb-m22.aol.com>
Source record: 28750

In article <3200347.0402051726.2237ce09@posting.google.com>, k7itm@aol.com (Tom Bruhns) writes:

>averyfineman@aol.com (Avery Fineman) wrote in message
>news:<20040205123531.06226.00002713@mb-m19.aol.com>...
>> In article <1023b18chupojc1@corp.supernews.com>, hexter@blazenet.net
>> (gudmundur) writes:
>>
>> > My current I.F. bandwidth is 8mhz at the 6db points. I am looking at
>pulses
>> >of .8microseconds length, or about 1.25mhz. If all else remains the same,
>> >and I change the swamping resistors, and tweak the slugs for a 1.5mhz I.F.
>> >bandwidth at the 6db points, what increase in signal to noise ratio should
>> >I see?
>>
>> Signal to noise ratio changes as the _square_root_ of bandwidth
>> change. Wouldn't be much of an effect going from 1.25 to 1.5 MHz.
>
>Um, he was starting with an 8MHz BW...

Ooops, mea culpa! My fault. Please see reply to Paul in other post.

>> With 0.8 uSec pulses and a 1.25 to 1.5 MHz bandwidth (I presume
>> Mega Hertz, not milli Hertz), the output envelope will be very
>> rounded, almost Guassian or "cosine-quared" in shape. Rounding
>> happens because of the limitation of passing the harmonics of the
>> pulsed RF; all you have left is the carrier frequency.
>
>Yes, the pulses will certainly be rounded when they come out of the
>filter (though they may have started that way anyway). But depending
>on the filter type, they may also incur lots of ringing, and if the
>pulses follow one after another at the right spacing, the phase of the
>energy in the pulse relative to the phase of the energy left in the
>filter will matter a whole lot in what you see coming out. The
>trailing edge of a rectangular pulse fed through a Chebychev filter
>isn't very Gaussian looking!

True. "Gaussian" shape is so often used incorrectly when so many equate that to the statistical distribution curve shape also referred to as "Gaussian." Chebs and Cauers (elliptical) all exhibit ringing in an L-C component application...but it isn't quite the same kind of shape resulting with equal group delays of SAW or digital filters.

In terms of RF Envelope shape, the envelope has little hangovers at the trailing edges (I call them "burbles" in my mind, heh heh). Now, some of that comes from energy stored-and-released-at-a-later-time

(commonly called "ringing") but I think (from analysis and simulation) that it is the result of pulse sideband energy content summation that includes the relative sideband phases.

When working with SAW filters at the 3rd generation of RCA's SECANT (previously mentioned in reply to Paul), there was almost NO ringing possible (or observed) and the "matched-filter" effect was absolutely as predicted and observed in the earlier generations using L-C filters.

>As for the original question, the answer depends on the spectral
>distribution of the noise...if it happens to be strongly peaked at the
>carrier frequency of the pulses, the narrowing won't make much
>difference; if it happens to be peaked at some other frequency, it may
>help a lot. If it's uniformly distributed, AND you keep the filter
>shape the same and narrow the bandwidth by 1.5:8, then you will have
>1.5/8 as much noise _power_. You'll also have somewhat less signal
>power, depending on the shape of the pulses. And of course, the
>filter won't get rid of noise that's introduced after the
>filter--fairly obvious but sometimes overlooked.

In looking at the basic system, one has to assume that the random noise IS uniform in energy distribution. If the real world has a different set, such as peaking at certain parts of the spectrum, that can be calculated later and overall S:N modified...while keeping all the other factors the same. Any other method of looking at too many variables at once results in long hours and a marked increase in aspirin intake. :-)

I've got a copy of Claude Elwood's original "Shannon's Law" 1948 paper in the BSTJ and still need to keep the Tylenol bottle handy when I study that again. It makes sense, but getting to the "sense" part isn't intuitive. Neither is time-domain response of filters. If it weren't for the
computer simulation programs, I'd still have to rely on old aphorisms of a very general nature. :-(

I once spent a fruitless night trying to figure out the spectral content of an RF pulse that was on for only one RF cycle. The next day I brown-bagged it and hooked up some test equipment during lunch hour to get the results. Rather remarkable spectral content shape and the RF waveshape was exactly one RF cycle as observed on a wideband scope. Never did finish the analysis. Sometimes ya hafta get down and dirty on the bench to prove a point and get results.

Len Anderson
retired (from regular hours) electronic engineer person

1065. Re: does "Bird" have a homepage??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 07:01:28 UTC
From: budgie <me@privacy.net>
Message-ID: <q73920p4bkdr1kuudv4g0ekj5tu07n17u6@4ax.com>
Source record: 28749

On Sat, 7 Feb 2004 04:32:07 -0000, "zindazenda" <zen@lineisp.co.uk> wrote:

>cant find bird's website..thats the people who make rf test equipment..ie 43
>wattmeter..can someone point the way please..

Google is your friend, even in a hard one like that.

Searched on Bird "all in URL" and the third hit was:

http://www.bird-electronic.com/

1066. Re: messing with a car radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 07:13:45 UTC
From: cde@rocketmail.com
Message-ID: <c057333a.0402062313.65dbf880@posting.google.com>
Source record: 28753
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.shortwave

tommyknocker <tomynokr@uucp.hell> wrote in message
news:<1028n3f39rh5qb4@corp.supernews.com>...
>
> It would be easier to buy a normal radio. For AM a CCRadio or GE
> Superadio 3 would work. The best FM reciever there is is the Tivoli
> Audio Henry Kloss Model One, but be prepared to plunk down mucho dinero
> for one ($100 last time I checked) and it's not that great on AM. I'd go
> with a SR3, or you can try to get an SR2, which some think had better
> build quality, but since it's (obviously) an earlier, out of production
> model it's hard to find.

The superradio isn't fm stereo, is it? I want stereo for fm listening.

1067. Re: Bandwidth vs. Noise,,,Take 2

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 11:58:26 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.00000043.007e3382@btinternet.com>
Source record: 28754

Hi,

> The I.F. is stagger tuned, with swamping resistors to kill the Q. It is
> running at 60mhz with a 6db bandwidth of 8mhz. It is part of a 'short pulse'
> marine radar unit. The pulses were like maybe .06microseconds at about 1khz
> rep rate.
>
> The transmitter now squirts out 'long pulses' of about .8microseconds. I
> want to raise the value of the swamp resistors, and 'un-stagger' the tuning
> to get a 1.5mhz bandwidth at the 6db point.
>
> So the original question was "If I reduce the bandwidth from 8mhz to 1.5mhz,
> and everything else remains the same, what will happen to the signal to
> noise ratio in terms of db snr?

I don't pretend to be able to answer this question completely as the subject is more complicated than it would seem. However, all things being equal, SNR (Ps/Pn) is inversely proportional to bandwidth so you would expect it to increase by 10 x log(8/1.5) ~ 7dB for the values you give.

It is important though that bandwidth and pulse length match for optimum results and in "Threshold Signals", MIT Rad Labs Vol. 24, they show experimental evidence that this is indeed the case (B x Tau = 1). However you intend to reduce the bandwidth by a factor of ~5 and to increase the pulse width by ~13 (a B x Tau increase from 0.5 to 2.5) and the graphs say that this should decrease the visible threshold by ~3dB.

There are a few other things I would mention. An increase in pulse-width will increase the power dissipation in the transmitter by the same factor, should reduce target discrimination (1us is 300m and so particularly important close-in) and that a wider bandwidth is helpful in simplifying tuning or reducing constraints on the system AFC.

Cheers - Joe, G3LLV

1068. Re: Bandwidth vs. Noise,,,Take 2

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 12:34:15 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.00000044.009efd9c@btinternet.com>
Source record: 28755

Hi,

Sorry, I should have said "increase the visible threshold by ~3dB".

In other words, a signal would have to be ~3dB stronger to be perceived against the background noise.

Cheers - Joe, G3LLV

1069. Re: Cardmatic update & ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 12:57:53 UTC
From: Lou deGonzague <nobody@nycap.rr.com>
Message-ID: <lh5Vb.48229$%72.47667@twister.nyroc.rr.com>
Source record: 28756
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

Thanks Henry, I see what you are saying. The pins come up to about an 1/8' from the top of the plate. One thing I just noticed, there is no pin in the 17A position, bottom left corner spot. I wonder if mine is missing or it was made that way?
"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message news:1028ao0p1j8pu59@corp.supernews.com...
> Lou
> Under the black cover over the matrix swtich there are 3 black bakelite
> slabs (3.5" X 4.5" X ~1/4") with 187 holes sandwiching 185 pins. With the
> black cover removed (2 screws) and the card plunger pushed in and you'll
> see that the sandwich "floats" on four 8-32 threaded posts. Each of these
> posts has 2 nuts sandwiching the slab sandwich. The position of the lower
> 4 nuts (I called these jam nuts) determines how far in the 185 pins go into
> their female counterpart where there is no hole in the card. If there's a
> hole in the card the pins must not make contact with their female
> counterpart, and this clearance is about the thickness of a dime. In
> addtion all these jam nuts must be on the same plane so that the sandwich
> is orthagonal and will not bind so it can move smoothly.
> A pix would have been easier but the batteries are being charged. Let me
> know if you still need a pix.
> 73
> hank wd5jfr
>
> "Lou deGonzague" <nobody@nycap.rr.com> wrote in message
> news:AIyUb.43723$%72.40707@twister.nyroc.rr.com...
> > This was a very interesting post Henry, I have one of these and it seems
> to
> > be working OK. I have everything except the cal cell is dead. I would
> like
> > to see a pic of those jam nuts that you shouldn't touch if possible as I
> > thought about cleaning the card reader.
> > "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
> > news:1025c94g572m1f2@corp.supernews.com...
> > > In this case the "assembler" needed flogging!
> > >
> > > hank wd5jfr
> > > "Jeffrey D Angus" <jangus@socal.rr.com> wrote in message
> > > news:QpwUb.7733$ow4.5271@twister.socal.rr.com...
> > > >
> > > >
> > > > Henry Kolesnik wrote:

> > > >
> > > > > It's fixed, a new day respite helps.
> > > > >
> > > > > Which just undescores what I've been telling my techs all
> > > > > along. VERIFY everything before you start flogging the
> > > > > assembly.
> > > > >
> > > > > Jeff
> > > > >
> > > > > --
> > > > > "They that can give up essential liberty to obtain a little
temporary
> > > > > safety deserve neither liberty nor safety." Benjamin Franklin
> > > > > "A life lived in fear is a life half lived."
> > > > > Tara Morice as Fran, from the movie "Strictly Ballroom"
> > > > >
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>
>

1070. Re: Cardmatic update & ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 15:15:34 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <102a08snd6fb039@corp.supernews.com>
Source record: 28757
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

There's 187 holes with 185 contact pins. A17 has a threaded guide post that sets the gap (about a dime) between the two female connectors that the pins connect when there's no hole in the card. H17 doesn't have a pin nor does it have the lower female solder connection, I guess they didn't need it. Perhaps when someone has or will find a need for the 186th pin we'll have to find an extra pin and a lower female contact and a place to route and terminate the wires.
73
hank wd5jfr

"Lou deGonzague" <nobody@nycap.rr.com> wrote in message news:lh5Vb.48229$%72.47667@twister.nyroc.rr.com...
> Thanks Henry, I see what you are saying. The pins come up to about an 1/8'
> from the top of the plate. One thing I just noticed, there is no pin in the
> 17A position, bottom left corner spot. I wonder if mine is missing or it
> was made that way?
> "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
> news:1028ao0p1j8pu59@corp.supernews.com...
> > Lou
> > Under the black cover over the matrix swtich there are 3 black bakelite
> > slabs (3.5" X 4.5" X ~1/4") with 187 holes sandwiching 185 pins. With the
> > black cover removed (2 screws) and the card plunger pushed in and you'll
> > see that the sandwich "floats" on four 8-32 threaded posts. Each of these
> > posts has 2 nuts sandwiching the slab sandwich. The position of the lower
> > 4 nuts (I called these jam nuts) determines how far in the 185 pins go into
> > their female counterpart where there is no hole in the card. If there's a
> > hole in the card the pins must not make contact with their female
> > counterpart, and this clearance is about the thickness of a dime. In
> > addtion all these jam nuts must be on the same plane so that the sandwich
> > is orthagonal and will not bind so it can move smoothly.
> > A pix would have been easier but the batteries are being charged. Let me
> > know if you still need a pix.
> > 73
> > hank wd5jfr

> >
> > "Lou deGonzague" <nobody@nycap.rr.com> wrote in message
> > news:AIyUb.43723$%72.40707@twister.nyroc.rr.com...
> > > This was a very interesting post Henry, I have one of these and it
seems
> > to
> > > be working OK. I have everything except the cal cell is dead. I would
> like
> > > to see a pic of those jam nuts that you shouldn't touch if possible as
I
> > > thought about cleaning the card reader.
> > > "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
> > > news:1025c94g572m1f2@corp.supernews.com...
> > > > In this case the "assembler" needed flogging!
> > > >
> > > > hank wd5jfr
> > > > "Jeffrey D Angus" <jangus@socal.rr.com> wrote in message
> > > > news:QpwUb.7733$ow4.5271@twister.socal.rr.com...
> > > > >
> > > > >
> > > > > Henry Kolesnik wrote:
> > > > >
> > > > > > It's fixed, a new day respite helps.
> > > > >
> > > > > Which just undescores what I've been telling my techs all
> > > > > along. VERIFY everything before you start flogging the
> > > > > assembly.
> > > > >
> > > > > Jeff
> > > > >
> > > > > --
> > > > > "They that can give up essential liberty to obtain a little
> temporary
> > > > > safety deserve neither liberty nor safety." Benjamin Franklin
> > > > > "A life lived in fear is a life half lived."
> > > > > Tara Morice as Fran, from the movie "Strictly Ballroom"
> > > > >
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1071. For Sale - 12 VDC Supplies

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 15:32:51 UTC
From: Brian <brian@NOSP0Miquest.net>
Message-ID: <Dy7Vb.17717$uM2.9192@newsread1.news.pas.earthlink.net>
Source record: 28758

I have about 15 spare wall warts that can be used to power a wide variety of low current items.

These are Panasonic transformers, with 120 VAC in and 12 VDC at 500 mw out.

I'm using a couple to power QRP transmitters, homebrew freq counter, a keyer, and circuits in that realm.

$6.50 each includes shipping in the USA

Panasonic Model KX-A11

They come with a plug on them, the center is wired for NEGATIVE. I have cut the plugs off the ones I am using and wired them back on with the center POSITIVE. Takes about 2 minutes to do this.

Let me know if you are interested.

72 de KB9BVN

--
==========
Agnus dei, qui tollis peccata mundi, dona nobis Pacem.
==========
KB9BVN/QRP QRP-L 1540 QRP-ARCI 10223
39.558 N 86.095 W Johnson Co., Indiana
GRID: EM69WN - Elecraft K1 - Attic Dipole - 5w
Member of the ARRL - SOC #400
FISTS 5695 CC 764 FPQRP #-57
==========

1072. Re: BFO freq how far down SSB filter skirt?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 15:36:39 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <bC7Vb.65496$6O4.1949810@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28759

Hi Tom,
You can purchase the "low cost" Mechanical Filters from Rockwell
Filter Products Division, in Costa Mesa, Ca. These would be the 526-8695-XXX
series. Price, including shipping is around 86USD. The Z in/out is 2k, and
no resonating capacitors are needed, as long as your strays are below 30pF.
These are the mechanical filters that are used in the AOR3030, AOR7030, and
the Palstar R30, to name a few.
The -24dB spec is something I remember from my old HT-46 transmitter, so it
doesn't need to be taken as gospel. A good thing is to listen to how the
transmitted signal sounds.

Pete

"Tom Holden" <holden_family@sympatico.ca> wrote in message
news:9kZUb.39883$9U5.1535141@news20.bellglobal.com...
> Tom Holden wrote:
> > ARRL Handbook says that the BFO frequency should be at
> > the -20dB point down the skirt of the SSB filter. Pete,
> > KE9OA, says -24dB.
> > 1. What is the reasoning behind these choices?
> > 2. How critical is it that the BFO be so positioned?
> > 3. Wouldn't the shape factor have some bearing on where
> > it should be?
> > 4. Is linear interpolation between the -6 and -60dB
> > points accurate enough to determine the BFO freq?
>
> Thanks for all the useful replies! I neglected to explain that this
question
> is related to upgrading a particular receiver and another design target is
> that the BFO frequency must be fixed at +/-1500Hz from the filter and IF
> centre frequency (1 side for USB, the other for LSB) due to the way this
> double conversion receiver tunes and displays frequency. So it is more a
> question of determining what filter bandwidth and shape would be most
> suitable. By targetting -20 to -24dB attenuation with this offset, I
> computed that example filters suited to that offset would have -6dB/-60dB
> bandwidths and corresponding audio passbands of:
> 1) 2kHz/5.4kHz ----- 500-2500Hz
> 2) 2.3kHz/4.7kHz --- 350-2650Hz
> 3) 2.5kHz/4.2kHz --- 250-2750Hz
> Do these calculations seem reasonable?
>
> Examples 2 and 3 seem to be acceptable for communications speech but the
> steeper the skirts the greater the risk that filter tolerances will place
> the BFO somewhere else on the skirts well removed from the -20dB target.
Are

> there any economical 455kHz filters with the characteristics of examples 2
> or 3 with symmetrical skirts?
>
> TIA ,
> Tom
>
>

1073. Re: does "Bird" have a homepage??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 15:38:51 UTC
From: Cambio <CAM@ripped.net>
Message-ID: <fE7Vb.8733$IF1.2533@fed1read01>
Source record: 28760

```
http://www.bird-electronic.com/

--
73- Cambio - Keyboard To You (:-)
--------------------
"zindazenda" <zen@lineisp.co.uk> wrote in message
news:1076128329.199509@smtp-1.griffin.com...
> cant find bird's website..thats the people who make rf test equipment..ie
43
> wattmeter..can someone point the way please..
>
> thanks.
>
>
```

1074. Help with dipole please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 17:45:29 UTC
From: Hammer <nubob5001@yahoo.com>
Message-ID: <zB9Vb.7889$5f.7856@read1.cgocable.net>
Source record: 28761

Hi,
Putting up a 10 through 160 or 10 through 80 meters dipole. I have lots of wire and coax and a 1:1 balon. Interested in how the shape or form of this dipole should be to work properly? I have to put it into two trees to get height. Are there any good links or sights to learn proper making and installation?
Thanks.

1075. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 19:09:51 UTC
From: Uncle Peter <radioconnectionNO@cox.netSPAM>
Message-ID: <FJaVb.15173$gl2.11446@lakeread05>
Source record: 28762
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

"Dave" <Devarim@hotmail.com> wrote in message
news:4bddccded265bb98a0c3f9d6e4d5621c@news.meganetnews.com...
> Many thanks to all who replied, both here and by email.
> They sound like a great tube for LOTS of purposes. My
> favorite suggestion was building a regen, using each
> half in place of the 6AQ5's called for in the ARRL handbook
> design from the 50's!
>
> How about an oscillator / amplifier for HF, running low
> plate voltage for a relatively low RF output? Seems they
> should be able to do that - and having a separate oscillator
> stage it wouldn't be prone to runaway and exessive crystal
> current. And it would look VERY cool!
>

I'd think running the 829 in parallel for a HF PA, with another
829 as a P-P modulator would be a neat project.

Pete

1076. Re: messing with a car radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 19:10:25 UTC
From: Uncle Peter <radioconnectionNO@cox.netSPAM>
Message-ID: <aKaVb.15174$gl2.34@lakeread05>
Source record: 28763
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.shortwave

"ellisc" <cde@rocketmail.com> wrote in message
news:c057333a.0402061025.a119808@posting.google.com...
> I have an 80s model delco am/fm radio. I'd like to attach an external
> long wire AM antenna, an external FM antenna, and rig something up so
> I can listen to it with headphones at bedside.
>
> Questions:
>
> 1. What do I need to do/build the headphone connection? Can I put
> something together using the car radio speaker wires?
>
> 2. Is it possible to hook up the long wire antenna without getting too
> complicated? Can I use the antenna plug on the radio in some way, or
> will I have to get inside the box? I don't know a lot about
> electronics. I have a soldering iron and have fixed the occasional
> loose wire on things around the house, but not much more than that.
>
> Or should I just forget it and buy a portable receiver? I mainly want
> to listen to AM talk at night and a particular FM college station in
> the next town. I read on several posts about using a car radio
> because of the AM reception.
>
> I've also thought about buying a used Grundig receiver, in particular
> the S350. I think having the option of listening to shortwave might
> be fun. Does this thing put out good audio via headphones?
>
> Thanks.

1077. Re: messing with a car radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 19:12:37 UTC
From: Uncle Peter <radioconnectionNO@cox.netSPAM>
Message-ID: <fMaVb.15176$gl2.13206@lakeread05>
Source record: 28764
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.shortwave

"ellisc" <cde@rocketmail.com> wrote in message
news:c057333a.0402061025.a119808@posting.google.com...
> I have an 80s model delco am/fm radio. I'd like to attach an external
> long wire AM antenna, an external FM antenna, and rig something up so
> I can listen to it with headphones at bedside.
>
> Questions:
>

Depending on the frondend design... Early AM car radios included the
antenna feedline capacitance as part of the tuned circuit; and included
a trimmer to fine tune the radio tracking to match the antenna. The
antenna was connected to a very high impedance point of the RF
stage tank.

Later designs used aperiodic frontends, and were less critical. You
might loss ground using a long antenna on the set, depending on its
vintage.

pete

1078. Re: does "Bird" have a homepage??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 20:19:29 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1076185169.574909@smtp-1.griffin.com>
Source record: 28765

thanks..
"Cambio" <CAM@ripped.net> wrote in message
news:fE7Vb.8733$IF1.2533@fed1read01...
> http://www.bird-electronic.com/
>
> --
> 73- Cambio - Keyboard To You (:-)
> --------------------
> "zindazenda" <zen@lineisp.co.uk> wrote in message
> news:1076128329.199509@smtp-1.griffin.com...
> > cant find bird's website..thats the people who make rf test
equipment..ie
> 43
> > wattmeter..can someone point the way please..
> >
> > thanks.
> >
> >
>
>

1079. Re: BFO freq how far down SSB filter skirt?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-07 23:21:26 UTC
From: Tom Holden <holden_family@sympatico.ca>
Message-ID: <OoeVb.26999$bp1.906090@news20.bellglobal.com>
Source record: 28766

Pete KE9OA wrote:
> Hi Tom,
> You can purchase the "low cost" Mechanical
> Filters from Rockwell Filter Products Division, in Costa
> Mesa, Ca. These would be the 526-8695-XXX series. Price,
> including shipping is around 86USD. The Z in/out is 2k,
> and no resonating capacitors are needed, as long as your
> strays are below 30pF. These are the mechanical filters
> that are used in the AOR3030, AOR7030, and the Palstar
> R30, to name a few.
> The -24dB spec is something I remember from my old HT-46
> transmitter, so it doesn't need to be taken as gospel. A
> good thing is to listen to how the transmitted signal
> sounds.
>
> Pete

Pete, that's about as much as I paid for the receiver I'm trying to improve!
A Radio Shack DX-394. I'm hoping to find something for a lot less. Probably
an unrealistic (no pun intended) expectation.

Tom

1080. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-08 00:02:34 UTC
From: k7itm@aol.com
Message-ID: <3200347.0402071602.43ecc1aa@posting.google.com>
Source record: 28767
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

Lots of discussion about using the 829 for VHF power amplifiers, and even audio amplifiers and conversation pieces. But I haven't seen mention here of their use in pulse generators. I have a TS592A/UPM15 pulse generator that uses one in its output stage (not all my test equipment is very new ;-), and one of the early uses of them was as a driver in "hard tube" radar pulse modulators, developed fairly early in WWII. They were used in "Model 3 hard tube pulsers" for example, where the two sections were run in parallel, outputting well over a kilowatt during the microsecond long pulse, 0.1% duty cycle. The very similar 3E29 also get lots of mention in early radar pulser history. Perhaps someone knows: was the 3E29 an 829 re-designed and/or specifically tested for use in pulsers? What was the 829 originally intended for, and when was it first introduced? Who made the first ones, RCA or someone else?

Cheers,
Tom

"Dave" <Devarim@hotmail.com> wrote in message
news:<c88722f99e070f0dd405ad9e6fc50f36@news.meganetnews.com>...
> Hi all,
>
> I just found several 829B tubes - believe it or not in my garage - I
> must have got them in a box of stuff at a ham fest at one time.
> A check on Ebay shows they're pretty much worthless for the sake
> of dollars, but they're so COOL! With the two plate caps that are
> actually just stiff pins, they look like little Martians.
>
> I put a pair on my office credenza just to look geeky cool. Fresh
> out of the box as NOS they look amazing - just like they were made
> yesterday. It's a pity they have no value - maybe as a homebrew
> project??
>
> So can someone tell me what they would have been used for?
> Something tells me they're a VHF power tube.
>
> Any application as a one-tube QRP rig of any sort? Any stories
> about using them in the past? I've built a lot of little rigs over the
> years, but never knew about the 829
>
> Thanks,
>
> Dave

1081. Re: Help with dipole please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-08 00:05:51 UTC
From: jgboyles@aol.com
Message-ID: <20040207190551.04082.00000643@mb-m05.aol.com>
Source record: 28768

>Putting up a 10 through 160 or 10 through 80 meters dipole. I have lots of
>wire and coax and a 1:1 balon. Interested in how the shape or form of this
>dipole should be to work properly

Hammer, An all band dipole should not be fed with coax. On many of the bands you want to work, the coax will have too much loss, and may fail due to the extreme voltages that may be present.
A better choice would be a dipole, as long and high as you can make it. Feed it with 450 ohm ladder line to an antenna tuner in your shack. The 1:1 balun should insert between the line and your tuner. You now have an all band efficient dipole.
BTW the antenna newsgroup would be better to ask this type of question, you will get loads of answers there.
73 Gary N4AST

1082. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-08 00:14:59 UTC
From: Bill Janssen <billjNOTTHIS@ieee.org>
Message-ID: <7cfVb.15039$mC3.4057@news01.roc.ny>
Source record: 28769
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

Tom Bruhns wrote:

>Lots of discussion about using the 829 for VHF power amplifiers, and
>even audio amplifiers and conversation pieces. But I haven't seen
>mention here of their use in pulse generators. I have a TS592A/UPM15
>pulse generator that uses one in its output stage (not all my test
>equipment is very new ;-), and one of the early uses of them was as a
>driver in "hard tube" radar pulse modulators, developed fairly early
>in WWII. They were used in "Model 3 hard tube pulsers" for example,
>where the two sections were run in parallel, outputting well over a
>kilowatt during the microsecond long pulse, 0.1% duty cycle. The very
>similar 3E29 also get lots of mention in early radar pulser history.
>Perhaps someone knows: was the 3E29 an 829 re-designed and/or
>specifically tested for use in pulsers? What was the 829 originally
>intended for, and when was it first introduced? Who made the first
>ones, RCA or someone else?
>
>Cheers,
>Tom
>
>
>"Dave" <Devarim@hotmail.com> wrote in message
news:<c88722f99e070f0dd405ad9e6fc50f36@news.meganetnews.com>...
>
>
>>Hi all,
>>
>>I just found several 829B tubes - believe it or not in my garage - I
>>must have got them in a box of stuff at a ham fest at one time.
>>A check on Ebay shows they're pretty much worthless for the sake
>>of dollars, but they're so COOL! With the two plate caps that are
>>actually just stiff pins, they look like little Martians.
>>
>>I put a pair on my office credenza just to look geeky cool. Fresh
>>out of the box as NOS they look amazing - just like they were made
>>yesterday. It's a pity they have no value - maybe as a homebrew
>>project??
>>
>>So can someone tell me what they would have been used for?
>>Something tells me they're a VHF power tube.
>>
>>Any application as a one-tube QRP rig of any sort? Any stories
>>about using them in the past? I've built a lot of little rigs over the

>>years, but never knew about the 829
>>
>>Thanks,
>>
>>Dave
>>
>>
Don't have answeres to all those questions but the 3E29 had a "better"
cathode to handle
the peak current requirements..

Bill K7NOM

1083. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-08 01:11:12 UTC
From: Ross Matheson <rdm@orcon.net.zn>
Message-ID: <vp0b201h5omg66mosrufdp8de7q05uup3o@4ax.com>
Source record: 28770
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

"Geoffrey G. Rochat" <777geoff777@777pkworks777.777com777> wrote:
in rec.radio.amateur.boatanchors<c020v4$4ra$1@news.utelfla.com>,

[snip]

: A lot of The Radio Amateur's Handbooks of the '50s and '60s had 892B
: projects in them. The 1953 edition, immediately to my left as I write this,
: has "A 100-Watt RF Amplifier for 50 and 144 Mc." on page 405. It runs
: push-pull class-C, up to 120 Watts CW or FM, and 100 Watts AM.

Gone by the 1955 edition I have. The 1947 ed uses it in 3 2M TX circuits.

I have 3 RCA 829B and 6 or 7 slightly sturdier UK mil CV2666 equivalents,
plus some CV178A / 5894 bottles I intend to use sometime in something:-)

: And the following fellow has gone to an awful lot of trouble to use two
: 829Bs in parallel single-ended triode mode in a stereo amplifier:
:
: http://www.pmillett.addr.com/829b_amplifier.htm

These (Chinese) stereo push-pull amplifiers are commercial products:

http://www.cayin.de/amps_de/endverstarker/929D/929D.htm
http://www.cayin.de/amps_de/vollverstarker/500/500mk.htm
http://www.cayin.de/amps_de/endverstarker/800mk/800mk.htm
http://www.cayin.de/amps_de/endverstarker/800/800.htm

They substitute Russian FU29 or GU29 or US 3E29 in some.

You can get a rough translation by copying & pasting
http://translate.google.com/translate_c?hl=en&u=
in front of the links, with no space between the two.

These seem to be out of production now by the manufacturer;
they used to be on the vaccum tube amplifier link from their English index:
http://www.sparkaudio.com/eproduct.asp

RdM
(operators certificate in 1969 at 17 - never actually got on air - one day!)

1084. Re: Help with dipole please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-08 04:27:14 UTC
From: Doug Smith W9WI <w9wi@invalid.invalid>
Message-ID: <4025BA9B.6080706@invalid.invalid>
Source record: 28771

Hammer wrote:
> Hi,
> Putting up a 10 through 160 or 10 through 80 meters dipole. I have lots of
> wire and coax and a 1:1 balon. Interested in how the shape or form of this
> dipole should be to work properly? I have to put it into two trees to get
> height. Are there any good links or sights to learn proper making and
> installation?

A lot depends on how much space you have.

A straight dipole with a 1:1 balun and coax will only cover one band.
Well, maybe two if you cut it for 40 meters. (it'll then work OK on 15
as well)

You have a few other options:

- Make the dipole as long as possible (the exact length is unimportant);
don't use the balun; use ladder line instead of coax; and connect it to
a tuner in the shack.

- Run several dipoles in parallel. 132' for 80m, 66' for 40m, 33' for
20m, etc. They can all share the same balun and coax.

- Trade the 1:1 balun for a 4:1 and put up an off-center-fed dipole. A
132' antenna, with 44' on one side and 88' on the other, will work well
on every band between 80 and 10 with the exception of 15. (and it's
close enough on 15 that if your rig has an autotuner, it'll work there
too)

I've got the latter antenna. It's the most "bang for the buck" in my
antenna collection. (it even works halfway decent for DXing the AM
broadcast band!)

A good general rule for wire antennas is as high as possible, as
straight as possible, and as far from obstructions as possible. And
don't sweat it if "as far as possible" isn't very far. (UNLESS the
obstruction is a power line!)
--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com

1085. Re: 433MHz tracker

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-08 04:32:50 UTC
From: Mike Burch <mburch46@mchsi.com>
Message-ID: <SZiVb.240657$I06.2726599@attbi_s01>
Source record: 28772

This is probably useless info but I used to have a couple of wx
radiosonds that transmitted on that freq.

Mike K8MB
>

1086. Re: Cardmatic update & ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-08 04:58:12 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <u1eb20d91g8hio25ref2egjo3r3o7qkeip@4ax.com>
Source record: 28773
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

On Thu, 05 Feb 2004 20:50:02 -0600 Jim Adney <jadney@vwtype3.org>
wrote:

>On Thu, 5 Feb 2004 11:39:30 -0600 "Henry Kolesnik"
><wd5jfr@oklahoma.net> wrote:
>
>>But before doing that I thought I'd recheck the 10K ohm Gm
>>bridge resistors, pot and as I was connecting my Fluke to the10K resistor
>>lead I could see it was wrapped around the post but not soldered, same for
>>all of them.
>
>Very nice going, but I'm not able to see your photos (server doesn't
>have that newsgroup) so could you describe for the rest of us what
>this connection looked like?

Thanks to those who sent photos. Those "posts" are more commonly
called "turrets", I believe.

Finding these missed solder joints must have given you a VERY well
deserved good feeling. Congratulations.

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA

1087. Re: 4CX5000A

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-08 05:23:45 UTC
From: Eddie Haskel <wiseguy@clever.com>
Message-ID: <BJjVb.22550$aA3.5791@newssvr25.news.prodigy.com>
Source record: 28774

It takes 5.0Volts at 90Amps! dave,,,,,Eddie
"Dave Foreman" <davelf11@cox.net> wrote in message
news:amj620ppchmsi5920kukkfnjvgr04hgd22@4ax.com...
> On Fri, 06 Feb 2004 06:23:16 GMT, "Eddie Haskel" <wiseguy@clever.com>
> wrote:
>
> >look at (and copy) the final circuit from a BE-5A (broadcast electronics)
FM
> >transmitter.It's very simple and very stable too. It likes about 200
watts
> >of drive from a IPA. Will run nicely with 5000 volts at about 1 amp on
the
> >plate. In the BE transmitter the tube sits in a cavity, with the plate
being
> >slide tuned. A coupling loop sits close to the tube....Eddie
> >
> >"Onno de Vries." <mail@catv-solutions.nl> wrote in message
> >news:bfa23d16.0402040943.7beda11a@posting.google.com...
> >> My name is Onno de Vries and i'm living in the Netherland and building
> >> big amps is my hobby.
> >> I just bought a 4CX 5000A on a radio market here for a good price (180
> >> Euro) including socket.
>
> SNIP
>
> >>
> >> Greetings.....Onno
> >
>
> the 4CX5000A takes 10 Volts at 75 Amps, if I remember correctly.
> Dave F.
>

1088. Re: 4CX5000A oops

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-08 05:34:43 UTC
From: Eddie Haskel <wiseguy@clever.com>
Message-ID: <TTjVb.22556$tD3.16194@newssvr25.news.prodigy.com>
Source record: 28775

Onno...call them on the phone, their support is very good. They are located
in Quincy, Illinois.

Broadcast Electronics
4100 North 24th Street
Quincy ,Il. 62305
(217)224-9600

I have toured their facility, they are a very nice group of people. The
factory is in a very quaint rural setting in Quincy. It's a "Stone-throw"
from the Harris Factory. A lot of the people that work at BE are ham radio
ops...I suspect you could get a hold of a BE-5A manual pretty easy.
Be VERY careful on the filiment voltage on the 4CX5000..it likes to be at
5.0 Volts. Don't let it sag below 4.8 Volts and over 5.25 Volts is not good
for it either. I have seen the BE-5A run at 72% eff..thats pretty
good.....Eddie
"Onno de Vries." <mail@catv-solutions.nl> wrote in message
news:bfa23d16.0402061758.1419c97e@posting.google.com...
> Hallo Eddy. Thanks for responding. I did some seaching and i
> can find this BE-5A manny time's but i cannot find photo's, schematics
> ,manuals wich can explane me a bit more in detail so i can build the
> thing.
> This time better than before,This double resonator.
>
> If You know where i can find what i need please let me know.
>
> Allready thank's Onno.
>
>
> Dave Foreman <davelf11@cox.net> wrote in message
news:<lcl620l2co259asv6d4ce4gkhe5r9asler@4ax.com>...
> > On Fri, 06 Feb 2004 01:23:53 -0700, Dave Foreman <davelf11@cox.net>
wrote:
> >
> > >On Fri, 06 Feb 2004 06:23:16 GMT, "Eddie Haskel" <wiseguy@clever.com>
> > >wrote:
> > >
> > >>look at (and copy) the final circuit from a BE-5A (broadcast
electronics) FM
> > >>transmitter.It's very simple and very stable too. It likes about 200
watts
> > >>of drive from a IPA. Will run nicely with 5000 volts at about 1 amp on
the
> > >>plate. In the BE transmitter the tube sits in a cavity, with the plate
being

> > >>slide tuned. A coupling loop sits close to the tube....Eddie
> > >>
> > >>"Onno de Vries." <mail@catv-solutions.nl> wrote in message
> > >>news:bfa23d16.0402040943.7beda11a@posting.google.com...
> > >>> My name is Onno de Vries and i'm living in the Netherland and
building
> > >>> big amps is my hobby.
> > >>> I just bought a 4CX 5000A on a radio market here for a good price
(180
> > >>> Euro) including socket.
> > >
> > >SNIP
> > >
> > >>>
> > >>> Greetings.....Onno
> > >>
> > >
> > >the 4CX5000A takes 10 Volts at 75 Amps, if I remember correctly.
> > >Dave F.
> >
> > Meant to say on the filiment, I had one at one time and
> > mostly used as a paper weight.
> > Dave F.

1089. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-08 06:11:31 UTC
From: Roger Halstead <Delete-Invallid.groups@tm.net>
Message-ID: <alkb20p8nkhkogvcu0bglvq315qbeq5akj@4ax.com>
Source record: 28776
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

On Sun, 08 Feb 2004 14:11:12 +1300, Ross Matheson <rdm@orcon.net.zn>
wrote:

>"Geoffrey G. Rochat" <777geoff777@777pkworks777.777com777> wrote:
> in rec.radio.amateur.boatanchors<c020v4$4ra$1@news.utelfla.com>,
>
>[snip]
>
>: A lot of The Radio Amateur's Handbooks of the '50s and '60s had 892B
>: projects in them. The 1953 edition, immediately to my left as I write this,
>: has "A 100-Watt RF Amplifier for 50 and 144 Mc." on page 405. It runs
>: push-pull class-C, up to 120 Watts CW or FM, and 100 Watts AM.
>
>Gone by the 1955 edition I have. The 1947 ed uses it in 3 2M TX circuits.
>
>I have 3 RCA 829B and 6 or 7 slightly sturdier UK mil CV2666 equivalents,
>plus some CV178A / 5894 bottles I intend to use sometime in something:-)

There used to be a *relatively* popular surplus rig that used three of
them. I remember they were lined up and as I recall the final had a
tuned line output link coupled to the antenna.

Don't remember what it was called. That was nigh onto 40 years ago.
>
<snip>

Roger Halstead (K8RI & ARRL life member)
(N833R, S# CD-2 Worlds oldest Debonair)
www.rogerhalstead.com

1090. homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-08 14:58:58 UTC
From: Uwe Langmesser <outhouse@midcoast.com>
Message-ID: <BC4BB8E5.CAEC%outhouse@midcoast.com>
Source record: 28777

I have been looking at various designs of VHF SWR bridges, mainly from ARRL sources like old QSTs and such, and I wonder if anybody here has built a device like that.
For my experience level some of the old descriptions are just a touch to cryptic or the design calls for parts which I can't locate (small feed thru caps are one of those items).
I would love to discuss this with a knowledgable builder.

73 Uwe

1091. Re: 4CX5000A oops

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-08 17:15:31 UTC
From: mail@catv-solutions.nl
Message-ID: <bfa23d16.0402080915.2ebfab@posting.google.com>
Source record: 28778

Hallo Eddy.

I will surely give them a call tomorrow. Fist see what is the time
difference.
I alsow got a good advise from Umar on Amateur Broadcasting.
He was talking about a Harris transmitter.
After much digging on the Harris page i found some verry interesting
stuff.
Two schematics and some cavity drawings. All in PDF format. The
tube's they use are the 4CX3500/5000/7500 and the 10.000. The thing
i have to do now is calculate the size of the cavity and than i have
an almost comlete design.
So that is VERRY GOOD.

Eddy.....thanks for helping me out. I will let You know the
result of my phonecall what i will make with B.E.

Greetings from Elburg the Netherlands. Onno.

"Eddie Haskel" <wiseguy@clever.com> wrote in message
news:<TTjVb.22556$tD3.16194@newssvr25.news.prodigy.com>...
> Onno...call them on the phone, their support is very good. They are located
> in Quincy, Illinois.
>
> Broadcast Electronics
> 4100 North 24th Street
> Quincy ,Il. 62305
> (217)224-9600
>
> I have toured their facility, they are a very nice group of people. The
> factory is in a very quaint rural setting in Quincy. It's a "Stone-throw"
> from the Harris Factory. A lot of the people that work at BE are ham radio
> ops...I suspect you could get a hold of a BE-5A manual pretty easy.
> Be VERY careful on the filiment voltage on the 4CX5000..it likes to be at
> 5.0 Volts. Don't let it sag below 4.8 Volts and over 5.25 Volts is not good
> for it either. I have seen the BE-5A run at 72% eff..thats pretty
> good.....Eddie
> "Onno de Vries." <mail@catv-solutions.nl> wrote in message
> news:bfa23d16.0402061758.1419c97e@posting.google.com...
> > Hallo Eddy. Thanks for responding. I did some seaching and i
> > can find this BE-5A manny time's but i cannot find photo's, schematics
> > ,manuals wich can explane me a bit more in detail so i can build the
> > thing.
> > This time better than before,This double resonator.
> >

> > If You know where i can find what i need please let me know.
> >
> > Allready thank's Onno.
> >
> >
> > Dave Foreman <davelf11@cox.net> wrote in message
> news:<lcl620l2co259asv6d4ce4gkhe5r9asler@4ax.com>...
> > > On Fri, 06 Feb 2004 01:23:53 -0700, Dave Foreman <davelf11@cox.net>
> wrote:
> > >
> > > >On Fri, 06 Feb 2004 06:23:16 GMT, "Eddie Haskel" <wiseguy@clever.com>
> > > >wrote:
> > > >
> > > >>look at (and copy) the final circuit from a BE-5A (broadcast
> electronics) FM
> > > >>transmitter.It's very simple and very stable too. It likes about 200
> watts
> > > >>of drive from a IPA. Will run nicely with 5000 volts at about 1 amp on
> the
> > > >>plate. In the BE transmitter the tube sits in a cavity, with the plate
> being
> > > >>slide tuned. A coupling loop sits close to the tube....Eddie
> > > >>
> > > >>"Onno de Vries." <mail@catv-solutions.nl> wrote in message
> > > >>news:bfa23d16.0402040943.7beda11a@posting.google.com...
> > > >>> My name is Onno de Vries and i'm living in the Netherland and
> building
> > > >>> big amps is my hobby.
> > > >>> I just bought a 4CX 5000A on a radio market here for a good price
> (180
> > > >>> Euro) including socket.
> > > >
> > > >SNIP
> > > >
> > > >>>
> > > >>> Greetings.....Onno
> > > >>
> > > >
> > > >the 4CX5000A takes 10 Volts at 75 Amps, if I remember correctly.
> > > >Dave F.
> > >
> > > Meant to say on the filiment, I had one at one time and
> > > mostly used as a paper weight.
> > > Dave F.

1092. Cardmatics again

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-08 17:32:32 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <102csm27vtr9467@corp.supernews.com>
Source record: 28779
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

Don't trust the "Blown when lit" lamp for the DC Filament fuse. Don't ask me how I know because that's my fault, hi hi.....A tip that might help before attempting to clean the switch matrix that worked for me and saved some time was to insert an unpunched card into the reader and excercise it several times. The reader won't slam as positively because it forces all the pins to make contact. Next I found that 2 unpunched cards will barely fit in the reader and 2 cards will make the pins go a little further in and help clean a bit more of the shaft and their female counterparts. It slams even less positively with 2 cards but it saved me from having to diassemble the matirix. One question I can't answer is how long it will last but time will tell.
I'd like to know if anyone out there is interested in swapping me a military manual or copy of the AN/USM-118B for a copy of my KS-15874-L2 manual?
Also I'd like to know if anyone has a spare aluminum case for the Cardmatic that they might sell?

Pardon me if I'm boring you with my Cardmatic trivia but I'd like to know which of the 4 sites I posted to has most cardmatic users?

73
hank wd5jfr

1093. Re: BFO freq how far down SSB filter skirt?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-08 19:19:33 UTC
From: fmmck@aol.com
Message-ID: <20040208141933.18928.00001568@mb-m28.aol.com>
Source record: 28780

<< Pete, that's about as much as I paid for the receiver I'm trying to improve! A Radio Shack DX-394 >>

Tom-

I missed your original posting. What does the DX-394 currently use as an IF filter? If it happens to be made by Murata (or maybe Panasonic), a replacement with better specifications may available to fit in the same PCB holes. Check your filter's part number with the company's web site, and you may find a solution there.

However, if it uses the same filter for AM reception, a tighter filter could reduce sound quality of music.

73, Fred, K4DII

1094. Re: BFO freq how far down SSB filter skirt?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-08 20:04:12 UTC
From: Tom Holden <holden_family@sympatico.ca>
Message-ID: <RBwVb.508$sO4.119442@news20.bellglobal.com>
Source record: 28781

Fred McKenzie wrote:
> << Pete, that's about as much as I paid for the receiver
> I'm trying to improve! A Radio Shack DX-394 >>
>
> Tom-
>
> I missed your original posting. What does the DX-394
> currently use as an IF filter? If it happens to be made
> by Murata (or maybe Panasonic), a replacement with better
> specifications may available to fit in the same PCB
> holes. Check your filter's part number with the
> company's web site, and you may find a solution there.
>
> However, if it uses the same filter for AM reception, a
> tighter filter could reduce sound quality of music.
>
> 73, Fred, K4DII

Fred, thanks for your follow-up. The DX-394 has two 5-element Murata ceramic filters, one 9kHz or wider for AM and one 6 kHz or wider for SSB/CW with a BFO offset of +/-3.5kHz from 455kHz. That's why a narrower filter will need a BFO mod. There does not appear to be a much narrower filter in the same package and from what I understand Murata is out of the ceramic filter business. So I guess I will have to keep an eye out for a surplus filter or shell out $85 or so for a new 'economical' Collins!

Tom

1095. Re: BFO freq how far down SSB filter skirt?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-08 21:37:04 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <SOxVb.513$8W.155@bignews6.bellsouth.net>
Source record: 28782

Tom Holden wrote:
> Fred McKenzie wrote:
>
>><< Pete, that's about as much as I paid for the receiver
>>I'm trying to improve! A Radio Shack DX-394 >>
>>
>>Tom-
>>
>>I missed your original posting. What does the DX-394
>>currently use as an IF filter? If it happens to be made
>>by Murata (or maybe Panasonic), a replacement with better
>>specifications may available to fit in the same PCB
>>holes. Check your filter's part number with the
>>company's web site, and you may find a solution there.
>>
>>However, if it uses the same filter for AM reception, a
>>tighter filter could reduce sound quality of music.
>>
>>73, Fred, K4DII
>
>
> Fred, thanks for your follow-up. The DX-394 has two 5-element Murata ceramic
> filters, one 9kHz or wider for AM and one 6 kHz or wider for SSB/CW with a
> BFO offset of +/-3.5kHz from 455kHz. That's why a narrower filter will need
> a BFO mod. There does not appear to be a much narrower filter in the same
> package and from what I understand Murata is out of the ceramic filter
> business. So I guess I will have to keep an eye out for a surplus filter or
> shell out $85 or so for a new 'economical' Collins!
>
> Tom
>
>
You can probably find a surplus collins filter on ebay for about half
(or less) the cost of a new one. Fair Radio used to have 2.0 and 4.0
khz filters from the famous R390 receivers at about $25 or so.

1096. Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-08 21:43:08 UTC
From: SWbeginner <SWbeginner@nowhere.com>
Message-ID: <102dbbcdvmcar90@corp.supernews.com>
Source record: 28783

I am looking to build a frequency counter, or buy an inxepensive kit.
Any recommendations?
Needs: low cost, few parts count
Thanks

1097. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-08 23:13:47 UTC
From: Uncle Peter <radioconnectionNO@cox.netSPAM>
Message-ID: <lozVb.15996$gl2.8254@lakeread05>
Source record: 28784

Almost All Digital Electronics

"SWbeginner" <SWbeginner@nowhere.com> wrote in message
news:102dbbcdvmcar90@corp.supernews.com...
> I am looking to build a frequency counter, or buy an inxepensive kit.
> Any recommendations?
> Needs: low cost, few parts count
> Thanks

1098. Re: rf antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 00:29:38 UTC
From: ultanir_99@yahoo.com
Message-ID: <c403e21f.0402081629.2553b20f@posting.google.com>
Source record: 28785
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Before I start this circuit, could you guys suggest me any references
to look maybe, about some high freq. rf design tricks, etc

Thanks,
Adam

" Stephen Cowell" <scowell@sbcglobal.net> wrote in message
news:<NohUb.995$b13.39@newssvr23.news.prodigy.com>...
> "erdem" <ultanir_99@yahoo.com> wrote in message
> news:c403e21f.0402041633.6846c3f8@posting.google.com...
> > I am trying to build rf transmitter and receiver that could transfer
> > information (doors open closed, light on, etc, etc) from my car in the
> > parking lot to my office desk. The distance is about 100m. I would
> > like to have the receiver to be very small-key chain size. Therefore I
> > thought high frequency might result in a smaller antenna. Most
> > probably bandwidth will be very small (I do not need high speed data
> > transfer). I am not sure about the polarization issue. About the
> > power, that depends on the design, most probably. I am planning to use
> > the IC from; http://www.maxim-ic.com/Wireless.cfm
> >
> > Is it possible to do this kind of a device that small?
>
> Easily... as long as all it has to do is receive. You
> can pump out 20W of UHF RF from your car, you'll
> hear it without any antenna at all inside, probably.
> Your concerns are path loss (not that much through
> the walls of the building) and receiver antenna
> inefficiency (the greater of the two, since you put
> a small size limit).
>
> Perhaps you're talking about this chip:
>
> http://www.maxim-ic.com/view_press_release.cfm/release_id/932
>
> Pretty impressive, I must say... looks like fun.
>
> Keeping this On Topic for r.r.a.a, I'd start with
> a piece of wire 1/4 wave long, run around the
> perimeter of your device, as an antenna.
> --
> Steve
> KI5YG/EA
> .
>

>
> PS Make sure that you address any legal considerations
> about one-way automatic transmissions.

1099. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 01:02:43 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <T_AVb.11514$964.8633@edtnps84>
Source record: 28787

I made a 5Hz to 100MHz from a Ramsey kit. Yeah, it's a P.O.S., but it's
also still functional after 15 years! :-)

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

1100. Re: messing with a car radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 01:02:59 UTC
From: "Jim, N2VX" <ZZZjim_cronin@juno.comZZZ>
Message-ID: <89md201ask7qa207960qfpqss9mk5uq8uc@4ax.com>
Source record: 28788
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.shortwave

On 6 Feb 2004 10:25:58 -0800, cde@rocketmail.com (ellisc) wrote:

>I have an 80s model delco am/fm radio. I'd like to attach an external
>long wire AM antenna, an external FM antenna, and rig something up so
>I can listen to it with headphones at bedside.
>
>Questions:
>
>1. What do I need to do/build the headphone connection? Can I put
>something together using the car radio speaker wires?

Get a 1/8" stereo jack from RS or wherever. Use a 100 ohm resistor
between left and right speaker outputs and the jack. Too loud? Try a
higher value. Not loud enough? Try a lower value. Resistors are
cheap.

>2. Is it possible to hook up the long wire antenna without getting too
>complicated? Can I use the antenna plug on the radio in some way, or
>will I have to get inside the box? I don't know a lot about
>electronics. I have a soldering iron and have fixed the occasional
>loose wire on things around the house, but not much more than that.

For normal use just put a 5 foot length of wire on it. That should
work for FM, too. It's not much different than what was on the car.

If you want to listen to distant stations a different antenna is
needed for AM and FM. I used a tuned loop antenna with a shielded
pickup loop on a mid-80's Dodge radio and it worked great. It was
selective enough to bring in stations adjacent to a nearby 50,000 watt
clear channel station (WHAM 1180, Rochester, NY).

Anyway, try it out. It will cost a buck or two and you will learn
something in the process.

Good luck,
Jim

1101. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 01:40:40 UTC
From: SWbeginner <SWbeginner@nowhere.com>
Message-ID: <102dp8oaghdht52@corp.supernews.com>
Source record: 28789

I plan on building receivers and a simple frequency counter is needed.
Say 4 to 6 digits, up to about 50 Mhz.

I have seen approaches using:
74HCxxxx logic IC's could be made for $20 but lots of wiring

PIC - not much experience except with 16f84.
how to build programmer for lastest PIC's?

Anyone know of a demo or free digital simulation software with CMOS 4XXX
library? I have Microcap 7 demo but digital library is scarce.

So much has progressed since the MC14553 3 digit counter chips. Do they
even make them?

> What frequency range , how accurate, and what do you think of as
> inexpensive ?
> I have not looked lately but there used to be some that would work up
> to about 1.5 Ghz around $ 125 or so that would get you to within a
> couple of hundred Hz at 150 mhz.
>
>
>
>

1102. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 01:42:19 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <irudnXcmOMM0SrvdRVn-sQ@ctc.net>
Source record: 28786

> I am looking to build a frequency counter, or buy an inxepensive kit.
> Any recommendations?
> Needs: low cost, few parts count
> Thanks

What frequency range , how accurate, and what do you think of as inexpensive
?
I have not looked lately but there used to be some that would work up to
about 1.5 Ghz around $ 125 or so that would get you to within a couple of
hundred Hz at 150 mhz.

1103. G5RV is the closest you can go

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 01:44:09 UTC
From: bobetchris <bobetchris@videotron.ca>
Message-ID: <LBBVb.27752$km5.571413@wagner.videotron.net>
Source record: 28790

It all depends on what you want to do , is it for transmit , receive, or both ?
First of all you need room, lots of it and if so what do you want, 1/2 wave, 1/4 wave or a full wave.

Assuming one wave , well on 160mtrs it would roughtly be over 400' long and you
would need heavy cables for wires and two towers or phone poles.
There is no way to set up a diapole with trees, it will snap on a windy day.

Your best bet would be the G5RV ANTENNA
THE G5RV ANTENNA, with its special feeder arrangement, is a multiband centre-fed antenna capable of very efficient operation on all hf bands from 3.5 to 28mhz, specifically designed with dimensions which allow it to be installed in gardens which accommodate a reasonably-straight run of about 102ft (31.1m) for the "flat-top". However, because the most useful radiation from a horizontal or inverted-V resonant antenna takes place from the center two-thirds of its total length, up to one-sixth of this total length at each end of the antenna may be dropped vertically, semi-vertically, or bent at some convenient angle to the main body of the antenna without significant loss of effective radiation efficiency. For installation in a very limited space, the dimensions of both the "flat-top" and the matching section can be divided be a factor of two to make the half-size G5RV, which is a very efficient antenna from 7 to 28 mhz. The full-size G5RV will also function on 1.8mhz band if the station end of the feeder (either balanced or coaxial-type) is strapped and fed by a suitable antenna tuner using a good earth connection or a counterpoise wire. Similarly, the half-size version may be used thus on 3.5 and 1.8 mhz bands.

Beware that some antenna tuners cannot match this antenna !!

Bob ,

73, VA2BIK

1104. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 01:47:13 UTC
From: k7itm@aol.com
Message-ID: <3200347.0402081747.128055d0@posting.google.com>
Source record: 28791

This has been a hot topic recently! I just scanned an ARRL article
and a section of the test equipment chapter of the RSGB VHF/UHF
Handbook to send to someone else who is interested in making a
146/440MHz SWR monitor, and I just made a couple 100MHz-6GHz detectors
for someone else who is looking at monitoring SWR at 2.5GHz.

Seems to me the simple way for most folk to do it is to make a
microstrip coupler. You can use surface-mount components for the load
and detector and RF decoupling, and they'll work quite well up into
the GHz region, from my experience. As far as RF decoupling goes, you
should be able to do an adequate job on a circuit board...once the
detector turns the RF to DC, just put shunt capacitance to ground and
series inductance in the line. Pick the inductance as you would for
other VHF work: avoid inductors with self-resonances below the freq
of interest.

You probably have already seen the ARRL article I scanned, but if
you'd like the RSGB one, I could send it. But it's almost 4 megabytes
and may take you a while to download if you have a slow connection.

Cheers,
Tom

Uwe Langmesser <outhouse@midcoast.com> wrote in message
news:<BC4BB8E5.CAEC%outhouse@midcoast.com>...
> I have been looking at various designs of VHF SWR bridges, mainly from ARRL
> sources like old QSTs and such, and I wonder if anybody here has built a
> device like that.
> For my experience level some of the old descriptions are just a touch to
> cryptic or the design calls for parts which I can't locate (small feed thru
> caps are one of those items).
> I would love to discuss this with a knowledgable builder.
>
> 73 Uwe

1105. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 02:15:22 UTC
From: Marianne <mdoty@bright.net>
Message-ID: <FeOdnTPVPqWJcLvdRVn-ig@bright.net>
Source record: 28792

You might try Francesco Morgantini's (IK3OIL) PIC freq counter. It's based on a 16f84 and he will email you the hex code if you request it. It will run to approx 45 MHz as is and up to 1.5 GHz with a simple add on prescaler. He has divide functions built in the program (divide by 10/32/64) and he has also include IF offset if you want to use the counter as a freq readout. I've etched about 40 boards for local hams here and every one that has been built has worked without fail. Total cost has been in the neighborhood of $35.00 including the prescaler but excluding enclosure. If you want a copy of the circuit board layout with prescaler, just email me at ww2742 at dragonbbs.com. As for accuracy, I just adjusted one today for another local ham at it was within 200 Hz at 440 MHz using a recently calibrated IFR-1200 for a source - that was close enough for me.

Here's his website URL: http://digilander.libero.it/ik3oil/menu_eng.htm

Mike
"SWbeginner" <SWbeginner@nowhere.com> wrote in message
news:102dbbcdvmcar90@corp.supernews.com...
> I am looking to build a frequency counter, or buy an inxepensive kit.
> Any recommendations?
> Needs: low cost, few parts count
> Thanks

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.580 / Virus Database: 367 - Release Date: 02/06/2004

1106. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 02:38:25 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1076294305.718987@smtp-1.griffin.com>
Source record: 28793

what is your top frequency you wish to use and what power levels??

you can make an swr meter good for 200w or so up to 70cms using pcb and a
very simple detector crt..
SM0VPO homepage has details..or look in rsgb vhf/uhf dx handbook..that has
microstrip (pcb) and torroid ring style bridges..they both work as i have
made many now...

g0zen
"Tom Bruhns" <k7itm@aol.com> wrote in message
news:3200347.0402081747.128055d0@posting.google.com...
> This has been a hot topic recently! I just scanned an ARRL article
> and a section of the test equipment chapter of the RSGB VHF/UHF
> Handbook to send to someone else who is interested in making a
> 146/440MHz SWR monitor, and I just made a couple 100MHz-6GHz detectors
> for someone else who is looking at monitoring SWR at 2.5GHz.
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> Seems to me the simple way for most folk to do it is to make a
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> and detector and RF decoupling, and they'll work quite well up into
> the GHz region, from my experience. As far as RF decoupling goes, you
> should be able to do an adequate job on a circuit board...once the
> detector turns the RF to DC, just put shunt capacitance to ground and
> series inductance in the line. Pick the inductance as you would for
> other VHF work: avoid inductors with self-resonances below the freq
> of interest.
>
> You probably have already seen the ARRL article I scanned, but if
> you'd like the RSGB one, I could send it. But it's almost 4 megabytes
> and may take you a while to download if you have a slow connection.
>
> Cheers,
> Tom
>
>
> Uwe Langmesser <outhouse@midcoast.com> wrote in message
news:<BC4BB8E5.CAEC%outhouse@midcoast.com>...
> > I have been looking at various designs of VHF SWR bridges, mainly from
ARRL
> > sources like old QSTs and such, and I wonder if anybody here has built a
> > device like that.
> > For my experience level some of the old descriptions are just a touch to
> > cryptic or the design calls for parts which I can't locate (small feed
thru
> > caps are one of those items).

> > I would love to discuss this with a knowledgable builder.
> >
> > 73 Uwe

1107. PT9783 spec??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 02:50:55 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1076295055.291750@smtp-1.griffin.com>
Source record: 28794

hi
does anyone know the spec of the rf power tr. PT9783???

Gain? power out? max ft.?

thanks..g0zen

1108. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 05:17:57 UTC
From: Uwe Langmesser <outhouse@midcoast.com>
Message-ID: <BC4C8235.CB56%outhouse@midcoast.com>
Source record: 28795

Hi Tom,

No, I don't know the article you mentioned.
I just got the ARRL Antenna Book and there is a plan for a directional coupler using some plumbing hardware and I could see myself building that, but again there are some issues about available parts (thru feed caps in particular).
From my (limited) understanding these couplers would be the aquivalent of the "plugs" used in meters like the Bird 43 or the URM120.

But I am not sold on this design and would certainly want to look at the article you mentioned. And yes, I do have a slow phone connection, but if you are willing I would appreciate if you could send the article as an attachment.

Now the microstrip coupler you mention, is that what people also call a monimatch? What are the advantages of one design over another?

regards Uwe

in article 3200347.0402081747.128055d0@posting.google.com, Tom Bruhns at k7itm@aol.com wrote on 2/8/04 8:47 PM:

> This has been a hot topic recently! I just scanned an ARRL article
> and a section of the test equipment chapter of the RSGB VHF/UHF
> Handbook to send to someone else who is interested in making a
> 146/440MHz SWR monitor, and I just made a couple 100MHz-6GHz detectors
> for someone else who is looking at monitoring SWR at 2.5GHz.
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> Seems to me the simple way for most folk to do it is to make a
> microstrip coupler. You can use surface-mount components for the load
> and detector and RF decoupling, and they'll work quite well up into
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> should be able to do an adequate job on a circuit board...once the
> detector turns the RF to DC, just put shunt capacitance to ground and
> series inductance in the line. Pick the inductance as you would for
> other VHF work: avoid inductors with self-resonances below the freq
> of interest.
>
> You probably have already seen the ARRL article I scanned, but if
> you'd like the RSGB one, I could send it. But it's almost 4 megabytes
> and may take you a while to download if you have a slow connection.
>
> Cheers,
> Tom
>

>
> Uwe Langmesser <outhouse@midcoast.com> wrote in message
> news:<BC4BB8E5.CAEC%outhouse@midcoast.com>...
>> I have been looking at various designs of VHF SWR bridges, mainly from ARRL
>> sources like old QSTs and such, and I wonder if anybody here has built a
>> device like that.
>> For my experience level some of the old descriptions are just a touch to
>> cryptic or the design calls for parts which I can't locate (small feed thru
>> caps are one of those items).
>> I would love to discuss this with a knowledgable builder.
>>
>> 73 Uwe

1109. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 05:34:38 UTC
From: averyfineman@aol.com
Message-ID: <20040209003438.01632.00000652@mb-m03.aol.com>
Source record: 28796

In article <102dbbcdvmcar90@corp.supernews.com>, SWbeginner
<SWbeginner@nowhere.com> writes:

>I am looking to build a frequency counter, or buy an inxepensive kit.
>Any recommendations?
>Needs: low cost, few parts count

Recommendations depend on your intended function.

The general-purpose counter from Almost All Digital Electronics is
good, ready-built with LCD for about $40 (give or take depending on
optional backlight or BIG - actually slightly bigger - LCD, temp.
compensated timebase oscillator, etc.). Try examining
www.aade.com. A good Puget Sound area little company.

A "very low parts count" of one would be the CSI 6100 general
purpose counter from Circuit Specialists, Inc., for $129 ready to
use on either 115 or 230 VAC lines. I have one of those very
no-frills units and it works (just got it as a backup on the bench).
I've seen better displays than this one has but I can't fault the
price for a complete unit ready-to-go.

To roll your own counter-timer-etc., the Intersil ICM7216B 28-pin
DIP will count to 10 MHz by itself and drive up to 8 LEDs, has an
on-board timebase oscillator and function switching internal. The
datasheet has several schematics, fairly complete, for making
your own. Add a divide-by-10 or divide-by-100 digital prescaler
and the input frequency range can extend to 100 or 1000 MHz.
The only problem with that is that Intersil is going to OBSOLETE
the critter and is apparently out of production (unless you have a
very large quantity to order, like many thousands).

The Intersil ICM7226B is, or was, a fancier version of 7216, having
a 40-pin DIP. It seems to be all gone except on paper. Some
distributors may still have some 7216s around in stock. I have
datasheets for both and can forward them in e-mail attachments.

Several websites have nice pages on using the Microchip PIC
16F84 or 16F71 (AADE uses the '71) as a complete counter and
display driver for an LCD, extra transistor things for LEDs, using
only 3 ICs total (plus a prescaler to go higher than about 35 MHz
maximum with the PIC). That arrangement is nice because one
can program in "offsets" of the count such as reading a local
oscillator directly, then adding/subtracting the IF to get the antenna
input frequency. The only problem there with rolling your own is
that, while the PIC development software is free, and program

boards are low cost, if you aren't used to Assembler-like language and coding at the machine level, you have a large learning curve to climb. That may be worth it since microcontrollers are VERY versatile, can do amazing things with some creativity, even put ASCII legends of all kinds on the LCD screen besides the basic functions of totalizing a count. PICs of many numbers abound at distributors such as Digikey and Mouser.

To use lots of ICs of the "74" family, two to three per digit plus the timebase divider, would be the last alternative. The 74LS190 to 74F190 series is still around but the BCD versions are getting scarce; binary versions (count of 16) are there but the decade ones are apparently being dropped for new production. 74LS160 to 74F160 in the same boat. There is even a CD4nnn which has a whole BCD counter, 4-bit latch, 7-segment decoder-driver in a single DIP that will work up to about 4 MHz, higher with an input prescaler (I have to search my PDFs for the exact number).

The IC makers have been winnowing their available types over the last decade, tightening their belts, dropping some things that did not sell well (despite their usefulness to hobbyists), adding new things and getting into the SMT area with a rush that started in the late 1980s. Expect more type dropouts. Adapt, improvise... :-)

Len Anderson
retired (from regular hours) electronic engineer person

1110. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 05:44:55 UTC
From: aw288@osfn.org
Message-ID: <8a1964a6.0402082144.1c8a29ac@posting.google.com>
Source record: 28647
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0402071602.43ecc1aa@posting.google.com>...

> Lots of discussion about using the 829 for VHF power amplifiers, and
> even audio amplifiers and conversation pieces. But I haven't seen
> mention here of their use in pulse generators.

Or CRT drivers (in the AN/APS-44 aircraft radar, and I think some of
the Navy PPI repeaters).

> Perhaps someone knows: was the 3E29 an 829 re-designed and/or
> specifically tested for use in pulsers?

Probably. 3E29 was used in the Mk III IFF interogators, circa 1943. I
don't know of any other major uses for the 3E29 (AKA 829A). Real 3E29s
are getting quite scarce, but 829Bs still can be found in biblical
quantities.

> What was the 829 originally
> intended for, and when was it first introduced? Who made the first
> ones, RCA or someone else?

1943, probably RCA, although National Union was apparently an early
second source. 832 was the model for the 829.

William Donzelli

1111. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 06:42:40 UTC
From: "Geoffrey G. Rochat" <777geoff777@777pkworks777.777com777>
Message-ID: <c07937$389$1@news.utelfla.com>
Source record: 28648
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

William Donzelli <aw288@osfn.org> wrote in message
news:8a1964a6.0402082144.1c8a29ac@posting.google.com...
> k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0402071602.43ecc1aa@posting.google.com>...
>
> > Lots of discussion about using the 829 for VHF power amplifiers, and
> > even audio amplifiers and conversation pieces. But I haven't seen
> > mention here of their use in pulse generators.
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> Or CRT drivers (in the AN/APS-44 aircraft radar, and I think some of
> the Navy PPI repeaters).
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> quantities.
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> > ones, RCA or someone else?
>
> 1943, probably RCA, although National Union was apparently an early
> second source. 832 was the model for the 829.
>
> William Donzelli

I've seen references to the fact that the 829B was used in MIT's Whirlwind computer as core memory drivers, definitely a pulse application. I don't have any documentation on that, but I do remember some dual plate 829B-like tubes in the Whirlwind fragments that used to be on display at the now-defunct Boston Computer Museum. They could have been 3E29s, though, or even 832s.

The Univac I used 829Bs, as documented here (5/8ths of the way down the page):
http://ed-thelen.org/comp-hist/BRL61-u3.html

With that complement of tubes you could make one heck of an all-modes transceiver!

1112. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 07:21:10 UTC
From: Uwe Langmesser <outhouse@midcoast.com>
Message-ID: <BC4C9F15.CB62%outhouse@midcoast.com>
Source record: 28649

I need the unit for 2 m up to maybe 50 to 100 W power.

regards Uwe

in article 1076294305.718987@smtp-1.griffin.com, zindazenda at
zen@lineisp.co.uk wrote on 2/8/04 9:38 PM:

> what is your top frequency you wish to use and what power levels??
>
> you can make an swr meter good for 200w or so up to 70cms using pcb and a
> very simple detector crt..
> SM0VPO homepage has details..or look in rsgb vhf/uhf dx handbook..that has
> microstrip (pcb) and torroid ring style bridges..they both work as i have
> made many now...
>
> g0zen
> "Tom Bruhns" <k7itm@aol.com> wrote in message
> news:3200347.0402081747.128055d0@posting.google.com...
>> This has been a hot topic recently! I just scanned an ARRL article
>> and a section of the test equipment chapter of the RSGB VHF/UHF
>> Handbook to send to someone else who is interested in making a
>> 146/440MHz SWR monitor, and I just made a couple 100MHz-6GHz detectors
>> for someone else who is looking at monitoring SWR at 2.5GHz.
>>
>> Seems to me the simple way for most folk to do it is to make a
>> microstrip coupler. You can use surface-mount components for the load
>> and detector and RF decoupling, and they'll work quite well up into
>> the GHz region, from my experience. As far as RF decoupling goes, you
>> should be able to do an adequate job on a circuit board...once the
>> detector turns the RF to DC, just put shunt capacitance to ground and
>> series inductance in the line. Pick the inductance as you would for
>> other VHF work: avoid inductors with self-resonances below the freq
>> of interest.
>>
>> You probably have already seen the ARRL article I scanned, but if
>> you'd like the RSGB one, I could send it. But it's almost 4 megabytes
>> and may take you a while to download if you have a slow connection.
>>
>> Cheers,
>> Tom
>>
>>
>> Uwe Langmesser <outhouse@midcoast.com> wrote in message
> news:<BC4BB8E5.CAEC%outhouse@midcoast.com>...
>>> I have been looking at various designs of VHF SWR bridges, mainly from

> ARRL
>>> sources like old QSTs and such, and I wonder if anybody here has built a
>>> device like that.
>>> For my experience level some of the old descriptions are just a touch to
>>> cryptic or the design calls for parts which I can't locate (small feed
> thru
>>> caps are one of those items).
>>> I would love to discuss this with a knowledgable builder.
>>>
>>> 73 Uwe
>
>

1113. Re: BFO freq how far down SSB filter skirt?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 07:54:46 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <a1HVb.3834$fV5.119958@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28650

Hi Tom,
Murata did get out of the high performance filter
business.....about the only things that they have now are the
4-element CFU series, and the 6-element CFWS (now CFLW) series.

Pete

"Tom Holden" <holden_family@sympatico.ca> wrote in message
news:RBwVb.508$sO4.119442@news20.bellglobal.com...
> Fred McKenzie wrote:
> > << Pete, that's about as much as I paid for the receiver
> > I'm trying to improve! A Radio Shack DX-394 >>
> >
> > Tom-
> >
> > I missed your original posting. What does the DX-394
> > currently use as an IF filter? If it happens to be made
> > by Murata (or maybe Panasonic), a replacement with better
> > specifications may available to fit in the same PCB
> > holes. Check your filter's part number with the
> > company's web site, and you may find a solution there.
> >
> > However, if it uses the same filter for AM reception, a
> > tighter filter could reduce sound quality of music.
> >
> > 73, Fred, K4DII
>
> Fred, thanks for your follow-up. The DX-394 has two 5-element Murata
ceramic
> filters, one 9kHz or wider for AM and one 6 kHz or wider for SSB/CW with a
> BFO offset of +/-3.5kHz from 455kHz. That's why a narrower filter will
need
> a BFO mod. There does not appear to be a much narrower filter in the same
> package and from what I understand Murata is out of the ceramic filter
> business. So I guess I will have to keep an eye out for a surplus filter
or
> shell out $85 or so for a new 'economical' Collins!
>
> Tom
>
>

1114. Re: BFO freq how far down SSB filter skirt?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 07:57:13 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <t3HVb.3839$fV5.119525@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28651

You can still find the surplus filters, but the nice thing about the 526-8695 series is that they have an input/output Z of 2K, so you can substitute these filters for the ceramic filters. Another good thing is that these new Torsional Mode filters don't require any tuning caps at the I/O pins.

Pete

"Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message news:SOxVb.513$8W.155@bignews6.bellsouth.net...
> Tom Holden wrote:
> > Fred McKenzie wrote:
> >
> >><< Pete, that's about as much as I paid for the receiver
> >>I'm trying to improve! A Radio Shack DX-394 >>
> >>
> >>Tom-
> >>
> >>I missed your original posting. What does the DX-394
> >>currently use as an IF filter? If it happens to be made
> >>by Murata (or maybe Panasonic), a replacement with better
> >>specifications may available to fit in the same PCB
> >>holes. Check your filter's part number with the
> >>company's web site, and you may find a solution there.
> >>
> >>However, if it uses the same filter for AM reception, a
> >>tighter filter could reduce sound quality of music.
> >>
> >>73, Fred, K4DII
> >
> >
> > Fred, thanks for your follow-up. The DX-394 has two 5-element Murata ceramic
> > filters, one 9kHz or wider for AM and one 6 kHz or wider for SSB/CW with a
> > BFO offset of +/-3.5kHz from 455kHz. That's why a narrower filter will need
> > a BFO mod. There does not appear to be a much narrower filter in the same
> > package and from what I understand Murata is out of the ceramic filter
> > business. So I guess I will have to keep an eye out for a surplus filter or
> > shell out $85 or so for a new 'economical' Collins!
> >
> > Tom

> >
> >
> You can probably find a surplus collins filter on ebay for about half
> (or less) the cost of a new one. Fair Radio used to have 2.0 and 4.0
> khz filters from the famous R390 receivers at about $25 or so.
>

1115. Re: KIWA Air core Am loop details wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 08:01:08 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <87HVb.3848$fV5.118070@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28652

It must have been some kind of coupling element.....the
regenerative circuits I have seen otherwise use a pot for the feedback
element. I did try one of those circuits, and it didn't work too well.

Pete

"Nocturnal1" <file13@nojunkmail.com> wrote in message
news:401daff4$1_1@newspeer2.tds.net...
> Geez - I'd give my right ___ for that schematic.
> Craig may have put alot of work into it, but he's no longer producing
them.
> eBay prices are at ridiculous levels for this thing. I just wanna make ONE
> for myself - not infringe on any copyrights or patents. It won't look the
> same and probably won't be the same - but I'd sure like to see why the
> optoisolator is in there...
> ~Tom
>
>
> "Pete KE9OA" <n.gianakopoulos@worldnet.att.net> wrote in message
> news:DL8Sb.134777$6y6.2622331@bgtnsc05-news.ops.worldnet.att.net...
> > I saw a schematic for the amplifier years ago. They key was what
appeared
> to
> > be linear optoisolators in the feedback circuitry.
> > I was going to build it up, but it looked as if the designer put quite a
> bit
> > of work into the circuit design, so I took a pass on it.
> > I purged the details from my hard drive a few years back.
> >
> > Pete
> >
> > "Nocturnal1" <file13@nojunkmail.com> wrote in message
> > news:4018aae8$1_3@newspeer2.tds.net...
> > > I've built several loops and they are all similar as you say, but the
> KIWA
> > > loop is quite a different animal! I've have mild success with what
I've
> > done
> > > so far in my efforts to duplicate one, but I cannot seem to find much
on
> > the
> > > regenerative loop and circuitry contained within it.
> > >
> > > ~Tom in Mn
> > >

> > >
> >
> >
>
>

1116. Re: messing with a car radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 10:15:33 UTC
From: Tom Sevart <n2uhc@yahoo.nospam.com>
Message-ID: <c07fii$13g7lk$1@ID-52518.news.uni-berlin.de>
Source record: 28653
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.shortwave

"ellisc" <cde@rocketmail.com> wrote in message
news:c057333a.0402062313.65dbf880@posting.google.com...

> The superradio isn't fm stereo, is it? I want stereo for fm listening.

It's only got one large speaker, not sure if it has stereo through the
headphone jack. Heck, I'm not even sure if it does have a headphone jack.
Mine is stowed away in the camper & is mainly used for listening on camping
trips.

--
Tom Sevart N2UHC
Frontenac, KS
http://www.geocities.com/n2uhc

1117. Re: Help with dipole please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 10:23:17 UTC
From: Tom Sevart <n2uhc@yahoo.nospam.com>
Message-ID: <c07g12$13n3c5$1@ID-52518.news.uni-berlin.de>
Source record: 28654

"Hammer" <nubob5001@yahoo.com> wrote in message
news:zB9Vb.7889$5f.7856@read1.cgocable.net...
> Hi,
> Putting up a 10 through 160 or 10 through 80 meters dipole. I have lots of
> wire and coax and a 1:1 balon. Interested in how the shape or form of this
> dipole should be to work properly? I have to put it into two trees to get
> height. Are there any good links or sights to learn proper making and
> installation?
> Thanks.

A standard dipole will only work well on one band. However, if you put several different dipoles together in parallel, you can have antennas for different bands using the same feedpoint.

Check out:
http://www.geocities.com/n2uhc/2banddipole.com for more information. I use a combination 20/40 meter dipole for portable operation with my QRP rigs.

Just keep in mind that the different elements for different bands will interact with each other. If this weren't the case it would be feasable to put elements for 80-10 together and use the same feedpoint. Since they do interact, you may want to put together what's known as a fan dipole, where the different elements are angled away from each other to cut down on the interaction.

--
Tom Sevart N2UHC
Frontenac, KS
http://www.geocities.com/n2uhc

1118. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 10:29:00 UTC
From: Tom Sevart <n2uhc@yahoo.nospam.com>
Message-ID: <c07gbp$13okv8$1@ID-52518.news.uni-berlin.de>
Source record: 28655

" Uncle Peter" <radioconnectionNO@cox.netSPAM> wrote in message
news:lozVb.15996$gl2.8254@lakeread05...
> Almost All Digital Electronics
>

I second that. I put together the DFD4 (though haven't finished it yet, need to get'r done) which is their stand alone counter. Counts up to 2 or 3 GHZ.

Unfortunately, the cost won't be that low. With the crystal oscillator option, the total cost was around $95. Website is www.aade.com, search for DFD4.

On the other hand, if you're looking for just HF & low VHF, W8DIZ has a freq counter kit that reads up to around 45 MHZ. I don't remember exactly what it cost, but was only around $40. The website is www.kitsandparts.com.

--
Tom Sevart N2UHC
Frontenac, KS
http://www.geocities.com/n2uhc

1119. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 10:41:50 UTC
From: Tom Sevart <n2uhc@yahoo.nospam.com>
Message-ID: <c07h3r$13hbit$1@ID-52518.news.uni-berlin.de>
Source record: 28656

"Tom Sevart" <n2uhc@yahoo.nospam.com> wrote in message
news:c07gbp$13okv8$1@ID-52518.news.uni-berlin.de...
>
> On the other hand, if you're looking for just HF & low VHF, W8DIZ has a
freq
> counter kit that reads up to around 45 MHZ. I don't remember exactly what
> it cost, but was only around $40. The website is www.kitsandparts.com.

The actual URL for this kit is http://partsandkits.com/fc.asp which has a
schematic and parts list, so you could probably even build one from scratch
if you wanted. However, it's probably easier & cheaper to just buy a kit.

--
Tom Sevart N2UHC
Frontenac, KS
http://www.geocities.com/n2uhc

1120. Re: G5RV is the closest you can go

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 11:23:30 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <eXSVb.7533$q%6.1924941@newsfep2-win.server.ntli.net>
Source record: 28669

> Assuming one wave , well on 160mtrs it would roughtly be over 400' long
and
> you
> would need heavy cables for wires and two towers or phone poles.
> There is no way to set up a diapole with trees, it will snap on a windy
day.
==========
A wire antenna between 2 trees can be very reliable provided there are no branches in the immediate vicinity of the wire and that connection to 1 tree is via a pulley with freely suspended counterweight ,such that when it is windy and parts of trees move the wire remains straight. A really simple arrangement.

Frank GM0CSZ / KN6WH

1121. Re: messing with a car radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 11:29:01 UTC
From: rhf-say-bye-bye@pacbell.net
Message-ID: <ee137ed4.0402090329.2b0efeeb@posting.google.com>
Source record: 28657
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.shortwave

CDE,

The CCRadioPlus has FM Stereo via the Headphones and LineOuts.
+ External Antenna Connections: AM is OK and FM is Poor.
+ Build-in-Speaker Sound: Designed for th Human Voice; but Good.
+ Price = $160 -&- Value = Good
http://www.radiointel.com/review-ccradioplus.htm
http://groups.yahoo.com/group/CCRadio/

The GE Superadio III 'only' has Mono-Phonic FM Sound.
+ External Antenna Connections: AM is Ok and FM is Ok.
+ Build-in-Speaker Sound: The Best.
+ Price = $60 -&- Value = Very Good
http://groups.yahoo.com/group/SuperadioIII/

The Tivoli Model One FM Stereo via the Headphones and Rec-Out.
+ External Antenna Connections: FM is Ok and AM None.
+ Build-in-Speaker Sound: Very Good.
+ Price = $100 -&- Value = Good
http://www.tivoliaudio.com/pm1blu.htm

The Grundig S350 has FM Stereo via the LineOuts
and only Mono-Phonic Sound via the Headphones.
+ External Antenna Connections: AM is Very Good and FM is Very Good.
+ Build-in-Speaker Sound: Very Good.
+ Price = $100 -&- Value = Best
http://www.radiointel.com/review-GrundigS350.htm
http://groups.yahoo.com/group/Grundig-S350/

Recently claims have been made about the better than average
AM & FM Recetion of these radios:
* Cambridge Soundworks CD 740
* Sangean WR-1 Wooden Radio
* Sangean Q Radio

FWIW: I was not impressed with the FM Reception of the Tivoli Model
One.
- In the "Urban" SF Bay Area using an Omni-Directional "X" External
FM Antenna mounted at 28Ft. The Tivoli Model One performed as well
as the CCRadioPlus, GE Superadio III, Sony ICF-2010; Grundig S350;
and Grundig Satellit 800-M.
- In the "Rural" Twain Harte,CA location Up-in-the-Hills and
Down-in-the-Valley using an FM Reflect External FM Antenna located
on the second story of the house. The Tivoli Model One did not
performed as well as the CCRadioPlus, GE Superadio III, Sony ICF-2010;

and Grundig S350.

iane ~ RHF
.
.
= = = cde@rocketmail.com (ellisc)
= = = wrote in message news:<c057333a.0402062313.65dbf880@posting.google.com>...
> tommyknocker <tomynokr@uucp.hell> wrote in message
news:<1028n3f39rh5qb4@corp.supernews.com>...
> >
> > It would be easier to buy a normal radio. For AM a CCRadio or GE
> > Superadio 3 would work. The best FM reciever there is is the Tivoli
> > Audio Henry Kloss Model One, but be prepared to plunk down mucho dinero
> > for one ($100 last time I checked) and it's not that great on AM. I'd go
> > with a SR3, or you can try to get an SR2, which some think had better
> > build quality, but since it's (obviously) an earlier, out of production
> > model it's hard to find.
>

The superradio isn't fm stereo, is it? I want stereo for fm
listening.

= = = From: ellisc (cde@rocketmail.com)
= = = Subject: messing with a car radio
Newsgroups: rec.radio.amateur.homebrew, rec.radio.amateur.antenna,
rec.radio.amateur.equipment, rec.radio.shortwave
Date: 2004-02-06 10:25:59 PST

I have an 80s model delco am/fm radio. I'd like to attach an external
long wire AM antenna, an external FM antenna, and rig something up so
I can listen to it with headphones at bedside.

Questions:

1. What do I need to do/build the headphone connection? Can I put
something together using the car radio speaker wires?

2. Is it possible to hook up the long wire antenna without getting too
complicated? Can I use the antenna plug on the radio in some way, or
will I have to get inside the box? I don't know a lot about
electronics. I have a soldering iron and have fixed the occasional
loose wire on things around the house, but not much more than that.

Or should I just forget it and buy a portable receiver? I mainly want
to listen to AM talk at night and a particular FM college station in
the next town. I read on several posts about using a car radio
because of the AM reception.

I've also thought about buying a used Grundig receiver, in particular
the S350. I think having the option of listening to shortwave might
be fun. Does this thing put out good audio via headphones?

Thanks.

1122. Re: Help with dipole please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 12:44:12 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <eXSVb.7534$q%6.1924941@newsfep2-win.server.ntli.net>
Source record: 28670

> A standard dipole will only work well on one band. However, if you put
> several different dipoles together in parallel, you can have antennas for
> different bands using the same feedpoint.
==========
A single dipole will work well on many bands ,provided a balanced feeder of
300 - 450 or 600 Ohms (to name a few) is used ,obviously with a balanced to
unbalanced matching unit.
For this purpose I successfully use a 2 times 21 metres (68 ft) dipole with
a 450 Ohms ribbon feeder on all bands from 1.8 to 30 MHz. The length is not
all that critical although the dipole should preferably be half a wavelength
for the lower freq band used.
Because of its balanced behaviour the feeder does not radiate . In my case
the feeder runs into and over the loft into the lower level shack without RF
interference problems .

Frank GM0CSZ / KN6WH

1123. Re: messing with a car radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 13:53:29 UTC
From: rhf-say-bye-bye@pacbell.net
Message-ID: <ee137ed4.0402090553.5a96a0cc@posting.google.com>
Source record: 28658
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.shortwave

CDE,

ANTENNA:
You could try building a 'Low Noise' AM Antenna that can
start at near ground level and going up to as far as you
can get it and then out as far as your can make it.
NOTE: This is usually called an Inverted "L" Antenna.
* First install a Ground Rod and a short Heavy Ground
Wire at the Base / Starting Point of the Antenna.
* The Antenna Element was 100 Feet of Landscape Lighting
Cable (Heavy Duty Outdoors Zip Cord).
* Affixed the Two Wires of the Near-Feed-End of the
Antenna Element across a TV 300 Ohm Matching Transformer
and connected them one-to-one.
* Secure the The Near-Feed-End of the Antenna Element and
Matching Transformer using insulators to the Ground Rod.
* Stripped and Twisted Together the Wires of the Far-End
of the Antenna Element and covered them with electrical tape.
* Ran/Routed the Antenna Element from the Ground level
up to the Top of the First / Near Antenna Support.
* Ran/Routed the Antenna Element from the Top of the First /
Near Antenna Support to the Top of the Far Antenna Support.
* Attach 50Ft to 100Ft of 75 Ohm Coax Cable to the other
end of the Mounting Transformer.
* Attached a short Heavy Ground Wire to the 75 Ohm Side
of the Mounting Transformer.
* Ran/routed the Coax Cable from the the Antenna Element
to the your Car Radio's location.
* Terminate the 75 Ohm Coax Cable with an Motorola Connector.
* Plug the Motorola Connector into the Car Radio.
TBL: The Antenna Element is a "Flat-Thin-Loop" that is
Physically 100 Ft Long and Electrically 200 Ft Out-and-Back.

ALTERNATE: To the Random Wire Antenna is to use a CB 104"
Stainless Steel Whip Antenna mounted on a piece of 21Ft Top Rail.
* A proper Antenna Insulated "Mount" is required to be used
between the Whip and the Top Rail.
* Use a 75 Ohm Coax Cable from the the Antenna to the Radio.
* Connect the Center Wire of the Coax Cable to the Whip
Antenna Element and the Outer Shield to the Top Rail.
* Terminated the Coax Cable with a Motorola Plug.
* The Base (Butt-End)) of this piece of Top Rail should be
3Ft-5Ft in the Ground and allow the Top Rail to be Free Standing.
NOTE: The Top Rail is your Antenna and Car Radio Ground.

STEREO HEADPHONES:
NOTE: Since your did not ask about Hooking-Up a Pair of
Stereo Speakers. I assume you know how.

The simplest method of making the connection between the
Car Radio's audio power amplifier Stereo Output and your
Stereo Headphones is using a pair of Dropping Resisitors
with a 1/8" or 1/4" Stereo Jack to match-up with your
Headphones and Two Dropping Resisitors.
THE HOOK-UP: The Barrel of the Stereo Jack is Ground;
Center-Section is the Left-Side Stereo Sound; and the
Tip is Right-Side Stereo Sound. For the Center-Section
and the Tip use an Equal Value Dropping Resistor.
Here is a suggested 'value' of Dropping Resistors for
different basic Headphone Impedances:
* 4 Ohms Headphones = One 43 Ohm One Watt Resistor per Side.
* 8 Ohms Headphones = One 82 Ohm One Watt Resistor per Side.
* 16 Ohms Headphones = One 160 Ohm One Watt Resistor per Side.
* 32 Ohms Headphones = One 330 Ohm One Watt Resistor per Side.

iane ~ RHF
.
.
= = = cde@rocketmail.com (ellisc)
= = = wrote in message news:<c057333a.0402061025.a119808@posting.google.com>...

I have an 80s model delco am/fm radio.
I'd like to attach an external long wire AM antenna,
an external FM antenna, and rig something up so I can
listen to it with headphones at bedside.

Questions:

1. What do I need to do/build the headphone connection?
Can I put something together using the car radio speaker wires?

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getting too complicated?
Can I use the antenna plug on the radio in some way, or
will I have to get inside the box?
I don't know a lot about electronics. I have a soldering
iron and have fixed the occasional loose wire on things
around the house, but not much more than that.

Or should I just forget it and buy a portable receiver?
I mainly want to listen to AM talk at night and a
particular FM college station in the next town.
I read on several posts about using a car radio because
of the AM reception.

I've also thought about buying a used Grundig receiver,
in particular the S350. I think having the option of
listening to shortwave might be fun. Does this thing
put out good audio via headphones?

Thanks.

.

1124. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 15:02:03 UTC
From: Chuck Harris <cfharris@erols.com>
Message-ID: <4027a0eb$0$3196$61fed72c@news.rcn.com>
Source record: 28659
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

Hi,

The 3E29 may share a similar appearance, and the same pin out as the 829, but it certainly is not interchangable. To quote the RCA TT5 manual:

3E29: Heater-cathode type containing two high-perveance units used as retangular-wave pulse modulator. Modulator Service maximum CCS plate dissipation (per tube) 15watts.

Further down, it shows the plate supply voltage as 5000V, and the instantaneous plate voltage as 5750V.

829: Heater-cathode type having midtapped heater used as af power amplifier and modulator and as rf power amplifier and oscillator.

CCS dissipation is shown as 30W with natural cooling, and 40W with forced air cooling.

It is pretty clear to me that the 3E29 was rearranged for high plate voltage, and was used as a radar modulator tube. It is designed to put out high voltage square waves.

-Chuck Harris

William Donzelli wrote:
> k7itm@aol.com (Tom Bruhns) wrote in message news:<3200347.0402071602.43ecc1aa@posting.google.com>...
>
>
>>Lots of discussion about using the 829 for VHF power amplifiers, and
>>even audio amplifiers and conversation pieces. But I haven't seen
>>mention here of their use in pulse generators.
>
>
> Or CRT drivers (in the AN/APS-44 aircraft radar, and I think some of
> the Navy PPI repeaters).
>
>
>>Perhaps someone knows: was the 3E29 an 829 re-designed and/or
>>specifically tested for use in pulsers?
>
>
> Probably. 3E29 was used in the Mk III IFF interogators, circa 1943. I
> don't know of any other major uses for the 3E29 (AKA 829A). Real 3E29s
> are getting quite scarce, but 829Bs still can be found in biblical

> quantities.
>
>
>> What was the 829 originally
>>intended for, and when was it first introduced? Who made the first
>>ones, RCA or someone else?

1125. Carmatic card questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 15:09:47 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <102f8luqbuc6b0@corp.supernews.com>
Source record: 28660
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

After 10 years I can't recall if my Hickok Cardmatic LS-15874-L2 or AN/USM-118A or B cards were ever returned or what. My remainder set is not compplete and I wonder if anyone has a set or partial set for sale. I'd also like to know if anyone has figured out an economical way to duplicate them at reasonable cost? Did Hickok make them or a contractor, anyone from Ceveland know?
On another tangent I wonder if anyone knows of any solenoids that are small enough to install on 0.25 inch spacing. With 185 of these, using extended matrix switch pins one could control the switching with a PC. I wonder if anyone recalls seeing some device that uses small solenoids that are small enough and cheap enough to homebrew a matrix. I know that this plus more has already been accomplished with relays but at $1000.00 the mod is unjustifiable for me.
Another alternative would be to have a "crossbar" of 11 by 17 rods or slats with each one driven by a solenoid, requiring the a row and column solenoid to be driven to select a pin. Having a solenoid at each end of the rod might balance the operation. This would require 28 solenoids or double that if one is needed at each end. These could be spaced on 1/2 inch centers by staggering.
If anyone has a better idea please me know but the best would be to find an orphaned set of cards.

73
hank wd5jfr

1126. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 15:47:32 UTC
From: Cambio <CAM@ripped.net>
Message-ID: <oYNVb.11657$IF1.6055@fed1read01>
Source record: 28661
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

For the 829B picture and some "Beautiful Tube Pin-ups " SEE URL:

http://www.dogstar.dantimax.dk/tubestuf/pinups/pinups.htm

--
73- Cambio - Keyboard To You (:-)
"Bill Turner" <noway@nohow.com> wrote in message
news:og9f20pmc9bbseft9tmt7nl7jnisob4udd@4ax.com...
> On 8 Feb 2004 21:44:55 -0800, aw288@osfn.org (William Donzelli) wrote:
>
> >but 829Bs still can be found in biblical
> >quantities.
>
> ____
>
> Now there's a picture! Made my day.
>
> --
> 73, Bill W6WRT

1127. Re: BFO freq how far down SSB filter skirt?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 16:22:45 UTC
From: Gary Schafer <gaschafer@comcast.net>
Message-ID: <8scf20d9rve2shg47g98qv4n4bqk9vh18d@4ax.com>
Source record: 28662

On Sun, 8 Feb 2004 15:04:12 -0500, "Tom Holden"
<holden_family@sympatico.ca> wrote:

>Fred McKenzie wrote:
>> << Pete, that's about as much as I paid for the receiver
>> I'm trying to improve! A Radio Shack DX-394 >>
>>
>> Tom-
>>
>> I missed your original posting. What does the DX-394
>> currently use as an IF filter? If it happens to be made
>> by Murata (or maybe Panasonic), a replacement with better
>> specifications may available to fit in the same PCB
>> holes. Check your filter's part number with the
>> company's web site, and you may find a solution there.
>>
>> However, if it uses the same filter for AM reception, a
>> tighter filter could reduce sound quality of music.
>>
>> 73, Fred, K4DII
>
>Fred, thanks for your follow-up. The DX-394 has two 5-element Murata ceramic
>filters, one 9kHz or wider for AM and one 6 kHz or wider for SSB/CW with a
>BFO offset of +/-3.5kHz from 455kHz. That's why a narrower filter will need
>a BFO mod. There does not appear to be a much narrower filter in the same
>package and from what I understand Murata is out of the ceramic filter
>business. So I guess I will have to keep an eye out for a surplus filter or
>shell out $85 or so for a new 'economical' Collins!
>
>Tom
>

Tom,

Look at the kiwa filters. They are pretty nice.

http://www.kiwa.com/kiwa455.html

73
Gary K4FMX

1128. Re: Help with dipole please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 16:41:01 UTC
From: Larry Gagnon <lagagnon@fakeuniserve.com>
Message-ID: <8fdf20t8pqdrdl83ajmt1qkbp8s5p16l93@4ax.com>
Source record: 28663

On Sat, 7 Feb 2004 12:45:29 -0500, "Hammer" <nubob5001@yahoo.com>
wrote:

>Hi,
>Putting up a 10 through 160 or 10 through 80 meters dipole. I have lots of
>wire and coax and a 1:1 balon. Interested in how the shape or form of this
>dipole should be to work properly? I have to put it into two trees to get
>height. Are there any good links or sights to learn proper making and
>installation?
>Thanks.
>
To keep things simple and multi-band I would suggest you try to feed
your dipole with open wire feeder and use a balanced tuner. You won't
need that balun. I have been doing that with a dipole cut for 80m and
it tunes well on ALL bands (even 160, but is not that great on that
band!) and works effectively for me. Of course you will get different
radiation patterns on each band - but it works and if you have a good
tuner it can be a very efficient antenna for QRP.

I have tried using multi-leg dipoles, G5RV's and trapped dipoles for
different bands but they are harder to set-up and simply did not work
as well for me. I believe your easiest multi-band option is what I
mentioned above.

You can even make your own open-wire feeders for next to nothing and
have a much longer, less lossy feedline than you would get with RG8
coax, especially on 10metres. Get the dipole up as high as possible.
It really is very simple and effective.

Larry Gagnon VE7EA
****
remove "fake" from email address

1129. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 17:19:50 UTC
From: Hern&#65533;n S&#65533;nchez <hernan.sanchez@iname.com>
Message-ID: <c08ffi$13vd68$1@ID-169358.news.uni-berlin.de>
Source record: 28664

Hi.

I have just designed one that uses 2 chips, it is controlled by a PC (parallel port) and it has a software to display measurements.

It works from 1Hz to 80Mhz, and can be improved.. if you want to give it a try, write me and I will send you the schematics and the software to play with it. I have one working in a XESS FPGA card, but it doesn't need all those hardware, just 2 of them.

Regards,

Hern&#65533;n S&#65533;nchez
(hernan dot sanchez at iname dot com)

"SWbeginner" <SWbeginner@nowhere.com> escribi&#65533; en el mensaje news:102dbbcdvmcar90@corp.supernews.com...
> I am looking to build a frequency counter, or buy an inxepensive kit.
> Any recommendations?
> Needs: low cost, few parts count
> Thanks

1130. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 18:37:18 UTC
From: k7itm@aol.com
Message-ID: <3200347.0402091037.7729ba44@posting.google.com>
Source record: 28665

Hi Uwe,

I'll try to remember to send the scan from home tonight. It is just under 4 megabytes, so it will take a while to download, but it is ten pages from the RSGB book, which seems to explain things better than the ARRL article you have (which is the one I also scanned, separately). The RSGB pages I scanned includes I think four different designs, maybe five, as well as some elemental theory.

Yes, I think the Monimatch uses coupled transmission lines, which is what a microstrip (or stripline) coupler is. The microstrip version is (generally) a piece of printed circuit board with a ground plane (uninterrupted copper foil) on one side, and a straight trace on the other side, which is the "through" line, with another trace parallel to the first trace and a small distance away, which is the "coupled" line. You terminate the coupled line at one end (to avoid reflections), and put a detector at the other end, usually just a diode detector for SWR monitoring. That tells you the power in one direction. Then for convenience, you can put an identical coupled line on the other side of the through-line, and terminate it at the opposite end compared with the first coupled line, and put a detector on it at the other end, and that monitors the power in the other direction. So you get two DC outputs, one for "forward" power and one for "reverse" power. One important point that is usually glossed-over, is that diode detectors will respond with an output voltage proportional to the input RF voltage above some level, but with an output voltage proportional to the input RF _power_ at lower levels. You should design the coupling to operate in one or the other of those regions, if you want to more easily make quantitative sense of the readings. (An even better way to do it would be to have a calibrated step attenuator between the "forward" coupled line and the forward detector, and then adjust the attenuator for equal outputs from the two diode detectors. Then the attenuator setting tells you the load's return loss, from which you can find the SWR if you wish.) It's also possible to use phase-sensitive detectors and get the complex load impedance...that's essentially what an S-parameter network analyzer does.

Cheers,
Tom

Uwe Langmesser <outhouse@midcoast.com> wrote in message news:<BC4C8235.CB56%outhouse@midcoast.com>...
> Hi Tom,
>

> No, I don't know the article you mentioned.
> I just got the ARRL Antenna Book and there is a plan for a directional
> coupler using some plumbing hardware and I could see myself building that,
> but again there are some issues about available parts (thru feed caps in
> particular).
> From my (limited) understanding these couplers would be the aquivalent of
> the "plugs" used in meters like the Bird 43 or the URM120.
>
> But I am not sold on this design and would certainly want to look at the
> article you mentioned. And yes, I do have a slow phone connection, but if
> you are willing I would appreciate if you could send the article as an
> attachment.
>
> Now the microstrip coupler you mention, is that what people also call a
> monimatch? What are the advantages of one design over another?
>
> regards Uwe
>
>
>
> in article 3200347.0402081747.128055d0@posting.google.com, Tom Bruhns at
> k7itm@aol.com wrote on 2/8/04 8:47 PM:
>
> > This has been a hot topic recently! I just scanned an ARRL article
> > and a section of the test equipment chapter of the RSGB VHF/UHF
> > Handbook to send to someone else who is interested in making a
> > 146/440MHz SWR monitor, and I just made a couple 100MHz-6GHz detectors
> > for someone else who is looking at monitoring SWR at 2.5GHz.
> >
> > Seems to me the simple way for most folk to do it is to make a
> > microstrip coupler. You can use surface-mount components for the load
> > and detector and RF decoupling, and they'll work quite well up into
> > the GHz region, from my experience. As far as RF decoupling goes, you
> > should be able to do an adequate job on a circuit board...once the
> > detector turns the RF to DC, just put shunt capacitance to ground and
> > series inductance in the line. Pick the inductance as you would for
> > other VHF work: avoid inductors with self-resonances below the freq
> > of interest.
> >
> > You probably have already seen the ARRL article I scanned, but if
> > you'd like the RSGB one, I could send it. But it's almost 4 megabytes
> > and may take you a while to download if you have a slow connection.
> >
> > Cheers,
> > Tom
> >
> >
> > Uwe Langmesser <outhouse@midcoast.com> wrote in message
> > news:<BC4BB8E5.CAEC%outhouse@midcoast.com>...
> >> I have been looking at various designs of VHF SWR bridges, mainly from ARRL

> >> sources like old QSTs and such, and I wonder if anybody here has built a
> >> device like that.
> >> For my experience level some of the old descriptions are just a touch to
> >> cryptic or the design calls for parts which I can't locate (small feed thru
> >> caps are one of those items).
> >> I would love to discuss this with a knowledgable builder.
> >>
> >> 73 Uwe

1131. Re: KIWA Air core Am loop details wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 18:42:56 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c08kbg$bu1$1@freenet9.carleton.ca>
Source record: 28667

"Pete KE9OA" (n.gianakopoulos@worldnet.att.net) writes:
> It must have been some kind of coupling element.................the
> regenerative circuits I have seen otherwise use a pot for the feedback
> element. I did try one of those circuits, and it didn't work too well.
>
> Pete
>
Of course, there were a couple of articles about a regen receiver that
used an optocoupler in QST. One was a straight regen, the other was
a "supergainer", ie a converter ahead of a regen detector. They had
to be in the past 4 or 5 years, though I don't have them handy. I forget
whether the optocoupler was for signal coupling, or for regen control.

Michael VE2BVW

> "Nocturnal1" <file13@nojunkmail.com> wrote in message
> news:401daff4$1_1@newspeer2.tds.net...
>> Geez - I'd give my right ___ for that schematic.
>> Craig may have put alot of work into it, but he's no longer producing
> them.
>> eBay prices are at ridiculous levels for this thing. I just wanna make ONE
>> for myself - not infringe on any copyrights or patents. It won't look the
>> same and probably won't be the same - but I'd sure like to see why the
>> optoisolator is in there...
>> ~Tom
>>
>>
>> "Pete KE9OA" <n.gianakopoulos@worldnet.att.net> wrote in message
>> news:DL8Sb.134777$6y6.2622331@bgtnsc05-news.ops.worldnet.att.net...
>> > I saw a schematic for the amplifier years ago. They key was what
> appeared
>> to
>> > be linear optoisolators in the feedback circuitry.
>> > I was going to build it up, but it looked as if the designer put quite a
>> bit
>> > of work into the circuit design, so I took a pass on it.
>> > I purged the details from my hard drive a few years back.
>> >
>> > Pete
>> >
>> > "Nocturnal1" <file13@nojunkmail.com> wrote in message
>> > news:4018aae8$1_3@newspeer2.tds.net...
>> > > I've built several loops and they are all similar as you say, but the
>> KIWA
>> > > loop is quite a different animal! I've have mild success with what

> I've
>> > done
>> > > so far in my efforts to duplicate one, but I cannot seem to find much
> on
>> > the
>> > > regenerative loop and circuitry contained within it.
>> > >
>> > > ~Tom in Mn
>> > >
>> > >
>> >
>> >
>>
>>
>
>

1132. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 18:48:46 UTC
From: averyfineman@aol.com
Message-ID: <20040209134846.21642.00004319@mb-m01.aol.com>
Source record: 28666

In article <BC4C8235.CB56%outhouse@midcoast.com>, Uwe Langmesser
<outhouse@midcoast.com> writes:

>Now the microstrip coupler you mention, is that what people also call a
>monimatch? What are the advantages of one design over another?

You might think of microstrip or stripline as "hammered flat coax." :-)

It is just a transmission line on a PCB, the characteristic impedance
dependent on trace line width, thickness of the foil, dielectric constant
of the PCB material and, to some extent, the thickness of the PCB.

Directional couplers are simply a quarter wavelength of transmission
line (coax or microstrip or stripline) that runs parallel to the main line
connecting to the antenna. The amount of coupling is dependent on
the spacing between the two lines. Their bandwidth is typically an
octave of frequency.

Typical directional coupler coupling is 20 db down from the main line.
Power is coupled mainly in one direction, from the main line to the
end closest to the coupled line's immediate end. Some power will be
coupled into that end coming in the opposite direction but that is
usually 15 to 25 db farther down. While not perfect, directional
coupling differences of about 20 db are good enough to warrant the
name "directional." Those are very common in microwave work and
from about 400 MHz and up in frequency to around 8 GHz; a quarter
wavelength at 400 MHz gets a bit long. At 20 db coupling, the load
on the coupled line can vary quite a bit without affecting the main
line. Reflections from the load can be accurately compared with
coupled energy from the source; if coupling is measured accurately
in both directions, the VSWR can be computed from amplitude
differences. If the coupled line ends have a way to measure both
amplitude and phase, the complex impedance of the load can be
computed accurately in comparison to the coupled source.

I've built directional couplers at about 1 GHz center frequency but
admit cribbing from older published data on impedances and spacings
from microwave literature. Had a somewhat stiff specification on
coupling which required a few passes at different etch masks for a
large stripline assembly of many things. Not again if I can help it. :-)

Len Anderson
retired (from regular hours) electronic engineer person

1133. Re: Bandwidth vs. Noise???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 20:43:16 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c08rgejlm1@newshost.mot.com>
Source record: 28668

"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040207020110.07984.00000494@mb-m22.aol.com...
> In article <sag620pf5tqd1571dfi503bd64jkulh43l@4ax.com>, Paul Keinanen
> <keinanen@sci.fi> writes:
> >On 05 Feb 2004 17:35:31 GMT, averyfineman@aol.com (Avery Fineman)
> >wrote:
> >> Signal to noise ratio changes as the _square_root_ of bandwidth
> >> change.
> >[...snip...]

> My apologies for not stating a reference. Was thinking in terms of
> voltage, a bad habit picked up with vacuum-state electronics many
> moons ago. [...snip...]

Whew! Thanks... I'm glad to see this post. I was about to post a
question about this, but you cleared it up Avery (or is it Paul...or er,
Len...)

> Digital TV
> has an almost infinite S:N ratio down to the lower limit of its
processing
> capability, none of the noise "snow" effects seen with early days of
> analog TV and distant TV stations "down in the mud."
>

If it is like digital cellular, it will have really good noise down to
some level _at which_ an analog signal would still be watchable (with
noise), then just DIE completely - where the analog signal would me
watchable depending upon the viewer's noise tolerance.
--
Steve N, K,9;d, c. i My email has no u's.

1134. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 22:38:14 UTC
From: g3pho@nospamblueyonder.co.uk
Message-ID: <402a03fd.15918917@news.blueyonder.co.uk>
Source record: 28671

On Sun, 08 Feb 2004 21:43:08 -0000, SWbeginner
<SWbeginner@nowhere.com> wrote:

>I am looking to build a frequency counter, or buy an inxepensive kit.
>Any recommendations?
>Needs: low cost, few parts count
>Thanks

If you live in the UK try looking at www.cumbriadesigns.co.uk
They do a nice little kit for a counter that should easily reach
100MHz. The cost is around ï¿½50 UK I believe (say $85 US). They also do
a similar module for use as a digital readout dial replacement for
older transceivers.

If you are not in the UK I believe the web site quoted above would
still be of interest to you.

Good luck,

Peter, G3PHO

www.g3pho.org.uk

1135. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 23:35:34 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c095jj$5b8$1@newshost.mot.com>
Source record: 28673

\\\ Sheesh! long post alert\\\

Hopefully not unnecessary refinements to Len's comments....

"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040209134846.21642.00004319@mb-m01.aol.com...

> In article <BC4C8235.CB56%outhouse@midcoast.com>, Uwe Langmesser
> <outhouse@midcoast.com> writes: WITH SNIPS HER & THERE...
> >Now the microstrip coupler you mention, is that what people also call a
> >monimatch? What are the advantages of one design over another?

I believe this is correct. It's been a long time, but I should look at
an old handbook to make sure I'm thinking of the right thing. I'm
thinkin' of the version where you "snake" another wire under the shield of a
piece of coax for the pickup.

Side bar: I have one of the first directional power meters, the Micro
match. It uses a resistor, yes, resistor, for the current sense rather than
the now common current transformer toroid. circa 1945 -50.

> You might think of microstrip or stripline as "hammered flat coax."
:-)

The accepted terminology is "Stripline" (think "strip transmission
line") for the line with two flat ground planes on either side of the
"center conductor" which can be thought of as this flattened coax....and
"micro strip" (I have no memory aid) for the one that is one-sided where
the "center conductor" is on the top of a PCB with a ground plane on the
bottom..

> It is just a transmission line on a PCB, the characteristic impedance
> dependent on trace line width, thickness of the foil, dielectric
constant
> of the PCB material and, to some extent, the thickness of the PCB.

I think the PCB material (thickness & properties) has a larger
contribution to the Zo that the runner thickness...at least at the freqs I
worked at (<1GHz.). Good ole' Wheeler & Sobol equations for the Zo.

> Directional couplers are simply a quarter wavelength of transmission
> line (coax or microstrip or stripline) that runs parallel to the main
line
> connecting to the antenna.

I believe a 1/4 wave is not important here. The coupled line can do this
without such a long line. As in the coveted Bird wattmeter "slug", which
has a very short coupled line inside. For understanding just think that

when you put two "center conductors" into a coax, some power will be coupled over to the second one from the first & visa versa. The physical construction determines how much. I will call this added line the "secondary" one.

A bit of the power on the main line gets sent to the coupled (Secondary) line, but it emerges in the opposite direction--this is the "correct" end referred to below.

So you have four connectors. Two for the main line and two for the secondary line.

> Typical directional coupler coupling is 20 db down from the main line.

This is a matter of choice by the manufacturer construction. What this means is that the power coming out the (correct end of the) secondary line is 20dB down (1/100 th) from the power on the main line.

> While not perfect, directional
> coupling differences of about 20 db are good enough to warrant the
> name "directional."

This is a matter of primarily the mechanical design. The "directivity" refers to the amount of power that gets coupled to the secondary line that emerges out the "wrong" end--not the one we want. High or good directivity = little coming out the wrong spigot. With 20dB of directivity, the power emerging from the _wrong_ end of the secondary line is _another_ 20dB below that merging out the correct end of the secondary line. So it is 40 dB down from the main line power. And don't forget conservation of energy. All this "coupled" power is stolen from the main line.

They both should have a nice (50 ohm) impedance and be loaded with 50 ohms as well. The better it is constructed, the less energy is coupled onto the coupled-line in the wrong direction. If done well, the directivity is highest. [The secondary line can have other than 50 ohms, but common use requires it] For the Moni-Match (snaked type) the secondary lines could be some weird Zo and all is well if it is matched pretty well.

Snaking the extra wire into a coax is crude. I don't know what the Zo would be, but it works ok as long as the coupled power has reasonable directivity. Remember, the better the SWR using one of these, the worse the accuracy, for this reason. The power coming out the wrong end of the secondary line corrupts (adds to) the reflected power you are trying to measure.

By the way, you can pump power into the secondary line and have some come out the mainline as well. This is actually done for special uses.

> Len Anderson
> retired (from regular hours) electronic engineer person

Regards, Steve a not-so-retired person-type...Whew!
--
Steve N, K,9;d, c. i My email has no u's. Why do I do this?!?!?

1136. Recomendations for a VNA

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 23:44:17 UTC
From: Bob Liesenfeld <wb0poq@visi.com>
Message-ID: <40281B51.636401C0@visi.com>
Source record: 28672

Hi gang,
I know there are several professional engineering types on the list, so I thought I'd post this here. I teach at a technical college and it is budget time. My boss asked me for a "wish list" and a vector network analyzer came to mind. What I had in mind would be something we could use to characterize small signal BJT and JFET circuits at say 3-30MHz. VHF and UHF would be nice, but not required. I'd be looking for something that could provide real and imaginary values, so as to be able to develop s parameters for various circuits.
In order to qualify for consideration, the unit would have to be new, and non-kit. :(I know HP and others make things like this. Any recommendations?
BTW, I know something like this is going to run in the kilo or tens of kilo buck range. Hey, it's their money and they asked. ;) ;) ;)

Thanks for the input.

Bob WB0POQ

1137. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-09 23:55:07 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1076370908.952581@smtp-1.griffin.com>
Source record: 28674

50-100w at 2m....look at harry's site...sm0vpo...harry's homebrew..

there is a design there that will do you fine..even has the pcb design for you..it works fine..i have tried it..you can make the pcb smaller if you wish.i have used it no problems with 200w at 2m...50r line is 2.8mm with 1/16inch fibreglass pcb, so you can design your own..its not critical how far the sense lines are away from the50r through line,(if you are just after swr bridge) just remember to terminate each (oposite end) with 100r resistor..i have even hand drawn the board and it works fine too....any old diode works too..i can here the keypads typing away saying you must use this diode or that diode, but really use what you have..0a91's will be more sensitive than 1n4001's but who cares at 100w???

if you are after a acturate piece of test equipment then ignore all above..but for working easy to build, cheap, swr meter then you can not go wrong.

n.b. see vhf/uhf dx handbook (rsgb) for similar more accurate (in power terms atleast) swr bridges..

g0zen.
"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040209134846.21642.00004319@mb-m01.aol.com...
> In article <BC4C8235.CB56%outhouse@midcoast.com>, Uwe Langmesser
> <outhouse@midcoast.com> writes:
>
> >Now the microstrip coupler you mention, is that what people also call a
> >monimatch? What are the advantages of one design over another?
>
> You might think of microstrip or stripline as "hammered flat coax."
:-)
>
> It is just a transmission line on a PCB, the characteristic impedance
> dependent on trace line width, thickness of the foil, dielectric
constant
> of the PCB material and, to some extent, the thickness of the PCB.
>
> Directional couplers are simply a quarter wavelength of transmission
> line (coax or microstrip or stripline) that runs parallel to the main
line
> connecting to the antenna. The amount of coupling is dependent on
> the spacing between the two lines. Their bandwidth is typically an
> octave of frequency.
>
> Typical directional coupler coupling is 20 db down from the main line.

> Power is coupled mainly in one direction, from the main line to the
> end closest to the coupled line's immediate end. Some power will be
> coupled into that end coming in the opposite direction but that is
> usually 15 to 25 db farther down. While not perfect, directional
> coupling differences of about 20 db are good enough to warrant the
> name "directional." Those are very common in microwave work and
> from about 400 MHz and up in frequency to around 8 GHz; a quarter
> wavelength at 400 MHz gets a bit long. At 20 db coupling, the load
> on the coupled line can vary quite a bit without affecting the main
> line. Reflections from the load can be accurately compared with
> coupled energy from the source; if coupling is measured accurately
> in both directions, the VSWR can be computed from amplitude
> differences. If the coupled line ends have a way to measure both
> amplitude and phase, the complex impedance of the load can be
> computed accurately in comparison to the coupled source.
>
> I've built directional couplers at about 1 GHz center frequency but
> admit cribbing from older published data on impedances and spacings
> from microwave literature. Had a somewhat stiff specification on
> coupling which required a few passes at different etch masks for a
> large stripline assembly of many things. Not again if I can help it.
:-)
>
> Len Anderson
> retired (from regular hours) electronic engineer person

1138. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 01:02:22 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <102gbd8kqo2hp5c@corp.supernews.com>
Source record: 28675

You might want to consider going to a ham swapfest and buying a good used commercial unit by HP or others. I see very good ones going cheap ($20 to $30) especially if they're 100MHz and below.
73
hank wd5jfr
"SWbeginner" <SWbeginner@nowhere.com> wrote in message news:102dbbcdvmcar90@corp.supernews.com...
> I am looking to build a frequency counter, or buy an inxepensive kit.
> Any recommendations?
> Needs: low cost, few parts count
> Thanks

1139. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 01:05:27 UTC
From: Ross Matheson <rdm@orcon.net.zn>
Message-ID: <vu6g201fa72em9sg1r04n33bn72cokb3ft@4ax.com>
Source record: 28676
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

Chuck Harris <cfharris@erols.com> wrote:
in rec.radio.amateur.boatanchors<4027a0eb$0$3196$61fed72c@news.rcn.com>,

: Hi,
:
: The 3E29 may share a similar appearance, and the same pin out as the
: 829, but it certainly is not interchangable. To quote the RCA TT5
: manual:

Hi, Chuck. "Certainly" is a strong word. In this case, I'd take issue with
your conclusions from those pages of the RCA TT5 manual ... see below:

: 3E29: Heater-cathode type containing two high-perveance units used
: as retangular-wave pulse modulator. Modulator Service maximum
: CCS plate dissipation (per tube) 15watts.
:
: Further down, it shows the plate supply voltage as 5000V, and the
: instantaneous plate voltage as 5750V.

Emphasis on "Modulator Service" for both of those paragraphs ...

: 829: Heater-cathode type having midtapped heater used as af power
: amplifier and modulator and as rf power amplifier and oscillator.
:
: CCS dissipation is shown as 30W with natural cooling, and 40W with
: forced air cooling.

For Class C Telegraphy (and only natural cooling & CCS shown at AF)
De-rated plate voltage and input 89% above 250MHz. Different services.

However, compare the transconductance and mu factors - identical, as are
heater requirements, and as are the three interelectrode capacitances given
- almost; G1 - K, G2, G3, heater mid-tap is 14.0 vs 14.5pf.

It is not inconceivable IMO that "Bill K7NOM"'s assertion that the 3E29 had
a "better cathode" might explain a 0.5pf difference, and that an otherwise
very similiar tube might be derated 50% in plate dissipation for pulse duty.

: It is pretty clear to me that the 3E29 was rearranged for high plate
: voltage, and was used as a radar modulator tube. It is designed to
: put out high voltage square waves.
:
: -Chuck Harris

Given the identical transconductance and mu factors, mostly/almost identical
interelctrode capacitances, and (I assume, not having seen one) similiar if

not identical external appearance in construction, I don't think it could have been "rearranged" very much. I'd hazard a guess that they *are* interchangeable, at least downward, (ie 3E29 anywhere you'd use an 829B) if not 829B for pulse duty. Perhaps they are the same within 829B ratings?

Furthermore, the 1962, 1955, & 1947 ARRL Handbooks I have all list 3E29/829B together, with ratings on the same lines, and G1/fil capacitance as 14.5pf. The latter two also list 829 and 829A, separately, from 3E29/829B together.

It's actually comparing transconductance, mu, and interelctrode C's (let alone typical AF Ra-a figures) that led me earlier to entirely reject loose statements like "they are essentially two 807's (or other) in one bottle".

IIRC, there have been mentions elsewhere that RCA may have labelled identical tubes differently for different services. I think Ned Carlson of Triode Electronics said something about this on rec.audio.tubes once, but I can't find it on a brief look. IOW, marking as different for marketing ...

Here's another suspiciously similiar example from RCA TT5. You know that 6883 and 6159 are identical with 6146 except for heater ratings. Now have a look at 6293 and compare the above factors (& outline, base, etc) with 6146.

Identical, *except* that it's listed for pulse duty, and "Rectangular-Wave Modulator maximum plate dissipation, 10 watts." (ie half, as per 3E29/829B)

What's the bet that you could use a 6293 anywhere to replace a 6146? :-) Vice versa? Is it possible that RCA labelled tubes for different markets?

Maybe the pulse tube versions (if they were such) of otherwise standard transmitting tubes had somewhat better emission or other cathode tinkering for the very high (though short duty) pulse currents; perhaps they were pumped out longer for a harder vacuum; - I speculate, but there do seem to be a few cases where they appear identical (except for pulse plate diss.) with different numbers. IIRC too, there are some tubes with both pulse and normal ratings I've seen data for, but I can't remember any offhand - it would be interesting to compare the plate dissipation for both duty classes.

Cheers!

Ross Matheson

: William Donzelli wrote:
: > k7itm@aol.com (Tom Bruhns) wrote in message news:<3200347.0402071602.43ecc1aa@posting.google.com>...
: >
: >
: >>Lots of discussion about using the 829 for VHF power amplifiers, and
: >>even audio amplifiers and conversation pieces. But I haven't seen
: >>mention here of their use in pulse generators.
: >
: >
: > Or CRT drivers (in the AN/APS-44 aircraft radar, and I think some of
: > the Navy PPI repeaters).

: >
: >
: >>Perhaps someone knows: was the 3E29 an 829 re-designed and/or
: >>specifically tested for use in pulsers?
: >
: >
: > Probably. 3E29 was used in the Mk III IFF interogators, circa 1943. I
: > don't know of any other major uses for the 3E29 (AKA 829A). Real 3E29s
: > are getting quite scarce, but 829Bs still can be found in biblical
: > quantities.
: >
: >
: >> What was the 829 originally
: >>intended for, and when was it first introduced? Who made the first
: >>ones, RCA or someone else?

1140. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 02:05:22 UTC
From: Chuck Harris <cfharris@erols.com>
Message-ID: <40283c62$0$3200$61fed72c@news.rcn.com>
Source record: 28677
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

Hi Ross,

It certainly could be that they are very similar inside.
I have used the 829B, but I have never had my hands on a 3E29.

Purely speculation on my part, but I would guess that the 3E29 has
fewer sharp edges inside to help prevent arc over and other funny
stuff at the 6x increase in plate voltage. I would guess that the
cathode is made of much sterner stuff, and the vacuum is purer.

They make a special point of saying that the 3E29's mu will always
be within 10% of the spec'd value. That tends to indicate that more
care was taken with internal tolerances, particularily cathode to
control grid spacing.

The part I find odd is usually when RCA is listing a similar tube
they will say something like plate curves match 6L6, or some such.
There is a total absence of mention of the 829B in the 3E29 spec
sheet.

What do you want to bet that the 3E29 also cost 3x the 829B?

Anybody have a 1950 price sheet?

-Chuck Harris

Ross Matheson wrote:
> Chuck Harris <cfharris@erols.com> wrote:
> in rec.radio.amateur.boatanchors<4027a0eb$0$3196$61fed72c@news.rcn.com>,
>
> : Hi,
> :
> : The 3E29 may share a similar appearance, and the same pin out as the
> : 829, but it certainly is not interchangable. To quote the RCA TT5
> : manual:
>
> Hi, Chuck. "Certainly" is a strong word. In this case, I'd take issue with
> your conclusions from those pages of the RCA TT5 manual ... see below:
>

1141. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 02:46:25 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <abhg20l7h1hn8ht3babpvc84velrpso8ur@4ax.com>
Source record: 28679

On Sun, 08 Feb 2004 21:43:08 -0000 SWbeginner <SWbeginner@nowhere.com>
wrote:

>I am looking to build a frequency counter, or buy an inxepensive kit.
>Any recommendations?
>Needs: low cost, few parts count

I have a number of very nice HP counters for frequencies from 20Hz to
1.3 GHz. Prices vary depending on what frequencies and features you
want over a range from $60 to $200. They are all very high quality and
extremely accurate. These are small AC powered units.

Email me for a list if you think you might be interested.

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA

1142. Re: Carmatic card questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 03:07:39 UTC
From: Rob Dunn <robdunn1@earthlink.net>
Message-ID: <%VXVb.18132$F23.13466@newsread2.news.pas.earthlink.net>
Source record: 28678
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

Evening all,

This is a good question. I too have a LS-15874-L2 that came with the small deck that supports only Western Electric tubes and have thought about seeing if I could get new blanks made so I could program my own tubes as needed. Has anyone done this in the past? If so were the cards usable?

Rob

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message news:102f8luqbuc6b0@corp.supernews.com...
> After 10 years I can't recall if my Hickok Cardmatic LS-15874-L2 or
> AN/USM-118A or B cards were ever returned or what. My remainder set is not
> compplete and I wonder if anyone has a set or partial set for sale. I'd
> also like to know if anyone has figured out an economical way to duplicate
> them at reasonable cost? Did Hickok make them or a contractor, anyone from
> Ceveland know?
> On another tangent I wonder if anyone knows of any solenoids that are
> small enough to install on 0.25 inch spacing. With 185 of these, using
> extended matrix switch pins one could control the switching with a PC. I
> wonder if anyone recalls seeing some device that uses small solenoids that
> are small enough and cheap enough to homebrew a matrix. I know that this
> plus more has already been accomplished with relays but at $1000.00 the mod
> is unjustifiable for me.
> Another alternative would be to have a "crossbar" of 11 by 17 rods or
> slats with each one driven by a solenoid, requiring the a row and column
> solenoid to be driven to select a pin. Having a solenoid at each end of the
> rod might balance the operation. This would require 28 solenoids or double
> that if one is needed at each end. These could be spaced on 1/2 inch
> centers by staggering.
> If anyone has a better idea please me know but the best would be to find
> an orphaned set of cards.
>
> 73
> hank wd5jfr
>
>

1143. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 03:52:33 UTC
From: mcalhoun@ksu.edu
Message-ID: <c09ki1$jh4@unix2.cc.ksu.edu>
Source record: 28681

>...[snip]....
> I got spoiled with #24 and #26 Teflon insulated solid wire, strips
> easily and never abrades the insultation.

And you can just jam the point of a soldering pencil down
into a "rats nest" and not melt a bit of insulation!

--Myron.
--
Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge
PhD EE (retired). "Barbershop" tenor. CDL(PTXS). W0PBV. (785) 539-4448
NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle, Pistol)

1144. Re: messing with a car radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 04:03:56 UTC
From: mcalhoun@ksu.edu
Message-ID: <c09l7c$jjj@unix2.cc.ksu.edu>
Source record: 28680
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.shortwave

>> 1. What do I need to do/build the headphone connection? Can I put
>> something together using the car radio speaker wires?

>You can use the speaker wires, however, the audio used to feed the speakers
>will be amplified, and will probably overdrive your headphones. You'll need
>to find a way to match the headphones to the speaker output.

On the other hand, if you are using modern low-impedence headphones,
just attaching them across the speaker wires may work well enough.

Of course, you'd probably want to add a phone jack with an extra contact
to cut the speaker out of the circuit when the phone plug is inserted.
With a little thought, you might even be able to add a resistor or two
to adsorb some of the "extra" audio that went to the speaker.

--Myron.
--
Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge
PhD EE (retired). "Barbershop" tenor. CDL(PTXS). W0PBV. (785) 539-4448
NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle, Pistol)

1145. Re: Carmatic card questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 06:28:06 UTC
From: Mark Oppat <moppat@comcast.NOSPAMnet>
Message-ID: <ypidnWU-Cs225bXdRVn-hA@comcast.com>
Source record: 28682
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

Chris Haedt of Grand Blanc Michigan is the expert on these testers, and has
been making cards for them.
email him at:
Chris@NOSPAMairpump.com remove nospam to reply.

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:102f8luqbuc6b0@corp.supernews.com...
> After 10 years I can't recall if my Hickok Cardmatic LS-15874-L2 or
> AN/USM-118A or B cards were ever returned or what. My remainder set is
not
> compplete and I wonder if anyone has a set or partial set for sale. I'd
> also like to know if anyone has figured out an economical way to duplicate
> them at reasonable cost? Did Hickok make them or a contractor, anyone
from
> Ceveland know?
> On another tangent I wonder if anyone knows of any solenoids that are
> small enough to install on 0.25 inch spacing. With 185 of these, using
> extended matrix switch pins one could control the switching with a PC. I
> wonder if anyone recalls seeing some device that uses small solenoids that
> are small enough and cheap enough to homebrew a matrix. I know that this
> plus more has already been accomplished with relays but at $1000.00 the
mod
> is unjustifiable for me.
> Another alternative would be to have a "crossbar" of 11 by 17 rods or
> slats with each one driven by a solenoid, requiring the a row and column
> solenoid to be driven to select a pin. Having a solenoid at each end of
the
> rod might balance the operation. This would require 28 solenoids or
double
> that if one is needed at each end. These could be spaced on 1/2 inch
> centers by staggering.
> If anyone has a better idea please me know but the best would be to
find
> an orphaned set of cards.
>
> 73
> hank wd5jfr
>
>

1146. Re: PT9783 spec??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 06:31:23 UTC
From: bunnydawg <r.heenan@sympatico.ca>
Message-ID: <sW_Vb.3885$sO4.565562@news20.bellglobal.com>
Source record: 28685

Try
http://www.s-direktnet.de/homepages/sangmeister/daten/attent.htm
He has datasheets and appears to be able to answer inquiries for you.
Did i mention google is where i found this. Great search engine for most
anything. You should try it sometime.
Actually i didn't look any further then this so search again you might have
even better luck.
Robert
VE3 something or other
"zindazenda" <zen@lineisp.co.uk> wrote in message
news:1076295055.291750@smtp-1.griffin.com...
> hi
> does anyone know the spec of the rf power tr. PT9783???
>
> Gain? power out? max ft.?
>
> thanks..g0zen
>
>

1147. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 06:33:55 UTC
From: averyfineman@aol.com
Message-ID: <20040210013355.25815.00006531@mb-m07.aol.com>
Source record: 28683

In article <c09ki1$jh4@unix2.cc.ksu.edu>, mcalhoun@ksu.edu writes:

>> I got spoiled with #24 and #26 Teflon insulated solid wire, strips
>> easily and never abrades the insultation.
>
>And you can just jam the point of a soldering pencil down
>into a "rats nest" and not melt a bit of insulation!

Yes! But, I didn't want to rub that in to homebrewers. :-)

Sigh, I'm way overdue for searching electronic dumps for teflon covered wire...old nylon-jacketed PVC is still old and still melts.

[I'm secretly glad no one remarked on the extra T in 'insulation,' that would be instigation of insulting the insulation installation... :-)]

Len Anderson
retired (from regular hours) electronic engineer person

1148. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 06:33:57 UTC
From: averyfineman@aol.com
Message-ID: <20040210013357.25815.00006532@mb-m07.aol.com>
Source record: 28684

In article <c095jj$5b8$1@newshost.mot.com>, "Steve Nosko"
<suteuve.nosukowicuz@moutouroula.com> writes:

<some snipping of a good post to avoid undue long length...>

> The accepted terminology is "Stripline" (think "strip transmission
>line") for the line with two flat ground planes on either side of the
>"center conductor" which can be thought of as this flattened coax....and
>"micro strip" (I have no memory aid) for the one that is one-sided where
>the "center conductor" is on the top of a PCB with a ground plane on the
>bottom..

That's quite probably true. Textbooks have the "correct" description
but some in the RF field get over-wrought about terminology and
techno-propriety. :-)

Either type of physical construction makes a TEM (Transverse
ElectroMagnetic) transmission line, just like coaxial cable.

> I believe a 1/4 wave is not important here.

For an octave bandwidth and even coupling it is. Those directional
couplers show about less than +/- 1 db difference in coupling versus
frequency over that octave. If the object to obtain a low phase error
over frequency as well as magnitude, then there has to be adherence
to "traditional" shapes-configurations.

ANY conductor running close to and parallel to a transmission line
center conductor will couple something into the coupling line.
For a dual coupler arrangement in SWR checking by magnitude
alone the actual coupling values in db aren't all that important in
getting a relative reading of forward versus reverse.

>> Typical directional coupler coupling is 20 db down from the main line.
>
> This is a matter of choice by the manufacturer construction. What this
>means is that the power coming out the (correct end of the) secondary line
>is 20dB down (1/100 th) from the power on the main line.

I'll say that it is a value chosen by the users...manufacturers make
all kinds of coupler coupling values but most seem to go to the 20 db
value because it is a compromise between coupled signal strength
and the effects on the main line from the coupled line and its varying
load impedances. With 20 db coupling (1/100th power as you noted),
the main line is hardly affected whether the coupled line is terminated
in proper resistive value or open or shorted.

>> While not perfect, directional
>> coupling differences of about 20 db are good enough to warrant the
>> name "directional."
>
> This is a matter of primarily the mechanical design.

Mechanical AND electrical...that also influences the directivity.

>The "directivity"
>refers to the amount of power that gets coupled to the secondary line that
>emerges out the "wrong" end--not the one we want.

"Directivity" values are the sum of forward coupling and reverse
coupling. If a coupler has 20 db coupling and the directivity is
45 db, the reverse coupling is down 25 db. [numerical example
only] "Single" couplers have only 3 ports. "Duals" have 4.

>from the main line power. And don't forget conservation of energy. All
>this "coupled" power is stolen from the main line.

At 20 db coupling, a bad coupled line termination results in a 1%
change of the main line power level. Small value, hard to measure
or hard to see on a meter.

> They both should have a nice (50 ohm) impedance and be loaded with 50
>ohms as well.

Only if that is the main line characteristic impedance being used. The
TV cable folks work with 75 Ohm Zo and have couplers for that main
line with no problem.

>requires it] For the Moni-Match (snaked type) the secondary lines could be
>some weird Zo and all is well if it is matched pretty well.

But...the amount of coupling CAN vary considerably with frequency
even though direction of coupling has an good relative agreement.
I'll base that on measuring the "snaked-through-the-large-coax" kind
(two different versions) intended for higher HF bands that had about
15 db difference between the two of them AND had quite a variation
in coupling over frequency. Did that about 40 years ago and didn't
get to keep the notes. Did the same with a rigid copper pipe coax
section having a slot for insertion of a coupling line about 30 years
ago and it was more even in coupling over high HF and reproducible
(based on the same measurement set-ups used by another to check
duplicates shortly thereafter).

To make duplicates of an article's presentation requires a slavish
devotion to copying EXACTLY as described. It's not a case of just
snaking it through the coax, running alongside the outer conductor
braid...which can result in a remarkable variance from the original due
to coax flexibility. With all the available copper piping in many sizes
in home repair stores, the choice of spending a bit more time rather
with a piece of flexible coax will be far more worth it in the long run.

>By the way, you can pump power into the secondary line and have some come
>out the mainline as well. This is actually done for special uses.

3 db couplers, also known as "hybrid couplers." Very good for making
wideband push-pull or push-push amplifiers out of modular amplifiers.

I'll just add that some directional couplers, both single and dual, are
made with double-sided PCB material, the coupled line on one side,
the main line on the other. Those seem to be good (as products) only
to about 4 GHz or so due to variation in dielectric constant and board
thickness variation. The tiny versions of the last decade use "hard"
substrates of ceramic, etc., and the so-called "blue line" of co-fired
construction from Mini-Circuits is an example. High dielectric constant
in substrate allows making them smaller and the material insures
stability and good control in manufacture.

Once something to be used for measurement is done, there is no
guarantee that it will work as planned. Separate testing needs to be
done to prove it out. That requires measurement with accuracy of
power levels of large dynamic range. The microcontroller display
power meter using an Analog Devices log detector is excellent for
that purpose, dynamic range as large as the basic log detector's
specs. Those seem to be popular in Denmark and Germany according
to the number of ham websites and commentary and photos therefrom.
Search under "power meter" and ignore the commercial hits to find
several ham sites having such homebuilt meters.

Len Anderson
retired (from regular hours) electronic engineer person

1149. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 08:03:43 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <dYS31FCfBJKAFAoU@ifwtech.co.uk>
Source record: 28687

Avery Fineman wrote:
>In article <c09ki1$jh4@unix2.cc.ksu.edu>, mcalhoun@ksu.edu writes:
>
>>> I got spoiled with #24 and #26 Teflon insulated solid wire, strips
>>> easily and never abrades the insultation.
>>
>>And you can just jam the point of a soldering pencil down
>>into a "rats nest" and not melt a bit of insulation!
>
> Yes! But, I didn't want to rub that in to homebrewers. :-)
>
> Sigh, I'm way overdue for searching electronic dumps for teflon covered
> wire...old nylon-jacketed PVC is still old and still melts.
>
At a hamfest on Sunday, a trader was selling teflon insulated
silver-plated stranded hookup wire in two sizes, as "aerial wire". I
bought 50 metres, but by no means all of it is going up in the air.

Len, you said it "strips easily"... well, maybe I haven't found the
right kind of wire strippers yet. What kind do you use?

> [I'm secretly glad no one remarked on the extra T in 'insulation,' that
> would be instigation of insulting the insulation installation... :-)]
>
Would we ever do such a thing?

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

1150. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 08:49:03 UTC
From: Ross Matheson <rdm@orcon.net.zn>
Message-ID: <2hug2054vpr1orvu0pqnsi4k57ej1lvtj1@4ax.com>
Source record: 28686
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

Chuck Harris <cfharris@erols.com> wrote:
in rec.radio.amateur.boatanchors<40283c62$0$3200$61fed72c@news.rcn.com>,

: Hi Ross,
:
: It certainly could be that they are very similar inside.
: I have used the 829B, but I have never had my hands on a 3E29.

Ditto. (Well, I haven't actually *used* them yet - they're still NIB! :-)

: Purely speculation on my part, but I would guess that the 3E29 has
: fewer sharp edges inside to help prevent arc over and other funny
: stuff at the 6x increase in plate voltage. I would guess that the
: cathode is made of much sterner stuff, and the vacuum is purer.

I have seen mention of harder vacuum and tolerances in pulse-rated tubes.

Ned, in a 1997 r.a.t post, compares a pulse-rated 4PR65A to a 4-65A, itself already having a higher vacuum than your average receiving tube, and notes that the latter wouldn't sub for the former. [http://tinyurl.com/3c5wx] Elsewhere he mentions 4-400A and 4PR400A. Eimac numbers, I think.

: They make a special point of saying that the 3E29's mu will always
: be within 10% of the spec'd value. That tends to indicate that more
: care was taken with internal tolerances, particularily cathode to
: control grid spacing.

Quite possibly. I hadn't heard the 10%. Top of the bell curve selection?

: The part I find odd is usually when RCA is listing a similar tube
: they will say something like plate curves match 6L6, or some such.
: There is a total absence of mention of the 829B in the 3E29 spec
: sheet.

Exactly my point with the 6146 equivalent examples, all from TT5.
All listed as sharing 6146 data except for that very alike pulse tube 6293.

Yet, again, the ARRL Handbook data section has 3E29/829B sharing.

That German audio retailer with the Chinese amps has them using 829B, 3E29, or GU-29, implying AF similiarity. There's a clear picture of the GU-29 at: http://ly1dq.hypermart.net/gu-29.htm (and a simple 2M TX example at http://ly1dq.hypermart.net/exam/gu-29_01.gif , to stay slightly on topic:-)

: What do you want to bet that the 3E29 also cost 3x the 829B?

(:=}) Quite possible, since military or other radar the likely application.
Plus it likely wouldn't do to say "Just use our 829B, it'll work fine" ;-)

They must have at least been "selected" or perhaps built to better specs.

It wouldn't make sense to be building an essentially identical tube too
differently. A subtly different cathode coating, perhaps, for the different
pulse current requirements? (like starting batteries vs storage) (total
speculation on my part!) and a longer time on the vacuum pump would be easy
to arrange on the same production line, with the build otherwise identical.
Perhaps harder vacuum plus statistical selection alone would be enough?

Ah! I've been scrolling through my files, and found some text on 829B/3E29
I'd saved from the Joenet archives (someone building an amp with one or two)
in which Gary Longrie says "Same tube, but the 3E29 is pulse rated, can hold
off 5kv, being built with ceramic parts."

I don't know how true this is ...

I notice that the UK mil CV2666 has a completely extra top mica disc above
the plates, extending all the way to to the glass, with ceramic inserts, as
well as the bottom metal disk with ceramic inserts like the RCA 829B.

It just occurred to me to do an image search on 3E29. Sure enough,
http://www5b.biglobe.ne.jp/~tritium/rca3e29-1.jpg
http://www5b.biglobe.ne.jp/~tritium/rca3e29-2.jpg
http://www5b.biglobe.ne.jp/~tritium/rca3e29-3.jpg

http://home.snafu.de/appelt/tubes/3E29.jpg

It looks the same as the RCA 829B that I have here, as far as I can see.

Hmm. http://hereford.ampr.org/cgi-bin/tube?tube=3E29
-
"Maximum Ratings (Design Center Values)

Plate Voltage ..... 750 Volts
Grid No. 2 Voltage ..... 240 Volts
Plate Dissipation ..... 40 Watts
Grid No. 2 Dissipation ..... 7 Watts

For other characteristics and typical operation, see 829B"

–

http://www.r-type.org/exhib/aaa0174.htm shows 829B (& "=" 3E29)

Commentary mentions the superior European double tetrodes, which

"made the 829B and 832 obsolete, and offered greater output power.
This valve type would not have been the valve of choice by 1950.
Currently, designs exist to use all of the VHF double tetrodes as audio
amplifiers, these are physically beautiful devices and deserve to be seen."

: Anybody have a 1950 price sheet?
:
: -Chuck Harris

That would be interesting, too.

RdM

[obviously with too much time on his hands right now, but likes his 829B!]

1151. Phillips/Manavox D2999 receiver schematic or service manual wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 09:23:10 UTC
From: Don Fletcher <d.fletcher@xtra.co.nz>
Message-ID: <Ap1Wb.40049$9k7.825299@news.xtra.co.nz>
Source record: 28688

Could anyone send me any information as to where i can get a schematic or service manual for a Phillips or Magnavox D2999 radio receiver. the receiver covers around 150hz to 30mhz and my one has lost sensitivity and i need more information so i can fix it. Please email Don at d.fletcher@xtra.co.nz

1152. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 09:37:01 UTC
From: Ross Matheson <rdm@orcon.net.zn>
Message-ID: <h29h20heao0nrn7g9b74hsb8a810hp44e0@4ax.com>
Source record: 28689
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

Chuck Harris <cfharris@erols.com> wrote:

: The part I find odd is usually when RCA is listing a similar tube
: they will say something like plate curves match 6L6, or some such.
: There is a total absence of mention of the 829B in the 3E29 spec
: sheet.

Oddly, after all my previous post, I hadn't looked at an RCA 3E29 spec.
This old one (TT?) from 1946, does say " Similiar to type 829-B, but
intended particularly for pulse modulator service."
http://www.mif.pg.gda.pl/homepages/frank/sheets/049/3/3E29.pdf

Still unclear on what makes the difference, though.

1153. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 10:27:08 UTC
From: Ross Matheson <rdm@orcon.net.zn>
Message-ID: <0fbh20hoq0ke1ponu91d2rsf0riq2kkhad@4ax.com>
Source record: 28690
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

mikea@mikea.ath.cx (Mike Andrews) wrote:

: In <4bddccded265bb98a0c3f9d6e4d5621c@news.meganetnews.com> (rec.radio.amateur.homebrew),
Dave wrote:
:
: > What sort of plate caps were used? There are just pins, and
: > it looks almost as if there would have been a ceramic gizmo
: > like a tube socket to have bridged the two of them....
:
: On the transmitter for the AN/ARC-3, the plate leads just had push-on
: clips with a little bit of spring-loading, much like the contacts in a
: tube socket.

In the RSGB Amateur Radio Handbook 3rd Ed. they went so far (full construction details) as to give details of a drilled and tapped (for grub screw) 3/4" x 5/16" brass rod, for QQV06-40 / 5894 (has thicker pins)!

You might consider using the brass inserts from terminal connector blocks, which already have grub screws and come in at least a couple of sizes.

Since the anode tank circuits then often used flexible copper strip to possibly more brass rod in these British circuits, a bit of heat-sinking would be taking place as well, I think. May as well use a heavy contact.

The 829B needs external neutralising, unlike 5894 with it built-in.

I could scan the few pages of the 1947 ARRL I have showing 829B, but you might want to find the few years following for more, maybe improved ones.

1154. Re: Phillips/Manavox D2999 receiver schematic or service manual wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 10:47:04 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.00000049.005439a1@btinternet.com>
Source record: 28691

Hi,

> Could anyone send me any information as to where i can get a schematic or
> service manual for a Phillips or Magnavox D2999 radio receiver. the receiver
> covers around 150hz to 30mhz and my one has lost sensitivity and i need more
> information so i can fix it. Please email Don at d.fletcher@xtra.co.nz

Replied by e-mail.

- Joe

1155. Re: Recomendations for a VNA

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 13:16:05 UTC
From: Dale Parfitt <par@parelectronics.com>
Message-ID: <pQ4Wb.6993$%X3.4222@nwrddc01.gnilink.net>
Source record: 28692

"Bob Liesenfeld" <wb0poq@visi.com> wrote in message
news:40281B51.636401C0@visi.com...
> Hi gang,
> I know there are several professional engineering types on the list,
> so I thought I'd post this here. I teach at a technical college and it
> is budget time. My boss asked me for a "wish list" and a vector network
> analyzer came to mind. What I had in mind would be something we could
> use to characterize small signal BJT and JFET circuits at say 3-30MHz.
> VHF and UHF would be nice, but not required. I'd be looking for
> something that could provide real and imaginary values, so as to be able
> to develop s parameters for various circuits.
> In order to qualify for consideration, the unit would have to be new,
> and non-kit. :(I know HP and others make things like this. Any
> recommendations?
> BTW, I know something like this is going to run in the kilo or tens of
> kilo buck range. Hey, it's their money and they asked. ;) ;) ;)
>
> Thanks for the input.
>
> Bob WB0POQ
>

Have a look at Paul's VNBA at:
http://users.adelphia.net/~n2pk/

Accuracy is wonderful, software is elegant.
These are being kitted in the $200 range. Don't let the price mislead you-
this is a lab quality instrument.
No affiliation, just admiration.
Dale W4OP

1156. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 14:40:26 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <kaednQ8Q54YocbXdRVn-ug@comcast.com>
Source record: 28693

You can buy a HP 5328A or B on EBay for less than $50. Even the nixie 5326B which is ancient -- will provide many more years of service. These two can be described as "ubiquitous". The 5334 is also a very nice two-channel unit.

Jack

"SWbeginner" <SWbeginner@nowhere.com> wrote in message news:102dbbcdvmcar90@corp.supernews.com...
> I am looking to build a frequency counter, or buy an inxepensive kit.
> Any recommendations?
> Needs: low cost, few parts count
> Thanks

1157. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 16:15:11 UTC
From: Bill Janssen <billjNOTTHIS@ieee.org>
Message-ID: <js7Wb.15446$lf4.11666@news01.roc.ny>
Source record: 28694
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

Ross Matheson wrote:

>Chuck Harris <cfharris@erols.com> wrote:
> in rec.radio.amateur.boatanchors<4027a0eb$0$3196$61fed72c@news.rcn.com>,
>
>: Hi,
>:
>: The 3E29 may share a similar appearance, and the same pin out as the
>: 829, but it certainly is not interchangable. To quote the RCA TT5
>: manual:
>
>Hi, Chuck. "Certainly" is a strong word. In this case, I'd take issue with
>your conclusions from those pages of the RCA TT5 manual ... see below:
>
>: 3E29: Heater-cathode type containing two high-perveance units used
>: as retangular-wave pulse modulator. Modulator Service maximum
>: CCS plate dissipation (per tube) 15watts.
>:
>: Further down, it shows the plate supply voltage as 5000V, and the
>: instantaneous plate voltage as 5750V.
>
>Emphasis on "Modulator Service" for both of those paragraphs ...
>
>: 829: Heater-cathode type having midtapped heater used as af power
>: amplifier and modulator and as rf power amplifier and oscillator.
>:
>: CCS dissipation is shown as 30W with natural cooling, and 40W with
>: forced air cooling.
>
>For Class C Telegraphy (and only natural cooling & CCS shown at AF)
>De-rated plate voltage and input 89% above 250MHz. Different services.
>
>However, compare the transconductance and mu factors - identical, as are
>heater requirements, and as are the three interelectrode capacitances given
>- almost; G1 - K, G2, G3, heater mid-tap is 14.0 vs 14.5pf.
>
>It is not inconceivable IMO that "Bill K7NOM"'s assertion that the 3E29 had
>a "better cathode" might explain a 0.5pf difference, and that an otherwise
>very similiar tube might be derated 50% in plate dissipation for pulse duty.
>
>: It is pretty clear to me that the 3E29 was rearranged for high plate
>: voltage, and was used as a radar modulator tube. It is designed to
>: put out high voltage square waves.

>:
>: -Chuck Harris
>
>Given the identical transconductance and mu factors, mostly/almost identical
>interelctrode capacitances, and (I assume, not having seen one) similiar if
>not identical external appearance in construction, I don't think it could
>have been "rearranged" very much. I'd hazard a guess that they *are*
>interchangeable, at least downward, (ie 3E29 anywhere you'd use an 829B) if
>not 829B for pulse duty. Perhaps they are the same within 829B ratings?
>
>Furthermore, the 1962, 1955, & 1947 ARRL Handbooks I have all list 3E29/829B
>together, with ratings on the same lines, and G1/fil capacitance as 14.5pf.
>The latter two also list 829 and 829A, separately, from 3E29/829B together.
>
>It's actually comparing transconductance, mu, and interelctrode C's (let
>alone typical AF Ra-a figures) that led me earlier to entirely reject loose
>statements like "they are essentially two 807's (or other) in one bottle".
>
>IIRC, there have been mentions elsewhere that RCA may have labelled
>identical tubes differently for different services. I think Ned Carlson of
>Triode Electronics said something about this on rec.audio.tubes once, but I
>can't find it on a brief look. IOW, marking as different for marketing ...
>
>Here's another suspiciously similiar example from RCA TT5. You know that
>6883 and 6159 are identical with 6146 except for heater ratings. Now have a
>look at 6293 and compare the above factors (& outline, base, etc) with 6146.
>
>Identical, *except* that it's listed for pulse duty, and "Rectangular-Wave
>Modulator maximum plate dissipation, 10 watts." (ie half, as per 3E29/829B)
>
>What's the bet that you could use a 6293 anywhere to replace a 6146? :-)
>Vice versa? Is it possible that RCA labelled tubes for different markets?
>
>Maybe the pulse tube versions (if they were such) of otherwise standard
>transmitting tubes had somewhat better emission or other cathode tinkering
>for the very high (though short duty) pulse currents; perhaps they were
>pumped out longer for a harder vacuum; - I speculate, but there do seem to
>be a few cases where they appear identical (except for pulse plate diss.)
>with different numbers. IIRC too, there are some tubes with both pulse and
>normal ratings I've seen data for, but I can't remember any offhand - it
>would be interesting to compare the plate dissipation for both duty classes.
>
>Cheers!
>
>Ross Matheson
>
Can't argue with the above but my memory says that the high currents in
pulse duty could strip
material from the cathode. The pulse rated tubes had a more robust
cathode. That was a long

time back so can't be sure of my facts at this time

Bill K7NOM

>
>: William Donzelli wrote:
>: > k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0402071602.43ecc1aa@posting.google.com>...
>: >
>: >
>: >>Lots of discussion about using the 829 for VHF power amplifiers, and
>: >>even audio amplifiers and conversation pieces. But I haven't seen
>: >>mention here of their use in pulse generators.
>: >
>: >
>: > Or CRT drivers (in the AN/APS-44 aircraft radar, and I think some of
>: > the Navy PPI repeaters).
>: >
>: >
>: >>Perhaps someone knows: was the 3E29 an 829 re-designed and/or
>: >>specifically tested for use in pulsers?
>: >
>: >
>: > Probably. 3E29 was used in the Mk III IFF interogators, circa 1943. I
>: > don't know of any other major uses for the 3E29 (AKA 829A). Real 3E29s
>: > are getting quite scarce, but 829Bs still can be found in biblical
>: > quantities.
>: >
>: >
>: >> What was the 829 originally
>: >>intended for, and when was it first introduced? Who made the first
>: >>ones, RCA or someone else?
>
>
>

1158. Re: Help with dipole please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 16:43:07 UTC
From: Larry Gagnon <lagagnon@fakeuniserve.com>
Message-ID: <dd2i20l616ekgdll6ljgvmv68cmdcuchem@4ax.com>
Source record: 28695

On Sat, 7 Feb 2004 12:45:29 -0500, "Hammer" <nubob5001@yahoo.com>
wrote:

>Hi,
>Putting up a 10 through 160 or 10 through 80 meters dipole. I have lots of
>wire and coax and a 1:1 balon. Interested in how the shape or form of this
>dipole should be to work properly? I have to put it into two trees to get
>height. Are there any good links or sights to learn proper making and
>installation?
>Thanks.
>
Also, make sure that one end of your dipole is fastened to the tree
with a weighted pulley system, so that when you get strong winds the
dipole won't snap. I run the line through a small pulley attached to
the tree and then hang a brick off the end of that line. Works very
well in winds to give the dipole some give.

Larry VE7EA
****
remove "fake" from email address

1159. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 16:55:09 UTC
From: k7itm@aol.com
Message-ID: <3200347.0402100855.1ccaaf95@posting.google.com>
Source record: 28696

"Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote in message
news:<c095jj$5b8$1@newshost.mot.com>...

> Side bar: I have one of the first directional power meters, the Micro
> match. It uses a resistor, yes, resistor, for the current sense rather than
> the now common current transformer toroid. circa 1945 -50.

Not really all that uncommon. A Wheatstone bridge works fine for
monitoring SWR, and transformer-coupled versions of essentially a
Wheatstone bridge are commonly used in S-parameter test sets used with
network analyzers. Nice for flat response over lots of octaves, if
you are verrrry careful about the construction.

> > You might think of microstrip or stripline as "hammered flat coax."
> :-)
>
> The accepted terminology is "Stripline" (think "strip transmission
> line") for the line with two flat ground planes on either side of the
> "center conductor" which can be thought of as this flattened coax....and
> "micro strip" (I have no memory aid) for the one that is one-sided where
> the "center conductor" is on the top of a PCB with a ground plane on the
> bottom..

(And though stripline is true TEM, microstrip is quasi-TEM because of
the different dielectric above and below the microstrip.)
>
> > It is just a transmission line on a PCB, the characteristic impedance
> > dependent on trace line width, thickness of the foil, dielectric
> constant
> > of the PCB material and, to some extent, the thickness of the PCB.
>
> I think the PCB material (thickness & properties) has a larger
> contribution to the Zo that the runner thickness...at least at the freqs I
> worked at (<1GHz.). Good ole' Wheeler & Sobol equations for the Zo.

Yep, by far. The free "RFSim99" program will help with the dimensions
for five different kinds of couplers, you pick the coupling, including
stripline and microstrip. The one thing it fails to mention is the
1/4 wave line length for the given coupling.
>
>
> > Directional couplers are simply a quarter wavelength of transmission
> > line (coax or microstrip or stripline) that runs parallel to the main
> line
> > connecting to the antenna.
>

> I believe a 1/4 wave is not important here.

Right...but beware of NULLS in the response at integer multiples of 1/2 wavelength, and the response returns to the same value at 3/4 wave as it was at 1/4 wave. They are broadly rounded peaks, as Len says useful over perhaps an octave for non-precision power measurements. This can be used to advantage for a 146-440MHz coupler: make it 1/4 wave at 146, and it will respond fine at 3/4 wave at 440. But 1/4 wave (even with the 0.5 VF of glass-epoxy circuit board mtrl) is a bit long. But...you can fold that in a "U" and get it down to ten inches or so board length.

For broader bandwidth, it's common to make the stripline or microstrip in three (or five, or...) sections with varying coupling. The center section is highest coupling, and the outer sections are lower. You can find design info on the web about this. The broadening is quite significant.

...
> > Typical directional coupler coupling is 20 db down from the main line.
>
> This is a matter of choice by the manufacturer construction. What this
> means is that the power coming out the (correct end of the) secondary line
> is 20dB down (1/100 th) from the power on the main line.

In fact, -20dB with 100 watts input gives you a WATT at the "FWD" output, which is WAY more than I want to deal with! Simple diode detectors let me "see" down to -50dBm, so even a milliwatt is really more than I need. Even with 10mW of excitation, a -30dB coupler is quite useful. DESIGN the coupler to give you what you want at the output!
>
>
> > While not perfect, directional
> > coupling differences of about 20 db are good enough to warrant the
> > name "directional."
>
> This is a matter of primarily the mechanical design.

AND the loading on the "other" end of the coupled line. Steve touched on this, but I think it deserves more emphasis. Consider: if you have a -20dB coupler and 100 watts forward and zero return on the "through" line, you have a watt trying to come out the "forward" coupled port. If you don't terminate that perfectly, some of that watt goes back the other way, and spoils the directionality. SO...if you screwed up the trace width (perhaps because you didn't know the dielectric constant or thickness of the board material exactly, or your etching wasn't perfect), you can still adjust for very nearly perfect directivity by adjusting the load on the coupled line. This is also why it's good, especially at microwaves, to NOT try to use two detectors on opposite ends of the same coupled line, because the detectors are more difficult to have be really good resistances and not introduce

parasitic reactance. One way to make the load adjustable (assuming low enough coupled power that you can use SMT resistors) would be to provide pads for multiple termination resistors (two or three) and use a parallel combination that gives you just the right termination. This assumes you have a really good load (including any line and fittings) you can put on the through-line to insure near-zero reflections there! Calibration-quality loads for GHz frequencies are NOT cheap, and garden-variety coax is practically guaranteed to NOT be 50 ohms exactly. (45-55 is about the best reasonable expectation you should have for RG-58.)

...

Cheers,
Tom

1160. Re: 433MHz tracker

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 17:12:28 UTC
From: Claudia & Reed Park <reedpark@nbnet.nb.ca>
Message-ID: <402910FA.DC3258A8@nbnet.nb.ca>
Source record: 28697

Mike Burch wrote:

> This is probably useless info but I used to have a couple of wx
> radiosonds that transmitted on that freq.
>
> Mike K8MB
> >

The last one I saw launched was on 403 MHz. 433 would be in the ham band
between 420 to 450 MHz. Last launch was last year by the way.

7 3
Reed - VE1NU

Looking for information on Marconi SMR3 and
Northern Electric R8119A receivers of WW 2.

1161. Re: Help with dipole please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 17:14:25 UTC
From: mikea@mikea.ath.cx
Message-ID: <c0b3hh$s0l$1@puck.litech.org>
Source record: 28698

Larry Gagnon <lagagnon@fakeuniserve.com> wrote:

> Also, make sure that one end of your dipole is fastened to the tree
> with a weighted pulley system, so that when you get strong winds the
> dipole won't snap. I run the line through a small pulley attached to
> the tree and then hang a brick off the end of that line. Works very
> well in winds to give the dipole some give.

I find that that system works well, though I've had to use a cinder-
block instead of a brick. I suspect that the weight of the mass on
the line is dependent on circumstances too numerous to enumerate.

Here in Oklahoma, it also serves well as a combined wind speed gauge
and wind direction indicator.

--
Mike Andrews
mikea@mikea.ath.cx
Tired old sysadmin

1162. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 17:18:10 UTC
From: SWbeginner <SWbeginner@nowhere.com>
Message-ID: <102i4iit1hpcp56@corp.supernews.com>
Source record: 28699

"Hern&#65533;n S&#65533;nchez" <hernan.sanchez@iname.com> wrote in
news:c08ffi$13vd68$1@ID-169358.news.uni-berlin.de:

> Hi.
>
> I have just designed one that uses 2 chips, it is controlled by a PC
> (parallel port) and it has a software to display measurements.
>
> It works from 1Hz to 80Mhz, and can be improved.. if you want to give
> it a try, write me and I will send you the schematics and the software
> to play with it. I have one working in a XESS FPGA card, but it
> doesn't need all those hardware, just 2 of them.
>
> Regards,
>
> Hern&#65533;n S&#65533;nchez

Sure I like to see it. Which 2 chips does it use?

1163. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 17:20:35 UTC
From: SWbeginner <SWbeginner@nowhere.com>
Message-ID: <102i4n3jle6q642@corp.supernews.com>
Source record: 28700

This would be great for me but can it work with LED's. I haven't work with LCD displays before and don't know which one works.

> You might try Francesco Morgantini's (IK3OIL) PIC freq counter. It's
> based on a 16f84 and he will email you the hex code if you request it.
> It will run to approx 45 MHz as is and up to 1.5 GHz with a simple
> add on prescaler. He has divide functions built in the program (
> divide by 10/32/64) and he has also include IF offset if you want to
> use the counter as a freq readout. I've etched about 40 boards for
> local hams here and every one that has been built has worked without
> fail. Total cost has been in the neighborhood of $35.00 including the
> prescaler but excluding enclosure. If you want a copy of the circuit
> board layout with prescaler, just email me at ww2742 at dragonbbs.com.
> As for accuracy, I just adjusted one today for another local ham at
> it was within 200 Hz at 440 MHz using a recently calibrated IFR-1200
> for a source - that was close enough for me.
>
> Here's his website URL:
> http://digilander.libero.it/ik3oil/menu_eng.htm
>

1164. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 17:51:48 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c0b5qv$a4h$1@newshost.mot.com>
Source record: 28701

WARNING
LONG WINDED POST BY TWO OLD FOGEYS...

Did I spell that correctly?

"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040210013357.25815.00006532@mb-m07.aol.com...
> In article <c095jj$5b8$1@newshost.mot.com>, "Steve Nosko"
> <suteuve.nosukowicuz@moutouroula.com> writes:
>
> <More snipping of a good post to avoid undue long length...>
But I see we both are having trouble with the length, eh Len?

>
> > The accepted terminology is "Stripline" [snip] and "micro strip" ...

> That's quite probably true. ..some in the RF field get over-wrought
about terminology....
> Either type of physical construction makes a TEM (Transverse
> ElectroMagnetic) transmission line, just like coaxial cable....

Not getting religious about it, just adding some info here & trying to
clarify/simplify the explanatin. The OP asked if the "Directional coupler"
being talked about was like the Moni-Match. I was just trying to make that
case---then, as is common here, to add a lot of stuff I felt was helpful in
explaining what I thought the OP _may_ want to know...if he/she didn't give
up on the long post hi hi

> > I believe a 1/4 wave is not important here.
> For an octave bandwidth and even coupling it is.
> ...If the object to obtain a low phase error...

I didn't think the OP was asking about octave bandwidth or phase.
Perhaps I missed that.

> ANY conductor running close to and parallel to a transmission line
> center conductor will couple something into the coupling line.

That's the idea I was trying to point out. Like What I call the "snaked
wire" version.

Then we get into deeper detail and possibly symmantics. I'll keep my
symmantics comments to a minimum since I was simply trying to provide a
simplified comparison with the monimatch and a little info on how they work.

> >> Typical directional coupler coupling is 20 db down from the main
line.
> > This is a matter of choice by the manufacturer construction.

> I'll say that it is a value chosen by the users...manufacturers make
> all kinds of coupler coupling values

And I meant that when a given coupling is desired, it is the physical
construction which gets you there.

> ...With 20 db coupling ...,
> the main line is hardly affected whether the coupled line is terminated
> in proper resistive value or open or shorted.

Sure. Weather or not you pull 1% of the power out, few of us will care.

> >> name "directional."
> > This is a matter of primarily the mechanical design.
> Mechanical AND electrical...that also influences the directivity.

Again, I was merely pointing out that good construction is necessary for
good directivity. In contrast to the "snaked" coax version which can have
highly variable performance.

> >The "directivity"
> >refers to the amount of power that gets coupled to the secondary line
that
> >emerges out the "wrong" end--not the one we want.
>
> "Directivity" values are the sum of forward coupling and reverse
> coupling. If a coupler has 20 db coupling and the directivity is
> 45 db, the reverse coupling is down 25 db. ...

I presume you intend to mean"...from the foward _coupled_ level." ???
This is what I was trying to say.

> And don't forget conservation of energy. ...
> At 20 db coupling, a bad coupled line termination results in a 1%

Probably going too far for the OP's original need I guess I'm just as
guilty of adding mounds of information that he OP might not be interestred
in.

> > They both should have a nice (50 ohm) impedance ...
> Only if that is the main line characteristic impedance being used.
That's why I put the 50 in (), just as an example. I should have left
it out, but then I figured a question of "what is 'nice'" might have
surfaced.

> >...For the Moni-Match (snaked type) the secondary lines could be
> >some weird Zo and all is well if it is matched pretty well.
> But...the amount of coupling CAN vary considerably with frequency
> even though direction of coupling has an good relative agreement.

Sure. Again, I don't thing the OP is worried about flat freq response.
Many of us are familiar with the switched SWR meter with the pot to set the
FWD power to full scale and how that varies from band to band. We live with
it. At work, however, flat couplers are needed.

In fact, I was doing it last night. Was puzeled by the worse SWR on
teh lower bands of a high quality load. Could be... the SWR meter..
.

> I'll base that on measuring the "snaked-through-the-large-coax" kind
> (two different versions) intended for higher HF bands that had about
> 15 db difference between the two of them AND had quite a variation
> in coupling over frequency.

Do you remember if you looked at the Zo of the coupled lines? I seem to
recall that in the articles, the termination of the coupled line is
considered an emperical optimization. cut-try for the value of load giving
"best" operation. I also wondered about the load seen at the end(s) where
the detectors were. Did they get a good match there. That;s going to mess
with your directivity, no? I guess you can put a good load on the main line
and just tweek for best directivity... a.k.a. lowest reading when line
matched - in BOTH directions. Seems that this is all you need to worry
about, for a ham, that is.

> To make duplicates of an article's presentation requires a slavish
> devotion to copying EXACTLY as described.

Again, that's where my comment about mechanigal construction came from.

> >By the way, you can pump power into the secondary line and have some come
> >out the mainline as well. This is actually done for special uses.
> 3 db couplers, also known as "hybrid couplers." Very good for making
> wideband push-pull or push-push amplifiers out of modular amplifiers.

Won't go into detail, but high power linear amplifiers (60dB 2 tone IM)
in the 800MHz & 1800MHz range use 20 dB couplers for "Feed-Forward" IM
correction loops. Made an extensive "Backplane" with many stripline
couplers for them.

> ...High dielectric constant
> in substrate allows making them smaller and the material insures
> stability and good control in manufacture.
I have used Alumina. I also saw an article on microstrip couplers with
a complementary zig-zag pattern on the edges of the coupled lines adjacent
to each other...forget what the advantage was...I think increased coupling.

> ...Analog Devices log detector is
I saw that little bugger in QEX. Pretty cool!

73, Len

--
Steve N, K,9;d, c. i My email has no u's.

1165. Re: Recomendations for a VNA

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 18:23:29 UTC
From: k7itm@aol.com
Message-ID: <3200347.0402101023.4035c9e8@posting.google.com>
Source record: 28702

It might be possible to find a donation, too, and of course that wouldn't have to be new (but might be). My specific recommendations would be biased so I'm going to avoid giving them. However, I think you should make a wish-list of features, first, and perhaps your students could help you come up with those. It would even be a chance to engage them in a little research. I'd say you should have an instrument that's easy to learn and use, and that introduces the students to a good range of the capabilities of a good VNA. It would be good if it introduces them to the importance of calibration, and just _what_ should be calibrated on a VNA. It would be good if it can make s-parameter measurements. The concept of having the ability to make calibrated measurements at the end of a (possibly fairly long) transmission line is very useful. In actual use, I'd look for ways to illustrate that they (all of them) have limitations: there are tradeoffs in the design of a VNA, made with an eye to the intended application(s).

I know that HP published some nice application notes about VNA applications and calibration and accuracy limits. Likely Rohde & Schwarz and Anritsu and others have similar ap notes. If you have trouble finding HP ones, I may be able to help, but they're likely on the Agilent web (somewhere). Also look for articles in the HP Journal...again, I can help if you can't find anything.

Cheers,
Tom

Bob Liesenfeld <wb0poq@visi.com> wrote in message news:<40281B51.636401C0@visi.com>...
> Hi gang,
> I know there are several professional engineering types on the list,
> so I thought I'd post this here. I teach at a technical college and it
> is budget time. My boss asked me for a "wish list" and a vector network
> analyzer came to mind. What I had in mind would be something we could
> use to characterize small signal BJT and JFET circuits at say 3-30MHz.
> VHF and UHF would be nice, but not required. I'd be looking for
> something that could provide real and imaginary values, so as to be able
> to develop s parameters for various circuits.
> In order to qualify for consideration, the unit would have to be new,
> and non-kit. :(I know HP and others make things like this. Any
> recommendations?
> BTW, I know something like this is going to run in the kilo or tens of
> kilo buck range. Hey, it's their money and they asked. ;) ;) ;)
>
> Thanks for the input.
>

> Bob WB0POQ

1166. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 18:32:07 UTC
From: Ronald Tammepõld <ronn@hot.ee>
Message-ID: <40292372_1@news.estpak.ee>
Source record: 28703

Why does everyone think that PIC is the only microcontroller or the best
/easiest one? Since PIC needs higher programming voltages and not all PC
serial ports provide enough of it, most of the very easy PIC programmers
dont work. I would suggest you use atmel avr's. A nice programmer for it
can be found here : http://www.xs4all.nl/~sbolt/e-spider_prog.html
A freq counter using avr and logic counters is here :
http://www.myplace.nu/avr/countermeasures/
You can find more stuff when using google.

Cheers,
Ronald

SWbeginner wrote:
> I plan on building receivers and a simple frequency counter is needed.
> Say 4 to 6 digits, up to about 50 Mhz.
>
>
> I have seen approaches using:
> 74HCxxxx logic IC's could be made for $20 but lots of wiring
>
> PIC - not much experience except with 16f84.
> how to build programmer for lastest PIC's?
>
>
> Anyone know of a demo or free digital simulation software with CMOS 4XXX
> library? I have Microcap 7 demo but digital library is scarce.
>
> So much has progressed since the MC14553 3 digit counter chips. Do they
> even make them?
>
>
>
>
>>What frequency range , how accurate, and what do you think of as
>>inexpensive ?
>>I have not looked lately but there used to be some that would work up
>>to about 1.5 Ghz around $ 125 or so that would get you to within a
>>couple of hundred Hz at 150 mhz.
>>
>>
>>
>>
>
>

1167. Re: G5RV is the closest you can go

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 18:40:54 UTC
From: KA9CAR <ka9car@a_r_r_l_.net>
Message-ID: <c0b8jnnnj1@news1.tribune.com>
Source record: 28704

While a G5RV is an efficient antenna on 20, and acceptable on many bands, it
is terribly inneficient on other bands due to
the high mis match on the coax. It is easy to check out with Reg's dipole 3
program.

John

"Frank Dinger" <gm0cszx.xkn6wh@ntlworld.com> wrote in message
news:eXSVb.7533$q%6.1924941@newsfep2-win.server.ntli.net...
> > Assuming one wave , well on 160mtrs it would roughtly be over 400' long
> and
> > you
> > would need heavy cables for wires and two towers or phone poles.
> > There is no way to set up a diapole with trees, it will snap on a windy
> day.
> ========================
> A wire antenna between 2 trees can be very reliable provided there are no
> branches in the immediate vicinity of the wire and that connection to 1
tree
> is via a pulley with freely suspended counterweight ,such that when it is
> windy and parts of trees move the wire remains straight. A really simple
> arrangement.
>
> Frank GM0CSZ / KN6WH
>
>

1168. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 19:43:02 UTC
From: Hern&#65533;n S&#65533;nchez <hernan.sanchez@iname.com>
Message-ID: <c0bc88$14susp$1@ID-169358.news.uni-berlin.de>
Source record: 28705

Hi.

It uses an FPGA (or CPLD) and a clock (DS1075) for time reference. The parts that i'm using are:

Xilinx XC4010XL-PC84

Dallas DS1075-100

The FPGA has everything, it has 1 sec reference using the DS1075 (working at 100Khz), 5 divisors to select range of measurement, display control and parallel port control.

There are two ways to improve it, one is that I can use the internal FPGA oscillator, but it has a poor precision, and the other it's to use a different oscillator, maybe a crystal oscillator.. it can be of any frequency because that is programmable to the FPGA... that way it would be 1 IC frequency meter.

I will put it the VHDL source in the web with a hand-made schematic, and the PC software. The VHDL can be synthetized with Xilinx Webpack (free download from www.xilinx.com) and to program the FPGA you can use Xilinx Parallel Cable III(schematics for it searching on www.google.com). You can use any FPGA that has enough room to all the circuits, but I think the software can suggest you wich one to use.

All of that can be found at

http://www.geocities.com/hernan_sanchez/

I will put the files there this night (3:00 GMT).

Regards,

Hern&#65533;n S&#65533;nchez

"SWbeginner" <SWbeginner@nowhere.com> escribi&#65533; en el mensaje news:102i4iit1hpcp56@corp.supernews.com...
> "Hern&#65533;n S&#65533;nchez" <hernan.sanchez@iname.com> wrote in
> news:c08ffi$13vd68$1@ID-169358.news.uni-berlin.de:
>
> > Hi.
> >
> > I have just designed one that uses 2 chips, it is controlled by a PC
> > (parallel port) and it has a software to display measurements.
> >
> > It works from 1Hz to 80Mhz, and can be improved.. if you want to give
> > it a try, write me and I will send you the schematics and the software

> > to play with it. I have one working in a XESS FPGA card, but it
> > doesn't need all those hardware, just 2 of them.
> >
> > Regards,
> >
> > Hern&#65533;n S&#65533;nchez
> Sure I like to see it. Which 2 chips does it use?

1169. Re: Help with dipole please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 20:55:48 UTC
From: mcalhoun@ksu.edu
Message-ID: <c0bggk$q3c@unix1.cc.ksu.edu>
Source record: 28706

>>Putting up a 10 through 160 or 10 through 80 meters dipole.... Are there
>>any good links or sights to learn proper making and installation?

>Also, make sure that one end of your dipole is fastened to the tree
>with a weighted pulley system, so that when you get strong winds the
>dipole won't snap. I run the line through a small pulley attached to
>the tree and then hang a brick off the end of that line....

DO be sure to fasten the weight with another rope so that if (when?)
the antenna does break, the brick won't fall on someone's head!

If one or both of the trees is liable to sway a LOT, you can add another
pully to the weight and run the rope back UP the tree to where the
first antenna pulley is; that way, one weight (which probably needs to
be heavier) can handle twich as much sway.

--Myron.
--
Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge
PhD EE (retired). "Barbershop" tenor. CDL(PTXS). W0PBV. (785) 539-4448
NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle, Pistol)

1170. test post, ignore

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 22:43:28 UTC
From: Bob P <nospam@nospam.end>
Message-ID: <k8dWb.1632$t16.1319276@newssvr28.news.prodigy.com>
Source record: 28707

Bob

1171. Re: Carmatic card questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 22:58:14 UTC
From: chris@airpump.com
Message-ID: <9123781c.0402101458.43dc0421@posting.google.com>
Source record: 28708
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:<102f8luqbuc6b0@corp.supernews.com>...
> After 10 years I can't recall if my Hickok Cardmatic LS-15874-L2 or
> AN/USM-118A or B cards were ever returned or what. My remainder set is not
> compplete and I wonder if anyone has a set or partial set for sale. I'd
> also like to know if anyone has figured out an economical way to duplicate
> them at reasonable cost? Did Hickok make them or a contractor, anyone from
> Ceveland know?
> On another tangent I wonder if anyone knows of any solenoids that are
> small enough to install on 0.25 inch spacing. With 185 of these, using
> extended matrix switch pins one could control the switching with a PC. I
> wonder if anyone recalls seeing some device that uses small solenoids that
> are small enough and cheap enough to homebrew a matrix. I know that this
> plus more has already been accomplished with relays but at $1000.00 the mod
> is unjustifiable for me.
> Another alternative would be to have a "crossbar" of 11 by 17 rods or
> slats with each one driven by a solenoid, requiring the a row and column
> solenoid to be driven to select a pin. Having a solenoid at each end of the
> rod might balance the operation. This would require 28 solenoids or double
> that if one is needed at each end. These could be spaced on 1/2 inch
> centers by staggering.
> If anyone has a better idea please me know but the best would be to find
> an orphaned set of cards.
>
> 73
> hank wd5jfr

There is already an excellent computerized version of the Cardmatic
available by Signal Systems--Phil Frakes. This machine apparently
works very well and is in use by SND Tubes and AES. So--no need to
reinvent all of this--plus the software is done for you. You can have
your tester converted to this system by Phil and then no cards are
required. I believe he has something on the web about the machine.
The conversion is not cheap, but you are talking about a major amount
of wiring and relays. Plus--a full set of Cardmatic cards is worth
over $500.

I do have a complete card set, and have made a few cards for
people--one hole at a time. This just is not practical. My hand
gives out after two cards. Wendell Hall has a friend with an original
Hickok fixture for punching the cards. I'd like to get that fixture,
but Wendell says the guy won't part with it.

Chris

1172. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-10 23:36:05 UTC
From: Ralf Ballis - DL2MRB <r_ballis@hotmail.com>
Message-ID: <c0bq2poqc07$1@news.t-online.com>
Source record: 28709

Take a look at:

http://www.ldgelectronics.com

It's a kit.

Regards

Ralf

--
Vy 73 es 55 de Ralf, DL2MRB
E-Mail: dl2mrb@darc.de

1173. More about mounting VFO coils?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 00:05:11 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <t4si20tm7bsh2e9gs55j8nvb5n0bhrrii4@4ax.com>
Source record: 28710

A rule of thumb says that the screen around an oscillator coils could be 3 times the coil diameter, and Radiotron Designer's handbook, 3rd edition, 1941 says that the screen should go at least one coil radius above the coil. But how far from the chassis should the coil winding start?

73
Jan-Martin
LA8AK, http://home.online.no/~la8ak/c.htm

1174. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 00:06:39 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c0brprdin1@newshost.mot.com>
Source record: 28711

"Tom Bruhns" <k7itm@aol.com> wrote in message
news:3200347.0402100855.1ccaaf95@posting.google.com...
> "Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote in message
news:<c095jj$5b8$1@newshost.mot.com>...
>
> > Side bar: I have one of the first directional power meters, the Micro
> > match. It uses a resistor, yes, resistor, for the current sense ...
>
> Not really all that uncommon. A Wheatstone bridge works fine for
> monitoring SWR...transformer-coupled versions...network analyzers...

[not trying to be or sound condecending (:-) I know all that. I was just
trying to help the OP understand this term "directional coupler" from the
ham perspective. In the context of today's *ham* SWR reading devices, having
a current sense resistor is unusual. Besides I am talking about a 1,000
watt full scale directional watt meter. It reads power directly in several
ranges. Supposedly what the modern ones do. So I was thinkin' a resistor
to sense current should be a bit of a surprise. In the 40's they didn't
have the transformers.
I also have a 5-1000 MHz SWR bridge, obviously low power as well. Spec'ed @
40 dB. Very lucky find. ain't cheap.

> you are verrrry careful about the construction.
Yea, Yea. That's one of the points I was making.

> > > You might think of microstrip or stripline as "hammered flat coax."

I'm ok with this analogy, I just had to add my 2 cents.

> (And though stripline is true TEM, microstrip is quasi-TEM
I didn't think the OP cared about this. Also stripline is model-able,
micro strip (was only approximated) by Wheeler & Sobol, when I was designing
it. However, I think the OP wouldn't care about this either.

> > I believe a 1/4 wave is not important here.
> Right...but beware of NULLS in the response at integer multiples of
> 1/2 wavelength,

I was thinking less than 1/4. I won't open it to see how long the
coupled lines are, but my Narda is about a foot long & goes down to .. gee,
I don't remember. Gotta go look tonight. I think 500M

They are pretty usefull things if you can get your hands on a good
one... and have the rest of the equipment to use it. I wasn't trying to
give the OP a tutorial on precision directional coupler design, just some
analogies to hang his hat on. Is the OP reading the rest this??

> > > Typical directional coupler coupling is 20 db down from the main
line.
> In fact, -20dB with 100 watts input gives you a WATT at the "FWD"
> output,

That's why I didn't think it appropriate to say any particular value was
"standard". Get what you want. The physical construction determines the
coupling factor was where I was going as a contrast to the "snake-ed" ham
kind which has a variable construction and therefore coupling.

> > > While not perfect, directional
> > > coupling differences of about 20 db are good enough to warrant the
> > > name "directional."
> > This is a matter of primarily the mechanical design.
>
> AND the loading on the "other" end of the coupled line. Steve touched
> on this,

Yea. I implied a lot with the "nice" comment (and invited much comment)
I see.

Enjoy your tools & Thanks guys, 73

--
Steve N, K,9;d, c. i My email has no u's.>

1175. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 00:42:33 UTC
From: averyfineman@aol.com
Message-ID: <20040210194233.05539.00004250@mb-m16.aol.com>
Source record: 28714

In article <102i4n3jle6q642@corp.supernews.com>, SWbeginner
<SWbeginner@nowhere.com> writes:

>This would be great for me but can it work with LED's. I haven't work with
>LCD displays before and don't know which one works.

There are several LCD display units available commercially with the
LCD (typically 2 x 16 character rows), drivers and temporary memory,
and optional backlights. They are driven by ASCII coded character
digital byte-parallel input assemblies. PIC and Atmel based counters
can output ASCII according to count plus including controllable legends
for whatever purpose, all under the microcontroller internal program.

LEDs are fine for bright displays, good for viewing out of the corner of
the eye to note changes when working on something. Microcontrollers
could be reprogrammed to output sequential 7-bar segment signals for
external temporary storage, such as a latch-decoder-driver IC for one
decade's LED. LEDs are also relative power hogs from the local DC
supply compared to the entire LCD assembly (8 digits will take around
0.6 A maximum at 5 VDC to light 8 LEDs). LCD power drain is in the
microwatt range, the drivers of an assembly taking most of the DC
power. Low power demand is the major reason for using LCDs in
small-battery watches and radio clocks.

LED readout is very legacy in digital circuitry. Many-digit LCD
assemblies aren't so common and appear strange because they
haven't been as widely used for as long a time.

>> You might try Francesco Morgantini's (IK3OIL) PIC freq counter. It's
>> based on a 16f84 and he will email you the hex code if you request it.
>> It will run to approx 45 MHz as is and up to 1.5 GHz with a simple
>> add on prescaler. He has divide functions built in the program (
>> divide by 10/32/64) and he has also include IF offset if you want to
>> use the counter as a freq readout. I've etched about 40 boards for
>> local hams here and every one that has been built has worked without
>> fail. Total cost has been in the neighborhood of $35.00 including the
>> prescaler but excluding enclosure. If you want a copy of the circuit
>> board layout with prescaler, just email me at ww2742 at dragonbbs.com.
>> As for accuracy, I just adjusted one today for another local ham at
>> it was within 200 Hz at 440 MHz using a recently calibrated IFR-1200
>> for a source - that was close enough for me.
>>
>> Here's his website URL:
>> http://digilander.libero.it/ik3oil/menu_eng.htm

I will suggest perusing the www.aade.com website to see the counters available there. Some are available in kit form and they are simple and elegant, include an LCD assembly for readout. All you need do is hook up a DC power source and check the timebase against WWV.

Otherwise there are a surprisingly large number of websites concerning PIC and Atmel based microcontroller counters along with associated microcontroller program source listings. Any search will turn up dozens of hits. Modifying the existing programs might take up more time than you would imagine unless you have lots of Assembler coding experience.

Len Anderson
retired (from regular hours) electronic engineer person

1176. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 00:42:35 UTC
From: averyfineman@aol.com
Message-ID: <20040210194235.05539.00004251@mb-m16.aol.com>
Source record: 28713

In article <c0b5qv$a4h$1@newshost.mot.com>, "Steve Nosko"
<suteuve.nosukowicuz@moutouroula.com> writes:

>WARNING
> LONG WINDED POST BY TWO OLD FOGEYS...
>
>Did I spell that correctly?

Heh. :-)

>Then we get into deeper detail and possibly symmantics. I'll keep my
>symmantics comments to a minimum since I was simply trying to provide a
>simplified comparison with the monimatch and a little info on how they work.

Fine. :-)

I just added some things about directional couplers in general. These
postings are all very public and don't necessarily pertain to one
individual. Sometimes general information is an aid to a reader who
does not post. There's lots more readers than posters in most news-
groups.

Here's some links to couplers and power meters which are current
(checked today to see if they are still there):

http://www.ee.bilkent.edu.tr/~microwave/magnetic.htm

This site has HEAVY theory on - Rectangular waveguide, microstrip
antenna design and analysis, microwave filter design, Lange coupler
design, branch-line coupler design and analysis, directional coupler
design and analysis, 180 degree hybrid coupler design and analysis,
microwave power divider design and analysis. The "design and
analysis" includes an on-line calculator-applet to plug in numbers and
it grunges through the math for the user. It is practically a FREE book
on the basic UHF-microwave passive component region and should
save anyone's wallet to the tune of at least $120 (the old "Matthaei-
Young-Jones" hardcover is more than that now, even after 30+ years).

From the Microwaves & RF magazine archives, there is the February
2001 tutorial "Understanding The Basics Of Microstrip Directional
Couplers" by Leo Maloratsky, pp 79 to 94, a very concise article on a
large subject. Maloratsky worked for Rockwell Collins in Melbourne,
Florida at that time.

For direct SWR measurement using a Bruene detector and using meters
for readout of both forward and reverse power, the QEX article by Paul
Kiciak, N2PK, gives dimensional-construction information on the bridge

for HF and uses AD8307s as logarithmic detectors for both forward and reverse plus op-amp couplers to the indicating meters. I have a PDF that lacks the QEX identifying issue and page that was obtained from another in July 2001, can't supply the QEX issue date or pages.

The Bruene bridge was first used in military T-195 transmitters that became operational with USMC and US Army in 1955...part of a very easy to use HF vehicular Tx/Rx using tubes and long vehicle whips. Collins did the design under contract. A version of the Bruene bridge is still used today in the US military in the AN/PRC-104 backpack 20 W HF radio which has an auto-tuner for the whip. Hughes Aircraft designed, became operational in 1986.

I emphasize measurement methods because a finished coupler or bridge or whatever needs to have something to measure it at lower powers than available on Bird Wattmeters or similar. One of the nicest applications of the Analog Devices AD8307 as a Wattmeter with an 80 db dynamic range is on Thomas Schirrer's website:

http://www.webx.dk/oz2cpu/radios/milliwatt.htm

That one uses only two ICs, the AD8307 and a Microchip PIC16F876. Accuracy of RF power measurement is all up to the AD8307 which can work up past 500 MHz, has direct connections of RF input to the AD8307. The PIC does conversion of AD8307 DC output volts to either Watts or dbm and also controls the LCD panel unit (2 x 16 character integral LCD panel and driver). No other active devices are needed except for the DC power supply. With appropriate programming, serveral different PIC microcontrollers can be used. Several others have copied the same circuit with variations on the case on display legend, as indicated on the website. Simple and elegant. Calibrate once and such will remain, error dependent solely on the AD8307.

>> ...Analog Devices log detector is
> I saw that little bugger in QEX. Pretty cool!

Lots of information on the Analog Devices website for datasheets and application notes on their full line of logarithmic detectors. Why anyone still wants to depend on germanium diode detectors with very limited dynamic range and non-linear detection is beyond me. :-)

Len Anderson
retired (from regular hours) electronic engineer person

1177. Re: homebrewing on perfboard, how to connect components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 00:42:36 UTC
From: averyfineman@aol.com
Message-ID: <20040210194236.05539.00004252@mb-m16.aol.com>
Source record: 28712

In article <dYS31FCfBJKAFAoU@ifwtech.co.uk>, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> writes:

>Avery Fineman wrote:
>>In article <c09ki1$jh4@unix2.cc.ksu.edu>, mcalhoun@ksu.edu writes:
>>
>>>> I got spoiled with #24 and #26 Teflon insulated solid wire, strips
>>>> easily and never abrades the insultation.
>>>
>>>And you can just jam the point of a soldering pencil down
>>>into a "rats nest" and not melt a bit of insulation!
>>
>> Yes! But, I didn't want to rub that in to homebrewers. :-)
>>
>> Sigh, I'm way overdue for searching electronic dumps for teflon covered
>> wire...old nylon-jacketed PVC is still old and still melts.
>>
>At a hamfest on Sunday, a trader was selling teflon insulated
>silver-plated stranded hookup wire in two sizes, as "aerial wire". I
>bought 50 metres, but by no means all of it is going up in the air.
>
>Len, you said it "strips easily"... well, maybe I haven't found the
>right kind of wire strippers yet. What kind do you use?

Up until about year 2000 I had a wonderful multi-gauge stripper
made in my home town of Rockford, Illiniois, about 1950 (!).
The "recoil spring" (to return the two-handled beastie to open
position) broke and a replacement was impossible. The design
had been sold to another company (perhaps General Cement)
in the 1950s and that company no longer produced it.

For stripping in general I use small diagonal wire cutters (kept
sharp) and, by feel, go part-way through about three places on
the jacket, then gently tear off the jacket. Very no-frills stripping
(of wire, that is). Practice made perfect a long time ago.

The toolbox also has an ultra-simple el cheapo stripper stamped
out of sheet stock, looking like cheap cutters with a single V-groove
on each head, opposed. Very easy to keep sharp but the straight-
side cutter edges tend to nick the wire, especially on stranded
variety. I use that only as a last resort.

For chassis-PCB wiring, I prefer to use solid wire and cut Teflon
sleeving to suit for insulation. No flexibility is needed there and the
Teflon sleeving, although costing more than PVC, is reasonable in
price in bulk (depending on supplier/distributor). The sleeving IS

reuseable (and wires used for short runs) after a project is scrapped
and/or revised.

>> [I'm secretly glad no one remarked on the extra T in 'insulation,' that
>> would be instigation of insulting the insulation installation... :-)]
>>
>Would we ever do such a thing?

Heh heh heh heh heh heh heh heh heh... :-)

Len Anderson
retired (from regular hours) electronic engineer person

1178. Need more details for mounting high-Q oscillator coils?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 00:46:54 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <amui20ppn5v6ffdmb1mbrc7jbdos4p05o0@4ax.com>
Source record: 28715
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

A rule of thumb says that the screen around an oscillator coils could be 3 times the coil diameter, and Radiotron Designer's handbook, 3rd edition, 1941 says that the screen should go at least one coil radius above the coil. But how far from the chassis should the coil winding start?

73
Jan-Martin
LA8AK, http://home.online.no/~la8ak/c.htm

1179. Re: Need more details for mounting high-Q oscillator coils?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 00:51:52 UTC
From: Jim Thompson <thegreatone@example.com>
Message-ID: <23vi20134qekmcgmj01aereni5onvf3prl@4ax.com>
Source record: 28716
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Wed, 11 Feb 2004 01:46:54 +0100, "Jan-Martin Noeding, LA8AK"
<la8ak@online.no> wrote:

>A rule of thumb says that the screen around an oscillator coils could
>be 3 times the coil diameter, and Radiotron Designer's handbook, 3rd
>edition, 1941 says that the screen should go at least one coil radius
>above the coil. But how far from the chassis should the coil winding
>start?
>
>73
>Jan-Martin
>LA8AK, http://home.online.no/~la8ak/c.htm

Wouldn't you presume one coil radius above the chassis?

...Jim Thompson
--
James E.Thompson, P.E.	mens
Analog Innovations, Inc.	et
Analog/Mixed-Signal ASIC's and Discrete Systems	manus
Phoenix, Arizona Voice:(480)460-2350	
E-mail Address at Website Fax:(480)460-2142	Brass Rat
http://www.analog-innovations.com	1962

I love to cook with wine. Sometimes I even put it in the food.

1180. Re: Carmatic card questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 01:04:21 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <102ivsvntevosc7@corp.supernews.com>
Source record: 28717
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

I'm aware of the computerized unit at
http://www.tubesontheweb.com/index.htm, but it's out of my range. Is there
any way to find out what the fixture looks like, better yet a pix?. Now I'm
wondering if an old IBM keypunch card maker could be the base. I can't
recall the model number., but there was no shortage.of them 40 years ago but
I'll bet you could find one cheap if you looked hard enough.
73
hank
"Chris Haedt" <chris@airpump.com> wrote in message
news:9123781c.0402101458.43dc0421@posting.google.com...
> "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:<102f8luqbuc6b0@corp.supernews.com>...
> > After 10 years I can't recall if my Hickok Cardmatic LS-15874-L2 or
> > AN/USM-118A or B cards were ever returned or what. My remainder set is
not
> > compplete and I wonder if anyone has a set or partial set for sale. I'd
> > also like to know if anyone has figured out an economical way to
duplicate
> > them at reasonable cost? Did Hickok make them or a contractor, anyone
from
> > Ceveland know?
> > On another tangent I wonder if anyone knows of any solenoids that
are
> > small enough to install on 0.25 inch spacing. With 185 of these, using
> > extended matrix switch pins one could control the switching with a PC.
I
> > wonder if anyone recalls seeing some device that uses small solenoids
that
> > are small enough and cheap enough to homebrew a matrix. I know that
this
> > plus more has already been accomplished with relays but at $1000.00 the
mod
> > is unjustifiable for me.
> > Another alternative would be to have a "crossbar" of 11 by 17 rods
or
> > slats with each one driven by a solenoid, requiring the a row and
column
> > solenoid to be driven to select a pin. Having a solenoid at each end of
the
> > rod might balance the operation. This would require 28 solenoids or
double
> > that if one is needed at each end. These could be spaced on 1/2 inch
> > centers by staggering.

> > If anyone has a better idea please me know but the best would be to find
> > an orphaned set of cards.
> >
> > 73
> > hank wd5jfr
>
> There is already an excellent computerized version of the Cardmatic
> available by Signal Systems--Phil Frakes. This machine apparently
> works very well and is in use by SND Tubes and AES. So--no need to
> reinvent all of this--plus the software is done for you. You can have
> your tester converted to this system by Phil and then no cards are
> required. I believe he has something on the web about the machine.
> The conversion is not cheap, but you are talking about a major amount
> of wiring and relays. Plus--a full set of Cardmatic cards is worth
> over $500.
>
> I do have a complete card set, and have made a few cards for
> people--one hole at a time. This just is not practical. My hand
> gives out after two cards. Wendell Hall has a friend with an original
> Hickok fixture for punching the cards. I'd like to get that fixture,
> but Wendell says the guy won't part with it.
>
> Chris

1181. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 01:18:48 UTC
From: SWbeginner <SWbeginner@nowhere.com>
Message-ID: <102j0nof8b17bbc@corp.supernews.com>
Source record: 28718

averyfineman@aol.com (Avery Fineman) wrote in

>
> There are several LCD display units available commercially with the
> LCD (typically 2 x 16 character rows), drivers and temporary
> memory, and optional backlights. They are driven by ASCII coded
> character digital byte-parallel input assemblies. PIC and Atmel
> based counters can output ASCII according to count plus including
> controllable legends for whatever purpose, all under the
> microcontroller internal program.
I agree with all your points against LED's except they are very simple to use and that's what I need for now.

The displays at the aade.com site are very elegant.
If you or someone can recommend which LCD display to use and a site wich a good tutorial then that would be fantastic.

The whole point of homebrewing for me is to learn how these things work and be able to design and make changes. Otherwise I can buy all the gear on Ebay but not learn anything.

1182. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 05:45:36 UTC
From: jimp@specsol-spam-sux.com
Message-ID: <c0cfi0qdm1@mail.specsol.com>
Source record: 28719

Bill Turner <noway@nohow.com> wrote:
> Does anyone have any suggestions for painting aluminum in a way that
> will be tougher and longer-lasting than you get with the usual spray
> can?

> I have a small compressed air paint sprayer, and I'm wondering if
> automotive paint might be good, or perhaps something else? Mainly
> interested in black or shades of gray. What is the best primer for
> aluminum?

> --
> Bill, W6WRT

Imeron; used on airplanes and a bit pricey.

--
Jim Pennino

Remove -spam-sux to reply.

1183. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 05:53:42 UTC
From: k9sqg@aol.com
Message-ID: <20040211005342.28349.00001706@mb-m15.aol.com>
Source record: 28720

Bill,

Best primer is zinc-chromate. There are some other tips and tricks but without a valid email address I can't go into detail.

73s,

Evan

1184. Re: More about mounting VFO coils?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 05:59:20 UTC
From: averyfineman@aol.com
Message-ID: <20040211005920.25517.00004248@mb-m15.aol.com>
Source record: 28721

In article <t4si20tm7bsh2e9gs55j8nvb5n0bhrrii4@4ax.com>, "Jan-Martin Noeding, LA8AK" <la8ak@online.no> writes:

>A rule of thumb says that the screen around an oscillator coils could
>be 3 times the coil diameter, and Radiotron Designer's handbook, 3rd
>edition, 1941 says that the screen should go at least one coil radius
>above the coil. But how far from the chassis should the coil winding
>start?

About the same distance. :-) The old Radiotron book (I have a CD for one of the editions as a keepsake) has charts showing the inductance reduction and Q reduction for various relative diameters. The closer the enclosure, the more reduction of both values. That sould be accounted for in any resonant applications, especially those for tracking as in superhet or TRF front-ends.

The conducting enclosure or shield contains the magnetic field on the coil and, ideally, should have the same clearange from both top and bottom of the winding. It will still work with an assymetric clearance but L and Q are spoiled by the closer spacing.

Toroidal cores are much less affected by conducting enclosures due to the magnetic field contained largely IN the torus' core material.

Len Anderson
retired (from regular hours) electronic engineer person

1185. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 05:59:22 UTC
From: averyfineman@aol.com
Message-ID: <20040211005922.25517.00004249@mb-m15.aol.com>
Source record: 28722

In article <102j0nof8b17bbc@corp.supernews.com>, SWbeginner
<SWbeginner@nowhere.com> writes:

>averyfineman@aol.com (Avery Fineman) wrote in
>
>> There are several LCD display units available commercially with the
>> LCD (typically 2 x 16 character rows), drivers and temporary
>> memory, and optional backlights. They are driven by ASCII coded
>> character digital byte-parallel input assemblies. PIC and Atmel
>> based counters can output ASCII according to count plus including
>> controllable legends for whatever purpose, all under the
>> microcontroller internal program.

>I agree with all your points against LED's except they are very simple to
>use and that's what I need for now.

Then you can go with LS TTL and use a pair of ICs per decade/digit.
A 74LS192 as a decade's actual counter with a CD4511 as a latch-
decoder-driver for the LED...or a CD40110B as a counter-latch-
decoder-driver at a slower input rate (with prescaler as needed to
reach the desired max. input rate). 74LS90s or 74LS290s as decade
dividers for the timebase...plus various NAND gates to select the
count gate times. All of those types figure in to drive LED 7-segment
numeric displays.

>The displays at the aade.com site are very elegant.
>If you or someone can recommend which LCD display to use and a site wich a
>good tutorial then that would be fantastic.

There's over 50 different models and sizes of LCD display assemblies
available, from 1 line of 12 characters to 4 lines of 16 characters. To
use those assemblies, you need to know how to get the sequential
ASCII into them to show on the screen. That isn't simple for a tutorial
or anything else unless you know serial digital transmission basics.
AADE apparently gets their LCD assemblies in bulk to package with
their little frequency counters, have the necessary coupling from the
16F71 program coding.

The bare LCD unit needs special driver ICs since those are generally
of a sort of 3-state waveform needed to clear/energize (make black)
a selected place. Some are only 2-state. Varies depending on the
type and manufacturer. That's why I recommend getting an assembly
of the display and its driver board. A search of the Internet will turn
up several distributors selling to individuals. If the end applicaion is a
counter using a PIC or Atmel microcontroller, then the project website
will have the part number of the display assembly they used.

>The whole point of homebrewing for me is to learn how these things work and
>be able to design and make changes. Otherwise I can buy all the gear on
>Ebay but not learn anything.

Understood. I'm still putting things together and still learning, still having
fun with all these new things even though I've been in the electronics and
radio racket for quite a while (over 50 years).

You can get the basics of frequency and period counting from the Agilent
website from one of their application notes. There's several other sites
by individuals explaining basic counting. To make an IC counter using
two ICs per decade, a latch-decoder-driver is needed to hold the binary-
coded-decimal 4-bit state out of the counter after a count and then
decode that BCD to light the appropriate LED segment of a 7-bar segment
single digit display. The whole thing needs a timebase section which
is a crystal oscillator (usally at 10 MHz to beat against WWV for
calibration) followed by dividers (usually decade counter ICs running
continuously. The selectable timebase signals are used to gate the
counter's input for frequency indication with the gate opening time in
increments of 10 such as 1, 10, 100 mS, 1 or 10 Seconds for minimum
count digit display of 1 KHz, 100, 10, 1, and 0.1 Hz respectively. To
mesaure period, just reverse the count input and timebase gate control
so that you count the timebase frequency with the gate supplied by the
input signal.

To connect this to the outside world, you need a wideband amplifier to
help raise the level of the input signal, then a shaper such as a Schmitt
trigger gate or inverter to make the signal have nice, sharp leading edges
to apply to the count gate. With all that digital stuff there needs be
attention paid to bypassing the supply rails, but that is easier since all
the components can be running at the same + supply voltage; +5 VDC
if "74" chips, +9 or +12 or +15 if CMOS equivalent function types to TTL.

There are still lots of digital ICs available for this kind of project and
the
datasheets are all downloadable from the Internet. Putting them all
together is not an easy task but it is repetitious to the degree of the
number of digits to be displayed. The number of digits to be shown will
put a rather surprising large current demand on the supply for a maximum
digit indication, "8" in case of a 7-bar LED, all 7 segments on. 140 mA
per decade at 20 mA per segment. With 6 digits that is 840 mA max.
LED supply drain can go from 240 mA min. for all "1" to 840 mA max. for
"8" with 6 digits...can be fair jump in load change on the internal supply.

In going for a discrete IC per decade style, the overall task is a strenuous
one. To begin, it is much easier to get a KIT if possible, or one of the
little AADE counters (which have some user interconnects necessary).
Once you have it built or installed, you have a "learning" device and can
go back into its guts to find out how it works. For PIC or Atmel based
counters, most "learning" takes place in following the program source
code; the hardware itself is rather simple, just a handful of parts.

A frequency (and period if desired) is the most precision instrument you can successfully design and build in the home workshop. Only one circuit, the crystal oscillator, sets the accuracy, typically better than 10 parts per million beat against WWV. The rest is enabled by digital ICs off-the-shelf at relatively low cost (less than $1 each, average). It does embrace a number of electronics technologies not necessarily those of old radio. "Simple" it isn't and that includes the micro-controller types; those have most digital hardware functions implemented in software. Experience in designing, building, and working with them will come in handy on such future projects as PLL or DDS frequency control, DSP, and many other subsystems of modern radios. If you bother to study them in detail you WILL learn a lot of new things, but there is considerable "home work" in that self-assignment. Good luck and enjoy the course! :-)

Len Anderson
retired (from regular hours) electronic engineer person

1186. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 07:14:13 UTC
From: Roger Conroy <rogerconroy@nospam.hotmail.com>
Message-ID: <c0ckor$o6m$1@ctb-nnrp2.saix.net>
Source record: 28723

"Bill Turner" <noway@nohow.com> wrote in message
news:llej20dksr7lf0ganljp0j6peupug9krf6@4ax.com...
> Does anyone have any suggestions for painting aluminum in a way that
> will be tougher and longer-lasting than you get with the usual spray
> can?
>
> I have a small compressed air paint sprayer, and I'm wondering if
> automotive paint might be good, or perhaps something else? Mainly
> interested in black or shades of gray. What is the best primer for
> aluminum?
>
> --
> Bill, W6WRT
>
Take yourself to your nearest general aviation airport (dont bother with a
huge airline terminal airport - its way too damn difficult getting in) -
find a maintenence company, they paint alumnium regularly.

1187. Re: Carmatic card questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 07:16:06 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <4029D6A9.32238FAD@earthlink.net>
Source record: 28724
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

Henry Kolesnik wrote:
>
> I'm aware of the computerized unit at
> http://www.tubesontheweb.com/index.htm, but it's out of my range. Is there
> any way to find out what the fixture looks like, better yet a pix?. Now I'm
> wondering if an old IBM keypunch card maker could be the base. I can't
> recall the model number., but there was no shortage.of them 40 years ago but
> I'll bet you could find one cheap if you looked hard enough.
> 73
> hank

The old IBM key to card punches that I have seen (and scrapped) were
the model 19 and the model 29. They were small steel desks full of
mechanical and electrical parts that no one wanted, so they were
scrapped for the steel frames and made into small work benches.

--
We now return you to our normally scheduled programming.

Michael A. Terrell
Central Florida

1188. Re: Need more details for mounting high-Q oscillator coils?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 09:38:25 UTC
From: John Woodgate <jmw@jmwa.demon.contraspam.yuk>
Message-ID: <Ed7EBJCRgfKAFwaP@jmwa.demon.co.uk>
Source record: 28725
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

I read in sci.electronics.design that Jan-Martin Noeding, LA8AK
<la8ak@online.no> wrote (in <amui20ppn5v6ffdmb1mbrc7jbdos4p05o0@4ax.com>
) about 'Need more details for mounting high-Q oscillator coils?', on
Wed, 11 Feb 2004:

>A rule of thumb says that the screen around an oscillator coils could be
>3 times the coil diameter, and Radiotron Designer's handbook, 3rd
>edition, 1941 says that the screen should go at least one coil radius
>above the coil. But how far from the chassis should the coil winding
>start?

The 'at least one radius' thing applies at both ends. The magnetic field
of a solenoid is axially symmetrical.
--
Regards, John Woodgate, OOO - Own Opinions Only.
The good news is that nothing is compulsory.
The bad news is that everything is prohibited.
http://www.jmwa.demon.co.uk Also see http://www.isce.org.uk

1189. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 11:22:59 UTC
From: donutbandit <none@none.com>
Message-ID: <c0d3aj$79c$5@news.snowcrest.net>
Source record: 28726

jimp@specsol-spam-sux.com wrote in news:c0cfi0qdm1@mail.specsol.com:

> Imeron; used on airplanes and a bit pricey.
>

Imron is very special and pricy stuff. It requires a hardener and can frost up your lungs if you don't use the proper breathing apparatus. In other words, you die. It costs over $100 a gallon.

I simply cannot believe that anyone would recommend this paint in this newsgroup for painting a bit of metal. Do you use rocket fuel in your car as well?

You paint aluminum like any other metal.

It seems that the Internet has invented something that could never have survived previously - the instant specialist. This person repeats any and all gossip, rumors and inuendo as if it's fact, with no experience whatsoever.

1190. Re: Carmatic card questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 12:05:45 UTC
From: chris@airpump.com
Message-ID: <9123781c.0402110405.63e5359c@posting.google.com>
Source record: 28727
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:<102ivsvntevosc7@corp.supernews.com>...
> I'm aware of the computerized unit at
> http://www.tubesontheweb.com/index.htm, but it's out of my range. Is there
> any way to find out what the fixture looks like, better yet a pix?. Now I'm
> wondering if an old IBM keypunch card maker could be the base. I can't
> recall the model number., but there was no shortage.of them 40 years ago but
> I'll bet you could find one cheap if you looked hard enough.
> 73
> hank
>

I have never seen the punching fixture, but think it consists of a
number of punches with a plate and die that matches the plates in the
tester. Punches are added or removed, depending upon whether a hole
is to be punched in a certain location. When all punches are in place
the (guessing) lever is pulled and a cam drives the punches through
the card into the die. Even this method is pretty darn slow. You
would be working for a long time to make up a set of thousands of
cards. Now there was a guy selling some cards on Ebay a year or so
back--he was in California. I don't know if he has any cards left.

1191. Re: Carmatic card questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 13:15:18 UTC
From: bonomi@host122.r-bonomi.com
Message-ID: <a7bcf$402a2ae6$44a75e7a$24988@msgid.meganewsservers.com>
Source record: 28728
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

In article <4029D6A9.32238FAD@earthlink.net>,
Michael A. Terrell <mike.terrell@earthlink.net> wrote:
>Henry Kolesnik wrote:
>>
>> I'm aware of the computerized unit at
>> http://www.tubesontheweb.com/index.htm, but it's out of my range. Is there
>> any way to find out what the fixture looks like, better yet a pix?. Now I'm
>> wondering if an old IBM keypunch card maker could be the base. I can't
>> recall the model number., but there was no shortage.of them 40 years ago but
>> I'll bet you could find one cheap if you looked hard enough.
>> 73
>> hank
>
> The old IBM key to card punches that I have seen (and scrapped) were
>the model 19 and the model 29. They were small steel desks full of

better make that a model "026", and "029". There was also a model "129".

the 026 and 029 were distinguishable by the _round_ keys that stuck up from
the keyboard, like a forest of dowels. The "129" had a contemporary-looking
keyboard. with a grid of square keys.

>mechanical and electrical parts that no one wanted, so they were
>scrapped for the steel frames and made into small work benches.

I don't know anything about the cardmatic, but if it uses a 'standard'
Hollerith-style punch-card format 'card', then I know where _lots_
of "surplus" card-maker devices would be available. _Everywhere_ that
governments used "punch-card *VOTING*MACHINES*". You could even make up
a 'ballot form' that had a crib-sheet on it for what each hole in the
card meant. <grin>

1192. LED PIC based counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 13:47:22 UTC
From: Dale Parfitt <par@parelectronics.com>
Message-ID: <KnqWb.13009$%X3.773@nwrddc01.gnilink.net>
Source record: 28729

Anyone know of a PIC based frequency counter using the low current 7 segment readouts as in the Elecraft KX-1? Size, durability and I drain are the important factors here- LCD displays are not an option.

Tnx,

Dale W4OP

1193. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 13:50:00 UTC
From: Martin <marty2kay@earthlink.not>
Message-ID: <cqqWb.192$W74.138@newsread1.news.atl.earthlink.net>
Source record: 28730

"Bill Turner" <noway@nohow.com> wrote in message
news:llej20dksr7lf0ganljp0j6peupug9krf6@4ax.com...
> Does anyone have any suggestions for painting aluminum in a way that
> will be tougher and longer-lasting than you get with the usual spray
> can?
>
> I have a small compressed air paint sprayer, and I'm wondering if
> automotive paint might be good, or perhaps something else? Mainly
> interested in black or shades of gray. What is the best primer for
> aluminum?
>
> --
> Bill, W6WRT

I've gotten the best results by first washing with a strong detergent,
drying, and then using fine steel wool (0000 grade), wiping with a tack
cloth to pick up any steel wool and other dust, and then using a zinc
chromate primer.

1194. Re: Recomendations for a VNA

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 14:17:15 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <LPqWb.6935$hR.189299@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28731

I just got through building up the VNA that Dale mentioned. Kit price is 250
dollars, plus 5 dollars shipping in the USA.
Right now, I am etching the power supply board, and I hope to have the unit
up and running later this afternoon.

Pete

"Tom Bruhns" <k7itm@aol.com> wrote in message
news:3200347.0402101023.4035c9e8@posting.google.com...
> It might be possible to find a donation, too, and of course that
> wouldn't have to be new (but might be). My specific recommendations
> would be biased so I'm going to avoid giving them. However, I think
> you should make a wish-list of features, first, and perhaps your
> students could help you come up with those. It would even be a chance
> to engage them in a little research. I'd say you should have an
> instrument that's easy to learn and use, and that introduces the
> students to a good range of the capabilities of a good VNA. It would
> be good if it introduces them to the importance of calibration, and
> just _what_ should be calibrated on a VNA. It would be good if it can
> make s-parameter measurements. The concept of having the ability to
> make calibrated measurements at the end of a (possibly fairly long)
> transmission line is very useful. In actual use, I'd look for ways to
> illustrate that they (all of them) have limitations: there are
> tradeoffs in the design of a VNA, made with an eye to the intended
> application(s).
>
> I know that HP published some nice application notes about VNA
> applications and calibration and accuracy limits. Likely Rohde &
> Schwarz and Anritsu and others have similar ap notes. If you have
> trouble finding HP ones, I may be able to help, but they're likely on
> the Agilent web (somewhere). Also look for articles in the HP
> Journal...again, I can help if you can't find anything.
>
> Cheers,
> Tom
>
> Bob Liesenfeld <wb0poq@visi.com> wrote in message
news:<40281B51.636401C0@visi.com>...
> > Hi gang,
> > I know there are several professional engineering types on the list,
> > so I thought I'd post this here. I teach at a technical college and it
> > is budget time. My boss asked me for a "wish list" and a vector network
> > analyzer came to mind. What I had in mind would be something we could
> > use to characterize small signal BJT and JFET circuits at say 3-30MHz.
> > VHF and UHF would be nice, but not required. I'd be looking for

> > something that could provide real and imaginary values, so as to be able
> > to develop s parameters for various circuits.
> > In order to qualify for consideration, the unit would have to be new,
> > and non-kit. :(I know HP and others make things like this. Any
> > recommendations?
> > BTW, I know something like this is going to run in the kilo or tens of
> > kilo buck range. Hey, it's their money and they asked. ;) ;) ;)
> >
> > Thanks for the input.
> >
> > Bob WB0POQ

1195. Re: LED PIC based counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 14:54:38 UTC
From: mike@corn2.freeserve.co.uk
Message-ID: <402a420c.445114685@news.freeserve.net>
Source record: 28734

On Wed, 11 Feb 2004 13:47:22 GMT, "Dale Parfitt"
<par@parelectronics.com> wrote:

>Anyone know of a PIC based frequency counter using the low current 7 segment
>readouts as in the Elecraft KX-1? Size, durability and I drain are the
>important factors here- LCD displays are not an option.
>
have a look at...
http://www.qsl.net/om3cph/om3cph.html
it may be what you are looking for

1196. Re: Recomendations for a VNA

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 14:59:49 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <3cgk205tl9ncg57qpb817p68mo36ecr6r8@4ax.com>
Source record: 28732

On Wed, 11 Feb 2004 14:17:15 GMT, "Pete KE9OA"
<n.gianakopoulos@worldnet.att.net> wrote:

>I just got through building up the VNA that Dale mentioned. Kit price is 250
>dollars, plus 5 dollars shipping in the USA.
>Right now, I am etching the power supply board, and I hope to have the unit
>up and running later this afternoon.

Please let us know how you get on....
--

The BBC: Licensed at public expense to spread lies.

1197. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 14:59:50 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <fegk20p98g0cq0g85n0i9spljrif8bc61m@4ax.com>
Source record: 28733

On Wed, 11 Feb 2004 13:50:00 GMT, "Martin" <marty2kay@earthlink.not>
wrote:

>
>"Bill Turner" <noway@nohow.com> wrote in message
>news:llej20dksr7lf0ganljp0j6peupug9krf6@4ax.com...
>> Does anyone have any suggestions for painting aluminum in a way that
>> will be tougher and longer-lasting than you get with the usual spray
>> can?
>>
>> I have a small compressed air paint sprayer, and I'm wondering if
>> automotive paint might be good, or perhaps something else? Mainly
>> interested in black or shades of gray. What is the best primer for
>> aluminum?
>>
>> --
>> Bill, W6WRT
>
>I've gotten the best results by first washing with a strong detergent,
>drying, and then using fine steel wool (0000 grade), wiping with a tack
>cloth to pick up any steel wool and other dust, and then using a zinc
>chromate primer.

Do youse guys in the US not have Hammerite paint? That's what we
mostly use here in Britain. It's top-notch stuff. Needs no priming or
special preparation at all; tough, durable, corrosion-resistant finish
suitable for exterior metalwork in all climates. Good range of colours
finishes and textures. And it's non-toxic. The only thing you need is
the special thinner (only for cleaning brushes or spray equipment -
not the application part).
--

The BBC: Licensed at public expense to spread lies.

1198. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 15:50:39 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <402A4F4F.37DAB079@rica.net>
Source record: 28735

Paul Burridge wrote:

> Do youse guys in the US not have Hammerite paint? That's what we
> mostly use here in Britain. It's top-notch stuff. Needs no priming or
> special preparation at all; tough, durable, corrosion-resistant finish
> suitable for exterior metalwork in all climates. Good range of colours
> finishes and textures. And it's non-toxic. The only thing you need is
> the special thinner (only for cleaning brushes or spray equipment -
> not the application part).

I have bought it in the US. It is tough and good looking.

--
John Popelish

1199. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 15:56:46 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <402A50BE.9611C7B2@rica.net>
Source record: 28736

Bill Turner wrote:
>
> Does anyone have any suggestions for painting aluminum in a way that
> will be tougher and longer-lasting than you get with the usual spray
> can?
>
> I have a small compressed air paint sprayer, and I'm wondering if
> automotive paint might be good, or perhaps something else? Mainly
> interested in black or shades of gray. What is the best primer for
> aluminum?
>
> --
> Bill, W6WRT

Most paint bonds well to aluminum oxide, if it is completely clean. I think the best oxide for paint adhesion is a porous chromate anodize, but thermal oxidation is very good, also. If the object can take the heat, Wipe it with paint thinner, let dry, and bake it in a hot oven (450 F) for an hour or so to evaporate or oxidize all traces of surface oil and provide a good surface oxide. Do not touch it with skin before painting.

--
John Popelish

1200. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 16:00:39 UTC
From: jimp@specsol-spam-sux.com
Message-ID: <c0djj7$ds6$1@mail.specsol.com>
Source record: 28737

donutbandit <none@none.com> wrote:
> jimp@specsol-spam-sux.com wrote in news:c0cfi0qdm1@mail.specsol.com:

> > Imeron; used on airplanes and a bit pricey.
> >

> Imron is very special and pricy stuff. It requires a hardener and can frost
> up your lungs if you don't use the proper breathing apparatus. In other
> words, you die. It costs over $100 a gallon.

I said it was pricey.

As for the danger, lots of things related to amateur radio can be dangerous
and can kill you.

Working on a KW amplifier is dangerous and can kill you if you don't know
what you are doing.

Doing just about anything with a tower is dangerous and can kill you if
you don't know what you are doing.

The paint, just like the tower, comes with safety instructions.

If someone is dumb enough to ignore safety instructions, well...

> I simply cannot believe that anyone would recommend this paint in this
> newsgroup for painting a bit of metal. Do you use rocket fuel in your car
> as well?

> You paint aluminum like any other metal.

The poster didn't ask HOW to paint aluminum, he asked about tough, long
lasting paint. Imeron is tough, long lasting paint.

> It seems that the Internet has invented something that could never have
> survived previously - the instant specialist. This person repeats any and
> all gossip, rumors and inuendo as if it's fact, with no experience
> whatsoever.

What makes you think I have no experience with Imeron?

Isn't it a bit condescending of you to decide what is too expensive or too
dangerous for someone else to use?

I credit the original poster with enough intelligence to make his own
decisions on that.

--
Jim Pennino

Remove -spam-sux to reply.

1201. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 17:43:11 UTC
From: mike@corn2.freeserve.co.uk
Message-ID: <402a6831.454881141@news.freeserve.net>
Source record: 28738

On Tue, 10 Feb 2004 21:19:53 -0800, Bill Turner <noway@nohow.com>
wrote:

>Does anyone have any suggestions for painting aluminum in a way that
>will be tougher and longer-lasting than you get with the usual spray
>can?
>
>I have a small compressed air paint sprayer, and I'm wondering if
>automotive paint might be good, or perhaps something else? Mainly
>interested in black or shades of gray. What is the best primer for
>aluminum?
>
in UK there is a paint called Hammerite, you can get both "crincle"
{similar to the finish as used on the AR88} or smooth. cost is about 3
quid (six dollars US) for a small can or for a spray cannister, the
latter is easier to use but has less paint. It sticks well and can
give a very professional finish.
FWIW, Mike W
--

1202. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 17:57:36 UTC
From: Martin <marty2kay@earthlink.not>
Message-ID: <k2uWb.347$hm4.233@newsread3.news.atl.earthlink.net>
Source record: 28739

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:fegk20p98g0cq0g85n0i9spljrif8bc61m@4ax.com...
> On Wed, 11 Feb 2004 13:50:00 GMT, "Martin" <marty2kay@earthlink.not>
> wrote:
>
> >
> >"Bill Turner" <noway@nohow.com> wrote in message
> >news:llej20dksr7lf0ganljp0j6peupug9krf6@4ax.com...
> >> Does anyone have any suggestions for painting aluminum in a way that
> >> will be tougher and longer-lasting than you get with the usual spray
> >> can?
> >>
> >> I have a small compressed air paint sprayer, and I'm wondering if
> >> automotive paint might be good, or perhaps something else? Mainly
> >> interested in black or shades of gray. What is the best primer for
> >> aluminum?
> >>
> >> --
> >> Bill, W6WRT
> >
> >I've gotten the best results by first washing with a strong detergent,
> >drying, and then using fine steel wool (0000 grade), wiping with a tack
> >cloth to pick up any steel wool and other dust, and then using a zinc
> >chromate primer.
>
> Do youse guys in the US not have Hammerite paint? That's what we
> mostly use here in Britain. It's top-notch stuff. Needs no priming or
> special preparation at all; tough, durable, corrosion-resistant finish
> suitable for exterior metalwork in all climates. Good range of colours
> finishes and textures. And it's non-toxic. The only thing you need is
> the special thinner (only for cleaning brushes or spray equipment -
> not the application part).
> --

It's available here. Their web page recommends use of their primer for
aluminum.

1203. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 18:54:54 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <BmaQ6XB+pnKAFAIs@ifwtech.co.uk>
Source record: 28741

Mike W wrote:
>On Tue, 10 Feb 2004 21:19:53 -0800, Bill Turner <noway@nohow.com>
>wrote:
>
>>Does anyone have any suggestions for painting aluminum in a way that
>>will be tougher and longer-lasting than you get with the usual spray
>>can?
>>
>>I have a small compressed air paint sprayer, and I'm wondering if
>>automotive paint might be good, or perhaps something else? Mainly
>>interested in black or shades of gray. What is the best primer for
>>aluminum?
>>
>in UK there is a paint called Hammerite, you can get both "crincle"
>{similar to the finish as used on the AR88} or smooth. cost is about 3
>quid (six dollars US) for a small can or for a spray cannister, the
>latter is easier to use but has less paint. It sticks well and can
>give a very professional finish.

I've had mixed success with Hammerite on aluminium (alloy). It certainly covers well, but in the longer term it tends to flake off aluminium surfaces that had not been extremely well cleaned and de-greased before painting. Since the object in question was a 12-yagi antenna array, scrupulous cleaning of every square inch was not a practical option.

After a few years outdoors, it seemed that the Hammerite was bonded only to itself. The slightest tap would knock off a large flake, exposing bare metal with no trace that the paint had ever been truly bonded to it.

The best primer I've found for aluminium is a solvent and epoxy based formulation called Bonda Primer, made in the UK by the Bondaglass company that makes various kinds of fibreglass materials and car body fillers. It is a red oxide primer, presumably intended mainly for steel bodywork, but it really does bond to aluminium. After drying overnight, it forms a very tough skin that will take any top-coat - including Hammerite - and it will *not* come off.

I don't suppose Bonda Primer is available in the USA under that name (it's hard enough to find in the UK, from a few independent auto parts shops), but you could try to find a similar solvent and epoxy based red oxide primer.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

1204. Cavity LNA for 144

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 20:11:23 UTC
From: RobO <robert@g1zjp.freeserve.co.uk>
Message-ID: <c0e2b5$198$1@news5.svr.pol.co.uk>
Source record: 28740

Hi all
I fancy having a bash at a cavity LNA for 2m with a HEMPT device (rather than the PHEMPT), does anybody have any recommended designs I could look up and copy, please.
Thanks & regards
Bob
G1ZJP

--
Protected by Norton Anti Virus and Norton Internet Securities

1205. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 21:34:42 UTC
From: derek_toeppen@agilent.com
Message-ID: <2219e080.0402111334.28b8bdf9@posting.google.com>
Source record: 28742

John Popelish <jpopelish@rica.net> wrote in message news:<402A50BE.9611C7B2@rica.net>...

A number of years ago I picked up a pint of an acid, from NAPA
Auto Parts, used to clean aluminum for painting.
Once clean, I use epoxy appliance spray paint from the local
hardware store.

> Bill Turner wrote:
> >
> > Does anyone have any suggestions for painting aluminum in a way that
> > will be tougher and longer-lasting than you get with the usual spray
> > can?
> >
> > I have a small compressed air paint sprayer, and I'm wondering if
> > automotive paint might be good, or perhaps something else? Mainly
> > interested in black or shades of gray. What is the best primer for
> > aluminum?
> >
> > --
> > Bill, W6WRT
>
> Most paint bonds well to aluminum oxide, if it is completely clean. I
> think the best oxide for paint adhesion is a porous chromate anodize,
> but thermal oxidation is very good, also. If the object can take the
> heat, Wipe it with paint thinner, let dry, and bake it in a hot oven
> (450 F) for an hour or so to evaporate or oxidize all traces of
> surface oil and provide a good surface oxide. Do not touch it with
> skin before painting.

1206. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 21:46:18 UTC
From: "Gary S." <Idontwantspam@net>
Message-ID: <df8l20p16etvamntquts1a61943jjdm9oq@4ax.com>
Source record: 28743

On Tue, 10 Feb 2004 21:19:53 -0800, Bill Turner <noway@nohow.com>
wrote:

>Does anyone have any suggestions for painting aluminum in a way that
>will be tougher and longer-lasting than you get with the usual spray
>can?
>
An alternative might be anodizing, which is a very durable and
corrosion resistant finish.

Some outfits which do anodizing will add your part in with a batch of
other things with the same process, and it could be far less $$ than
you think.

Any surface treatment, anodizing, paint, or whatever: surface
prep/cleaning is the key to a quality finish.

Happy trails,
Gary (net.yogi.bear)
---
at the 51st percentile of ursine intelligence

Gary D. Schwartz, Needham, MA, USA
Please reply to: garyDOTschwartzATpoboxDOTcom

1207. Re: 4CX5000A oops

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 22:55:13 UTC
From: mail@catv-solutions.nl
Message-ID: <bfa23d16.0402111455.22d1063b@posting.google.com>
Source record: 28744

Hallo Eddy.
Well i give them a call today and yes they were verry helpfull.
The man i spoke to gave me a site where i could download several
complete manuals. Not the BE-5A manual but manny others.
He alsow say that when i have anny questions he will do his verry best
to answer them. I totaly did not expect this kind of help from a
company that build an sell broadcast transmitters. They dont work
with the CX5000 annymore but the 3500 / 7500 / 20000.
So now i have all the diagrams which they are produsing now.
They work with a folded half wave coaxial resonator which is made to
resonace with a pipe into this half wave resonator. This adjusting
pipe can be lifted up or lower down to make the line half wave coaxial
resonator resonate.
They output is done by a pick-up resonator near the plate coaxial
resonator line. The folded half wave coaxial resonator is in a cavity
which forms together a 55 ohm coax-line.
The Harris company has a total different design which you can see on
www.ghz.it
I'm sure when You see the photo's You will understand.
The design makes it possible to make the cavity much smaler.
This is the one i'm gonna make. I allready did some (un-power'd no
voltage)testing. Looks pretty good. Nice sharp dip in the plate
resonator.
Maby in the future i will alsow build the B.E design.

Eddy thank's for the phone number of this company.
It realy helps out to see all those designs to make your own.
We will speak again. Greetings from holland. Onno.

mail@catv-solutions.nl (Onno de Vries.) wrote in message
news:<bfa23d16.0402080915.2ebfab@posting.google.com>...
> Hallo Eddy.
>
> I will surely give them a call tomorrow. Fist see what is the time
> difference.
> I alsow got a good advise from Umar on Amateur Broadcasting.
> He was talking about a Harris transmitter.
> After much digging on the Harris page i found some verry interesting
> stuff.
> Two schematics and some cavity drawings. All in PDF format. The
> tube's they use are the 4CX3500/5000/7500 and the 10.000. The thing
> i have to do now is calculate the size of the cavity and than i have
> an almost comlete design.
> So that is VERRY GOOD.
>

> Eddy........thanks for helping me out. I will let You know the
> result of my phonecall what i will make with B.E.
>
> Greetings from Elburg the Netherlands. Onno.
>
>
> "Eddie Haskel" <wiseguy@clever.com> wrote in message
news:<TTjVb.22556$tD3.16194@newssvr25.news.prodigy.com>...
> > Onno...call them on the phone, their support is very good. They are located
> > in Quincy, Illinois.
> >
> > Broadcast Electronics
> > 4100 North 24th Street
> > Quincy ,Il. 62305
> > (217)224-9600
> >
> > I have toured their facility, they are a very nice group of people. The
> > factory is in a very quaint rural setting in Quincy. It's a "Stone-throw"
> > from the Harris Factory. A lot of the people that work at BE are ham radio
> > ops...I suspect you could get a hold of a BE-5A manual pretty easy.
> > Be VERY careful on the filiment voltage on the 4CX5000..it likes to be at
> > 5.0 Volts. Don't let it sag below 4.8 Volts and over 5.25 Volts is not good
> > for it either. I have seen the BE-5A run at 72% eff..thats pretty
> > good.....Eddie
> > "Onno de Vries." <mail@catv-solutions.nl> wrote in message
> > news:bfa23d16.0402061758.1419c97e@posting.google.com...
> > > Hallo Eddy. Thanks for responding. I did some seaching and i
> > > can find this BE-5A manny time's but i cannot find photo's, schematics
> > > ,manuals wich can explane me a bit more in detail so i can build the
> > > thing.
> > > This time better than before,This double resonator.
> > >
> > > If You know where i can find what i need please let me know.
> > >
> > > Allready thank's Onno.
> > >
> > >
> > > Dave Foreman <davelf11@cox.net> wrote in message
> news:<lcl620l2co259asv6d4ce4gkhe5r9asler@4ax.com>...
> > > > On Fri, 06 Feb 2004 01:23:53 -0700, Dave Foreman <davelf11@cox.net>
> wrote:
> > > >
> > > > >On Fri, 06 Feb 2004 06:23:16 GMT, "Eddie Haskel" <wiseguy@clever.com>
> > > > >wrote:
> > > > >
> > > > >>look at (and copy) the final circuit from a BE-5A (broadcast
> electronics) FM
> > > > >>transmitter.It's very simple and very stable too. It likes about 200
> watts
> > > > >>of drive from a IPA. Will run nicely with 5000 volts at about 1 amp on

> the
> > > > >>plate. In the BE transmitter the tube sits in a cavity, with the plate
> being
> > > > > >>slide tuned. A coupling loop sits close to the tube....Eddie
> > > > > >>
> > > > > >>"Onno de Vries." <mail@catv-solutions.nl> wrote in message
> > > > > >>news:bfa23d16.0402040943.7beda11a@posting.google.com...
> > > > > >>> My name is Onno de Vries and i'm living in the Netherland and
> building
> > > > > >>> big amps is my hobby.
> > > > > >>> I just bought a 4CX 5000A on a radio market here for a good price
> (180
> > > > > >>> Euro) including socket.
> > > > > > >
> > > > > > >SNIP
> > > > > > >
> > > > > > >>>
> > > > > > >>> Greetings.....Onno
> > > > > > >>
> > > > > > >
> > > > > > >the 4CX5000A takes 10 Volts at 75 Amps, if I remember correctly.
> > > > > > >Dave F.
> > > > > >
> > > > > > Meant to say on the filiment, I had one at one time and
> > > > > > mostly used as a paper weight.
> > > > > > Dave F.

1208. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-11 23:45:59 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <vhfl20tscko8fu1fm2uf645t068it0sim3@4ax.com>
Source record: 28746

On Wed, 11 Feb 2004 19:07:05 -0500, "Ralph Mowery" <rmowery@ctc.net>
wrote:

>>>
>> I've had mixed success with Hammerite on aluminium (alloy). It certainly
>> covers well, but in the longer term it tends to flake off aluminium
>> surfaces that had not been extremely well cleaned and de-greased before
>> painting. Since the object in question was a 12-yagi antenna array,
>> scrupulous cleaning of every square inch was not a practical option.
>
>Why do you want to paint an antenna ?
>If it is going to be outside, you may need to check out the airplane paint.

That's the cyanide-based one, isn't it? He'll need a full-face,
filtered respirator with an air pump and inlet at least 30' away or
risk a sudden and very unpleasant death. Seems a bit OTT 2 me.
--

The BBC: Licensed at public expense to spread lies.

1209. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 00:07:05 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <y8KdnXPdM7daKLfd4p2dnA@ctc.net>
Source record: 28745

>>
> I've had mixed success with Hammerite on aluminium (alloy). It certainly
> covers well, but in the longer term it tends to flake off aluminium
> surfaces that had not been extremely well cleaned and de-greased before
> painting. Since the object in question was a 12-yagi antenna array,
> scrupulous cleaning of every square inch was not a practical option.

Why do you want to paint an antenna ?
If it is going to be outside, you may need to check out the airplane paint.

1210. Re: LED PIC based counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 00:42:51 UTC
From: averyfineman@aol.com
Message-ID: <20040211194251.11022.00004066@mb-m14.aol.com>
Source record: 28597

In article <KnqWb.13009$%X3.773@nwrddc01.gnilink.net>, "Dale Parfitt"
<par@parelectronics.com> writes:

>Anyone know of a PIC based frequency counter using the low current 7 segment
>readouts as in the Elecraft KX-1? Size, durability and I drain are the
>important factors here- LCD displays are not an option.

A problem there is finding an LED numeric display with low current
per segment or a driver capable of higher peak current for sequential
strobing of an array of LEDs. The only thing that I could recommend
is the miniature LED array with integral magnifying lens and filter that
HP made for their first scientific calculator, the HP-35.

In the HP 1979 Optoelectronic databook, the 5082-7200 series and
5082-7400 series have varying numeric character assemblies from
2 to 16 digits. The 5082-7240 is an 8-digit assembly "capable of
being driven by MOS circuits" (according to catalog text, apparently
in reference to calculator use). Average per segment current is
about 0.5 mA and peak current (for strobing array) is 5.0 mA. The
character height is 2.59mm by 1.52mm wide but magnified by the
integral plastic lens. I've stared at that HP-35 calculator display
long enough without eyestrain from the appearance (only headaches
from results not meeting expectations). Brightness is okay to use
in a well-lighted office environment but gets a bit dim outdoors in the
shade (such as a QRP outing?).

I don't know if they are made any more, couldn't get through the
Agilent-HP site to find them. Someone makes those little LED
numeric arrays now, used in hand-carried frequency counters.

A PIC would strobe segments and the program could be adjusted
to optimize the on-time duty cycle for a particular segment. In using
unmagnified LEDs, the average segment current is around 5 mA
minimum for sufficient brightness but that is variable depending on
the molded-in filtering for various colors (attenuates brightness).
Strobing would require higher peak currents.

Len Anderson
retired (from regular hours) electronic engineer person

1211. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 00:49:49 UTC
From: jimp@specsol-spam-sux.com
Message-ID: <c0eijdcvq1@mail.specsol.com>
Source record: 28598

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote:
> On Wed, 11 Feb 2004 19:07:05 -0500, "Ralph Mowery" <rmowery@ctc.net>
> wrote:

> >>>
> >> I've had mixed success with Hammerite on aluminium (alloy). It certainly
> >> covers well, but in the longer term it tends to flake off aluminium
> >> surfaces that had not been extremely well cleaned and de-greased before
> >> painting. Since the object in question was a 12-yagi antenna array,
> >> scrupulous cleaning of every square inch was not a practical option.
> > >
> > >Why do you want to paint an antenna ?
> > >If it is going to be outside, you may need to check out the airplane paint.

> That's the cyanide-based one, isn't it? He'll need a full-face,
> filtered respirator with an air pump and inlet at least 30' away or
> risk a sudden and very unpleasant death. Seems a bit OTT 2 me.
> --

> The BBC: Licensed at public expense to spread lies.

Cyanide based?

Most of the better aircraft paints (for metal; fabic is different) are
polyurethane enamels. Polyurethane mists require masks, but an air
pump 30' away, hardly.

--
Jim Pennino

Remove -spam-sux to reply.

1212. Re: 4CX5000A oops

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 01:44:11 UTC
From: Eddie Haskel <wiseguy@clever.com>
Message-ID: <LTAWb.11659$ax6.6780@newssvr29.news.prodigy.com>
Source record: 28599

Your VERY welcome Onno!
Glad to help. I have worked with a pair of those BE-5A transmitters for the better part of 18 years and they are a very "hearty" design. I am sure the finished amplifier will be good for you and something to be proud of. Good luck and let us know how it goes....Eddie
"Onno de Vries." <mail@catv-solutions.nl> wrote in message news:bfa23d16.0402111455.22d1063b@posting.google.com...
> Hallo Eddy.
> Well i give them a call today and yes they were verry helpfull.
> The man i spoke to gave me a site where i could download several
> complete manuals. Not the BE-5A manual but manny others.
> He alsow say that when i have anny questions he will do his verry best
> to answer them. I totaly did not expect this kind of help from a
> company that build an sell broadcast transmitters. They dont work
> with the CX5000 annymore but the 3500 / 7500 / 20000.
> So now i have all the diagrams which they are produsing now.
> They work with a folded half wave coaxial resonator which is made to
> resonace with a pipe into this half wave resonator. This adjusting
> pipe can be lifted up or lower down to make the line half wave coaxial
> resonator resonate.
> They output is done by a pick-up resonator near the plate coaxial
> resonator line. The folded half wave coaxial resonator is in a cavity
> which forms together a 55 ohm coax-line.
> The Harris company has a total different design which you can see on
> www.ghz.it
> I'm sure when You see the photo's You will understand.
> The design makes it possible to make the cavity much smaler.
> This is the one i'm gonna make. I allready did some (un-power'd no
> voltage)testing. Looks pretty good. Nice sharp dip in the plate
> resonator.
> Maby in the future i will alsow build the B.E design.
>
> Eddy thank's for the phone number of this company.
> It realy helps out to see all those designs to make your own.
> We will speak again. Greetings from holland. Onno.
>
>
> mail@catv-solutions.nl (Onno de Vries.) wrote in message news:<bfa23d16.0402080915.2ebfab@posting.google.com>...
> > Hallo Eddy.
> >
> > I will surely give them a call tomorrow. Fist see what is the time
> > difference.
> > I alsow got a good advise from Umar on Amateur Broadcasting.

> > He was talking about a Harris transmitter.
> > After much digging on the Harris page i found some verry interesting
> > stuff.
> > Two schematics and some cavity drawings. All in PDF format. The
> > tube's they use are the 4CX3500/5000/7500 and the 10.000. The thing
> > i have to do now is calculate the size of the cavity and than i have
> > an almost comlete design.
> > So that is VERRY GOOD.
> >
> > Eddy........thanks for helping me out. I will let You know the
> > result of my phonecall what i will make with B.E.
> >
> > Greetings from Elburg the Netherlands. Onno.
> >
> >
> > "Eddie Haskel" <wiseguy@clever.com> wrote in message
news:<TTjVb.22556$tD3.16194@newssvr25.news.prodigy.com>...
> > > Onno...call them on the phone, their support is very good. They are
located
> > > in Quincy, Illinois.
> > >
> > > Broadcast Electronics
> > > 4100 North 24th Street
> > > Quincy ,Il. 62305
> > > (217)224-9600
> > >
> > > I have toured their facility, they are a very nice group of people.
The
> > > factory is in a very quaint rural setting in Quincy. It's a
"Stone-throw"
> > > from the Harris Factory. A lot of the people that work at BE are ham
radio
> > > ops...I suspect you could get a hold of a BE-5A manual pretty easy.
> > > Be VERY careful on the filiment voltage on the 4CX5000..it likes to be
at
> > > 5.0 Volts. Don't let it sag below 4.8 Volts and over 5.25 Volts is not
good
> > > for it either. I have seen the BE-5A run at 72% eff..thats pretty
> > > good.....Eddie
> > > "Onno de Vries." <mail@catv-solutions.nl> wrote in message
> > > news:bfa23d16.0402061758.1419c97e@posting.google.com...
> > > > Hallo Eddy. Thanks for responding. I did some seaching and i
> > > > can find this BE-5A manny time's but i cannot find photo's,
schematics
> > > > ,manuals wich can explane me a bit more in detail so i can build the
> > > > thing.
> > > > This time better than before,This double resonator.
> > > >
> > > > If You know where i can find what i need please let me know.
> > > >

> > > > Allready thank's Onno.
> > > >
> > > >
> > > > Dave Foreman <davelf11@cox.net> wrote in message
> > news:<lcl620l2co259asv6d4ce4gkhe5r9asler@4ax.com>...
> > > > > On Fri, 06 Feb 2004 01:23:53 -0700, Dave Foreman
<davelf11@cox.net>
> > wrote:
> > > > > >
> > > > > >On Fri, 06 Feb 2004 06:23:16 GMT, "Eddie Haskel"
<wiseguy@clever.com>
> > > > > >wrote:
> > > > > >
> > > > > >>look at (and copy) the final circuit from a BE-5A (broadcast
> > electronics) FM
> > > > > >>transmitter.It's very simple and very stable too. It likes about
200
> > watts
> > > > > >>of drive from a IPA. Will run nicely with 5000 volts at about 1
amp on
> > the
> > > > > >>plate. In the BE transmitter the tube sits in a cavity, with the
plate
> > being
> > > > > >>slide tuned. A coupling loop sits close to the tube....Eddie
> > > > > >>
> > > > > >>"Onno de Vries." <mail@catv-solutions.nl> wrote in message
> > > > > >>news:bfa23d16.0402040943.7beda11a@posting.google.com...
> > > > > >>> My name is Onno de Vries and i'm living in the Netherland and
> > building
> > > > > >>> big amps is my hobby.
> > > > > >>> I just bought a 4CX 5000A on a radio market here for a good
price
> > (180
> > > > > >>> Euro) including socket.
> > > > > >>>
> > > > > >>>SNIP
> > > > > >>>
> > > > > >>>
> > > > > >>> Greetings.....Onno
> > > > > >>>
> > > > > >>>
> > > > > >>>the 4CX5000A takes 10 Volts at 75 Amps, if I remember correctly.
> > > > > >>>Dave F.
> > > > > >>
> > > > > > Meant to say on the filiment, I had one at one time and
> > > > > > mostly used as a paper weight.
> > > > > > Dave F.

1213. Re: Recomendations for a VNA

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 01:51:41 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <N_AWb.8788$hR.245740@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28600

Hi Paul,
I just finished it this evening.....it is a
good piece of equipment, and worth the money. Tomorrow, I will do more
in-depth testing. It appears to have resolution to 6 digits, which is good.
It consists of a pair of 9851 DDS chips, with a 1496 being used as a direct
conversion detector. I think I am going to build another one, so I can use
one at home and one at work.

Pete

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:3cgk205tl9ncg57qpb817p68mo36ecr6r8@4ax.com...
> On Wed, 11 Feb 2004 14:17:15 GMT, "Pete KE9OA"
> <n.gianakopoulos@worldnet.att.net> wrote:
>
> >I just got through building up the VNA that Dale mentioned. Kit price is
250
> >dollars, plus 5 dollars shipping in the USA.
> >Right now, I am etching the power supply board, and I hope to have the
unit
> >up and running later this afternoon.
>
> Please let us know how you get on....
> --
>
> The BBC: Licensed at public expense to spread lies.

1214. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 04:20:24 UTC
From: dplatt@radagast.org
Message-ID: <102lvo8f7l56p17@corp.supernews.com>
Source record: 28601

In article <c0eijdcvq1@mail.specsol.com>, <jimp@specsol-spam-sux.com> wrote:

>Cyanide based?

Yup - isocyanates.

>Most of the better aircraft paints (for metal; fabic is different) are
>polyurethane enamels. Polyurethane mists require masks, but an air
>pump 30' away, hardly.

According to the MSDS, some of the Dupont Imron paint formulations contain an isocyanate, or use an added isocyanate activator/hardener. This also seems to be true for some of the two-part "linear polyurethane" finishes from other manufacturers, as well. The isocyanates can cause a permanent sensitization of the lungs - a chemically-induced asthma. Think "Super-glue fumes, in giant industrial-sized portions" and you're probably in the right ballpark.

For these formulas, the MSDS specifies the use of a positive-pressure, supplied-air respirator. Filter-type masks are not adequate.

It looks as if some of the Imron paints don't use isocyanates, and an air-purifying respirator with organic-vapor filter cartridges is stated to be sufficient.

http://www.bronkalla.com/upkeep/spray_imron.htm is interesting reading, written by a boat builder/refinisher who used used a clear Imron above the waterline.

Sure looks as if this stuff is something to be _very_ careful with... read the MSDS, follow the instructions, observe all precautions, etc. The idea of shopping out the job to a local body-shop which is already set up for it is a good one, if you can find one in your area.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

1215. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 07:06:45 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <oDEKT0AFYyKAFA$s@ifwtech.co.uk>
Source record: 28602

Ralph Mowery wrote:
>>>
>> I've had mixed success with Hammerite on aluminium (alloy). It certainly
>> covers well, but in the longer term it tends to flake off aluminium
>> surfaces that had not been extremely well cleaned and de-greased before
>> painting. Since the object in question was a 12-yagi antenna array,
>> scrupulous cleaning of every square inch was not a practical option.
>
>Why do you want to paint an antenna ?

To keep the neighbors happy. Southern England is not the land of wide
open spaces, and this antenna filled the width of our long, narrow
garden.

Don't worry, I didn't paint the yagi elements; but all the support
framework had a coat of Hammerite green.

I wasn't trying to make the antenna invisible - that would have been
impossible - but showing the neighbors that I was making an effort. In
that respect, the paint job worked and was appreciated.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

1216. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 07:28:28 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <wTCM3FCcsyKAFA9v@ifwtech.co.uk>
Source record: 28603

Paul Burridge wrote:

>>you may need to check out the airplane paint.
>
>That's the cyanide-based one, isn't it? He'll need a full-face,
>filtered respirator with an air pump and inlet at least 30' away or
>risk a sudden and very unpleasant death. Seems a bit OTT 2 me.
>--
>
>The BBC: Licensed at public expense to spread lies.

Looks like the BBC's problem might be too much unlicensed amateur
competition :-)

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

1217. HV oil cap

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 16:54:59 UTC
From: rob34 <rob34@infinet.com>
Message-ID: <102nbv5fnveoa45@corp.supernews.com>
Source record: 28604

I have an oil cap rated at 32uf at 4500vdc for sale, I bought it some time ago at a hamfest and it had not been used. I was going to put it in a power suppy, but ended up using a different system and now I don`t need it. I am asking $50 plus shipping. Thanks, Rob WB8VWI

1218. HV oil cap

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 16:57:09 UTC
From: rob34 <rob34@infinet.com>
Message-ID: <102nc38btoungd9@corp.supernews.com>
Source record: 28605

Here is a picture of the cap: http://photos.yahoo.com/rob34115 and go to rob`s photos.

1219. Re: HV oil cap

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 18:41:32 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <76in20pi7hov3nh1ld79odafdissji1v2d@4ax.com>
Source record: 28606

On Thu, 12 Feb 2004 11:57:09 -0500, rob34 <rob34@infinet.com> wrote:

>Here is a picture of the cap: http://photos.yahoo.com/rob34115 and go to
>rob`s photos.
is Nitrogol mentioned?

1220. Re: Recomendations for a VNA

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 19:14:26 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <p1hm20lbgq4jlt2l99vh5ouf248og2v3ho@4ax.com>
Source record: 28607

On Thu, 12 Feb 2004 01:51:41 GMT, "Pete KE9OA"
<n.gianakopoulos@worldnet.att.net> wrote:

>Hi Paul,
> I just finished it this evening.....................it is a
>good piece of equipment, and worth the money. Tomorrow, I will do more
>in-depth testing. It appears to have resolution to 6 digits, which is good.
>It consists of a pair of 9851 DDS chips, with a 1496 being used as a direct
>conversion detector. I think I am going to build another one, so I can use
>one at home and one at work.

Thanks, Pete. Resolution is one thing, accuracy is another. Do you
have a proprietory instrument within calibration to compare it
against? I want to believe in this kit. If it works as advertised then
it's a significant breakthrough for those of us who feel reluctant to
part with 20,000 quid for a piece of relatively infrequently-needed
test equipment! Please report back here when you've had the chance to
check it out properly and let us know how it performs...
--

The BBC: Licensed at public expense to spread lies.

1221. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 19:48:09 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c0gld4$c63$1@newshost.mot.com>
Source record: 28609

I didn't think of it, but what a great application for that bugger!

--
Steve N, K,9;d, c. i My email has no u's.

"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040210194235.05539.00004251@mb-m16.aol.com...
> In article <c0b5qv$a4h$1@newshost.mot.com>, "Steve Nosko"
> <suteuve.nosukowicuz@moutouroula.com> writes:
>
>
> >> ...Analog Devices log detector is
> > I saw that little bugger in QEX. Pretty cool!
>
> Lots of information on the Analog Devices website for datasheets and
> application notes on their full line of logarithmic detectors. Why
anyone
> still wants to depend on germanium diode detectors with very limited
> dynamic range and non-linear detection is beyond me. :-)
>
> Len Anderson
> retired (from regular hours) electronic engineer person

1222. Re: Recomendations for a VNA

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 19:52:26 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <K+rSsLJ6l9KAFAp4@ifwtech.co.uk>
Source record: 28611

Paul Burridge wrote:
>On Thu, 12 Feb 2004 01:51:41 GMT, "Pete KE9OA"
><n.gianakopoulos@worldnet.att.net> wrote:
>
>>Hi Paul,
>> I just finished it this evening.....it is a
>>good piece of equipment, and worth the money. Tomorrow, I will do more
>>in-depth testing. It appears to have resolution to 6 digits, which is good.
>>It consists of a pair of 9851 DDS chips, with a 1496 being used as a direct
>>conversion detector. I think I am going to build another one, so I can use
>>one at home and one at work.
>
>Thanks, Pete. Resolution is one thing, accuracy is another. Do you
>have a proprietory instrument within calibration to compare it
>against? I want to believe in this kit.

N2PK's website (www.qsl.net/n2pk) gives exhaustive information about measurement accuracy, standards and comparisons with professional VNAs.

When used correctly (a necessity for any VNA), N2PK's instrument is so accurate that he had to go to extreme lengths to find any real differences from commercial equipment. For example, the measured signal magnitude tracks a 'standard' step attenuator to better than 0.1dB over a >90dB range... but which is in error, the VNA or the attenuator? At those levels of performance, it's almost impossible to tell.

Bottom line: you'll hardly ever need to worry about accuracy as such, only about using the instrument correctly.

The only minor drawbacks are a small amount of thermal drift (because this is a DC-coupled system) and the possibilities of responding to DDS harmonics and spurs; all of these are very thoroughly documented.

>If it works as advertised then
>it's a significant breakthrough for those of us who feel reluctant to
>part with 20,000 quid for a piece of relatively infrequently-needed
>test equipment! Please report back here when you've had the chance to
>check it out properly and let us know how it performs...

Having had one running for about six months, I can confirm it's excellent. Far from being infrequently-needed, it has become one of those instruments I couldn't possibly manage without!

Read the documentation and you'll see exactly why.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

1223. Vavle type rfc's

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 20:01:48 UTC
From: SB <abc@abc.com>
Message-ID: <c0gm3cncf1@titan.btinternet.com>
Source record: 28608

Hi,

Does anyone know of a UK supplier of the 2.5mH multi coil type rfc's that are used in vale equipment?

Simon B.

1224. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 20:05:39 UTC
From: Uwe Langmesser <outhouse@midcoast.com>
Message-ID: <BC5146C0.D043%outhouse@midcoast.com>
Source record: 28618

Hi Tom,

Thank you for sending that article, it made it fine.

It is quite helpful and gives detailed instructions, I might actually buy that whole book..

I also want to thank all the other posters. Some of the discussion were definetly over my head but as time goes by I might understand this or that detail better. First I need to get my hands on one of those SWR meters (I hear the old URM 120 are quite good and rugged, if I don't built a meter myself that might be the way to go) and gain some experience, I like to learn the theory hand in hand with practical experiments.

73 Uwe

in article 3200347.0402091037.7729ba44@posting.google.com, Tom Bruhns at k7itm@aol.com wrote on 2/9/04 1:37 PM:

> Hi Uwe,
>
> I'll try to remember to send the scan from home tonight. It is just
> under 4 megabytes, so it will take a while to download, but it is ten
> pages from the RSGB book, which seems to explain things better than
> the ARRL article you have (which is the one I also scanned,
> separately). The RSGB pages I scanned includes I think four different
> designs, maybe five, as well as some elemental theory.
>
> Yes, I think the Monimatch uses coupled transmission lines, which is
> what a microstrip (or stripline) coupler is. The microstrip version
> is (generally) a piece of printed circuit board with a ground plane
> (uninterrupted copper foil) on one side, and a straight trace on the
> other side, which is the "through" line, with another trace parallel
> to the first trace and a small distance away, which is the "coupled"
> line. You terminate the coupled line at one end (to avoid
> reflections), and put a detector at the other end, usually just a
> diode detector for SWR monitoring. That tells you the power in one
> direction. Then for convenience, you can put an identical coupled
> line on the other side of the through-line, and terminate it at the
> opposite end compared with the first coupled line, and put a detector
> on it at the other end, and that monitors the power in the other
> direction. So you get two DC outputs, one for "forward" power and one
> for "reverse" power. One important point that is usually
> glossed-over, is that diode detectors will respond with an output
> voltage proportional to the input RF voltage above some level, but
> with an output voltage proportional to the input RF _power_ at lower

> levels. You should design the coupling to operate in one or the other
> of those regions, if you want to more easily make quantitative sense
> of the readings. (An even better way to do it would be to have a
> calibrated step attenuator between the "forward" coupled line and the
> forward detector, and then adjust the attenuator for equal outputs
> from the two diode detectors. Then the attenuator setting tells you
> the load's return loss, from which you can find the SWR if you wish.)
> It's also possible to use phase-sensitive detectors and get the
> complex load impedance...that's essentially what an S-parameter
> network analyzer does.
>
> Cheers,
> Tom
>
>
> Uwe Langmesser <outhouse@midcoast.com> wrote in message
> news:<BC4C8235.CB56%outhouse@midcoast.com>...
>> Hi Tom,
>>
>> No, I don't know the article you mentioned.
>> I just got the ARRL Antenna Book and there is a plan for a directional
>> coupler using some plumbing hardware and I could see myself building that,
>> but again there are some issues about available parts (thru feed caps in
>> particular).
>> From my (limited) understanding these couplers would be the aquivalent of
>> the "plugs" used in meters like the Bird 43 or the URM120.
>>
>> But I am not sold on this design and would certainly want to look at the
>> article you mentioned. And yes, I do have a slow phone connection, but if
>> you are willing I would appreciate if you could send the article as an
>> attachment.
>>
>> Now the microstrip coupler you mention, is that what people also call a
>> monimatch? What are the advantages of one design over another?
>>
>> regards Uwe
>>
>>
>>
>> in article 3200347.0402081747.128055d0@posting.google.com, Tom Bruhns at
>> k7itm@aol.com wrote on 2/8/04 8:47 PM:
>>
>>> This has been a hot topic recently! I just scanned an ARRL article
>>> and a section of the test equipment chapter of the RSGB VHF/UHF
>>> Handbook to send to someone else who is interested in making a
>>> 146/440MHz SWR monitor, and I just made a couple 100MHz-6GHz detectors
>>> for someone else who is looking at monitoring SWR at 2.5GHz.
>>>
>>> Seems to me the simple way for most folk to do it is to make a
>>> microstrip coupler. You can use surface-mount components for the load

>>> and detector and RF decoupling, and they'll work quite well up into
>>> the GHz region, from my experience. As far as RF decoupling goes, you
>>> should be able to do an adequate job on a circuit board...once the
>>> detector turns the RF to DC, just put shunt capacitance to ground and
>>> series inductance in the line. Pick the inductance as you would for
>>> other VHF work: avoid inductors with self-resonances below the freq
>>> of interest.
>>>
>>> You probably have already seen the ARRL article I scanned, but if
>>> you'd like the RSGB one, I could send it. But it's almost 4 megabytes
>>> and may take you a while to download if you have a slow connection.
>>>
>>> Cheers,
>>> Tom
>>>
>>>
>>> Uwe Langmesser <outhouse@midcoast.com> wrote in message
>>> news:<BC4BB8E5.CAEC%outhouse@midcoast.com>...
>>>> I have been looking at various designs of VHF SWR bridges, mainly from ARRL
>>>> sources like old QSTs and such, and I wonder if anybody here has built a
>>>> device like that.
>>>> For my experience level some of the old descriptions are just a touch to
>>>> cryptic or the design calls for parts which I can't locate (small feed thru
>>>> caps are one of those items).
>>>> I would love to discuss this with a knowledgable builder.
>>>>
>>>> 73 Uwe

1225. Re: Recomendations for a VNA

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 20:53:27 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <bJRWb.300189$na.451700@attbi_s04>
Source record: 28610

> Thanks, Pete. Resolution is one thing, accuracy is another. Do you
> have a proprietory instrument within calibration to compare it
> against? I want to believe in this kit. If it works as advertised then
> it's a significant breakthrough for those of us who feel reluctant to
> part with 20,000 quid for a piece of relatively infrequently-needed
> test equipment! Please report back here when you've had the chance to
> check it out properly and let us know how it performs...

Paul, what part of the comparison between my Boonton and the N2PK VNA do you have a difficult time with? Or for that matter, the comparisons with Chip Owens HP 5783C? The accuracy is primarily limited by the quality of the OSL standards used in setup, and the experience of the user in establishing his/her reference plane.

W4ZCB

1226. Re: Recomendations for a VNA

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 21:56:04 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <UDSWb.25232$fV5.544468@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28612

I did play with it today, sweeping a couple of filters. The unit is amazing!
I understand that one fellow in England is developing Windows based software
to control this unit. I am pretty excited about that.
I don't have any suitable transfer standards for checking the accuracy of
this instrument, but the designer has done a very good job of characterizing
this unit. See the following posts.
One more thing.....I think you would be very happy with this unit.

Pete

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:p1hm20lbgq4jlt2l99vh5ouf248og2v3ho@4ax.com...
> On Thu, 12 Feb 2004 01:51:41 GMT, "Pete KE9OA"
> <n.gianakopoulos@worldnet.att.net> wrote:
>
> >Hi Paul,
> > I just finished it this evening.....it is a
> >good piece of equipment, and worth the money. Tomorrow, I will do more
> >in-depth testing. It appears to have resolution to 6 digits, which is
good.
> >It consists of a pair of 9851 DDS chips, with a 1496 being used as a
direct
> >conversion detector. I think I am going to build another one, so I can
use
> >one at home and one at work.
>
> Thanks, Pete. Resolution is one thing, accuracy is another. Do you
> have a proprietory instrument within calibration to compare it
> against? I want to believe in this kit. If it works as advertised then
> it's a significant breakthrough for those of us who feel reluctant to
> part with 20,000 quid for a piece of relatively infrequently-needed
> test equipment! Please report back here when you've had the chance to
> check it out properly and let us know how it performs...
> --
>
> The BBC: Licensed at public expense to spread lies.

1227. Re: Recomendations for a VNA

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 21:58:00 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <IFSWb.25241$fV5.544133@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28613

Agreed.....a super good unit.

Pete

"Harold E. Johnson" <W4ZCB@mchsi.com> wrote in message
news:bJRWb.300189$na.451700@attbi_s04...
>
>
> > Thanks, Pete. Resolution is one thing, accuracy is another. Do you
> > have a proprietory instrument within calibration to compare it
> > against? I want to believe in this kit. If it works as advertised then
> > it's a significant breakthrough for those of us who feel reluctant to
> > part with 20,000 quid for a piece of relatively infrequently-needed
> > test equipment! Please report back here when you've had the chance to
> > check it out properly and let us know how it performs...
>
> Paul, what part of the comparison between my Boonton and the N2PK VNA do
you
> have a difficult time with? Or for that matter, the comparisons with Chip
> Owens HP 5783C? The accuracy is primarily limited by the quality of the
OSL
> standards used in setup, and the experience of the user in establishing
> his/her reference plane.
>
> W4ZCB
>
>

1228. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 22:31:16 UTC
From: Biz WD=?ISO-8859-1?B?2A==?=HCO <wd0hco@ev1.net>
Message-ID: <BC515AD4.C006%wd0hco@ev1.net>
Source record: 28615
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

Well to answer the replacement question - according to GE Industrial Tube Products Guide - (Dated 9-79)

You can replace an 829 with an 829B.

You can replace an 829A with an 829B or an 3E29.

You can only replace an 829B with another 829B.

Why? I don't know, that's what GE says.

Now what an you use an 829B for? Well I got one, it was a spare from a GE 6m Prog Repeater our club had on the air. The replaced it with a nice Moto. The Prog was up for grabs but no one wanted it and was about to be hauled to the landfill so I took it.

It lasted about two days in my house working fine. Then I put it out of it's misery and parted it out. It had lots of juicy power transformers, tubes and sockets, XTAL holders and so on. Most ended up in other projects or repaired rigs except for the 829B.

What to do with it ???

I decided to build a one tube 40 Meter CW transmitter.

Nothing special about that - all of us have built 6L6's or 117L7GT, 6V6, 6C4, 6GW8 or you name it peanut whistlers. Nothing more than an oscillator connected to a string (antenna) blasting out a few watts.

But how about a SINGLE tube transmitter pumping out 100 to 115 Watts !!!

With minimal parts count to boot!

I got the idea from QST - June 1940 (page 26) in which Fred Sutter W8QBW describes a transmitter using -TWO- 6L6's in push-pull supposedly outputting 100 watts to an end-fed Zepp.

I'd take the 100 Watt claim with a little grain of salt... but it's still not too shabby for 12 parts and 2 tubes not counting the power supply.

The 829B can replace the two 6L6's and the circuit can be adjusted accordingly. The output tank circuit will be PI instead of link which was common back then. I also have a nice power transformer that looks like it can do 700 mils at 750 VAC so I have plenty of head room to crank out more power if it can handle it and the XTAL doesn't shatter.

I'll use forced air cooling because the 829B socket is already designed for it. Was gonna go with a fancy blower but I noticed the XYL is not using the

small Dirt Devil handVac I gave her for her birthday. Will cut a small hole in the chassis and placed a PVC pipe and attach the air hose to that. RCA Manual says the MAX glass temp is 235 F so hopefully, the plastic vac can handle it.

For a Glass Chimney, I took a drinking glass and cut off the bottom with a glass cutting wheel. I was rinsing out the dust in the sink when she spotted me. I told the XYL I had just taken out the glass from the hot dishwasher and poured a little bit of cold water and the glass cracked and the bottom fell out. I hoped she didn't notice the ends were nicely smoothed.

You should have seen her face. Classic...

It's the same look I get when I bring in another hamfest surprise and promise it's the last radio I'll ever buy because my radio collection is complete - excuse.

Well anyway - A single Tube 100 Watt CW Transmitter - that's my 829 project.

Have all the parts - now waiting for the weather to warm up so I can get to work in the Garage.

You just know if she sees that tube chimney and her Dirt Devil, I might just have to sleep there too.

-Biz WDï¿½HCO

I posted a picture of my 829B on alt.binaries.pictures.radio for those who have never seen one.

1229. Re: Recomendations for a VNA

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 22:35:14 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <6lun20l4v9e589smb8fhavad97lssekksr@4ax.com>
Source record: 28614

On Thu, 12 Feb 2004 19:52:26 +0000, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> wrote:

>Having had one running for about six months, I can confirm it's
>excellent. Far from being infrequently-needed, it has become one of
>those instruments I couldn't possibly manage without!
>
>Read the documentation and you'll see exactly why.

I shall. And thanks for the info!
I didn't realise you'd bought the kit. Did you have to have it shipped
over from the States? I assume there's no outlet for them here, as yet
at any rate. What's the UK price inc.shipping? (Just in case I can't
find those details on the site).

--

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1230. Re: Recomendations for a VNA

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 23:02:31 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <0VFtGERHYALAFAV4@ifwtech.co.uk>
Source record: 28620

Paul Burridge wrote:
>On Thu, 12 Feb 2004 19:52:26 +0000, "Ian White, G3SEK"
><G3SEK@ifwtech.co.uk> wrote:
>
>>Having had one running for about six months, I can confirm it's
>>excellent. Far from being infrequently-needed, it has become one of
>>those instruments I couldn't possibly manage without!
>>
>>Read the documentation and you'll see exactly why.
>
>I shall. And thanks for the info!
>I didn't realise you'd bought the kit. Did you have to have it shipped
>over from the States? I assume there's no outlet for them here, as yet
>at any rate. What's the UK price inc.shipping? (Just in case I can't
>find those details on the site).
>
At the time, there wasn't a kit as such, but the parts cost about ï¿½100
in total (not including the DDS ICs, which Analog Devices generously
supply free to amateurs as 'samples').

However, certain parts are only obtainable in the USA, so people in
Europe are getting together to buy in bulk. I don't have any specific
information about that, but a mailing-list is to be started shortly
(wait for the announcement) so that will be a focal point for people to
co-ordinate their buying.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

1231. WTB:VHF ENGINEERING

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 23:07:47 UTC
From: Charlie <okiemansc@yahoo.com>
Message-ID: <TGTWb.28118$EW.11935@okepread02>
Source record: 28616
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.swap

I am interested in buying VHF Engineering boards and parts. Will consider
anything from part to full units.Projects/basket cases fine.
State price and condition.
THANKS !!

1232. Re: Recomendations for a VNA

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-12 23:16:12 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <q62o20h1rq7l1lhehbs7ghf3hbs24ffh2e@4ax.com>
Source record: 28617

On Thu, 12 Feb 2004 19:52:26 +0000, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> wrote:

>Having had one running for about six months, I can confirm it's
>excellent. Far from being infrequently-needed, it has become one of
>those instruments I couldn't possibly manage without!

>Read the documentation and you'll see exactly why.

Okay, I've read the dox but am still in the dark as to what *you* use
yours for. What makes it so indispensible?

--

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1233. Re: Recomendations for a VNA

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 00:01:29 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <ttUWb.301367$na.452693@attbi_s04>
Source record: 28619

> Okay, I've read the dox but am still in the dark as to what *you* use
> yours for. What makes it so indispensible?

When was the last time you needed to know a capacitor value AT the
frequency you're going to use it at? (the "C" minus the "L" of the leads)
Or the passband of a filter and it's IL and it's skirts and it's blowby and
it's group delay and it's terminating impedances?
Or needed dual high level isolated oscillators to make Ip3 measurements on a
receiver or transmitter?
Or have a precision sweep generator and trigger for a Spectrum Analyzer?
Or needed the inductance of an inductor AT the operating frequency? (The "L"
less the "C")
Or needed the series and parallel resonant frquencies of a crystal and the
Rs of same and it's "Q"?
Or needed the "S" parameters of a small signal transistor?
Or wanted to know the impedance of your antenna at the shack end of the
coax. Or, if you were smart enough to log the length of coax when you
installed it, the impedance AT the antenna?
Or needed the Zo of a length of coax?
Or the gain of an amplifier over it's frequency range and it's 3 dB corners
to the 0.01 dB?
Or needed a quadrature signal source to be the LO of that new I-Q receiver?

Or-or-or

It's a lab in a box.

W4ZCB

1234. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 01:04:12 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <rs2o20d3th75vgnml41dm91g5n2v3qug74@4ax.com>
Source record: 28621

On Wed, 11 Feb 2004 00:36:05 +0100, Ralf Ballis - DL2MRB
<r_ballis@hotmail.com> wrote:

>Take a look at:
>
>http://www.ldgelectronics.com
>
>It's a kit.
>
>Regards
>
>Ralf

tried some amateur rubbish the other year, but the problem with
amateur constructions is ususally that you cannot make two units which
performs similarly, and it is difficult to tell what decides the
impedance. If somebody have another opinion I'll be pleased to hear,
it is not 1% accuracy I am after, 10% is good enough and that the
readings are successively the same for the same conditions. Put some
info about some simple couplers you can make on my site, you'll find
it with google search for "Bird Model 43 patent description"

73,

1235. Re: Need more details for mounting high-Q oscillator coils?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 01:04:12 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <rc2o20p6350o1heetrkoqr846jo7p335d4@4ax.com>
Source record: 28622
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On 11 Feb 2004 05:59:20 GMT, averyfineman@aol.com (Avery Fineman)
wrote:

>>A rule of thumb says that the screen around an oscillator coils could
>>be 3 times the coil diameter, and Radiotron Designer's handbook, 3rd
>>edition, 1941 says that the screen should go at least one coil radius
>>above the coil. But how far from the chassis should the coil winding
>>start?
>
> About the same distance. :-) The old Radiotron book (I have a CD
> for one of the editions as a keepsake) has charts showing the
> inductance reduction and Q reduction for various relative diameters.
> The closer the enclosure, the more reduction of both values. That
> sould be accounted for in any resonant applications, especially those
> for tracking as in superhet or TRF front-ends.
>
> The conducting enclosure or shield contains the magnetic field on the
> coil and, ideally, should have the same clearange from both top and
> bottom of the winding. It will still work with an assymetric clearance
> but L and Q are spoiled by the closer spacing.

Well, I forgot to say that I would leave the top side open, so it is
somewhat more distance from the hot side of coil to the metal surface
than in the bottom, but thanks to all for the reply
>
> Toroidal cores are much less affected by conducting enclosures due to
> the magnetic field contained largely IN the torus' core material.
>
> Len Anderson
> retired (from regular hours) electronic engineer person

on this side you you are put in an office landscape and all the tool
is a PC with Microsoft programs, soldering iron is not permitted any
more, you just have to be constructive, hi, so I now prefer thermionic
valves at home

73

1236. Radio noise

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 01:41:15 UTC
From: amdx <amdx@att.net>
Message-ID: <%WVWb.26218$fV5.565541@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28624

I have a boat at a marina,I cannot receive any AM radio using Marina
power.
The audio is one continuous buzz across the dial.
A battery operated radio is ok
FM reception is ok.
I took a scope down and looked at the A.C. waveform, the signal has no
visable noise riding on it, however the wave peaks are flatened. It is not
hard
clipped, it just doesn't have a nice round peaks.
I'm looking for suggestions on how to filter the AC so my
radio will pick up AM.

Thanks
Mike

1237. Re: LED PIC based counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 01:44:04 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <102oauud4jk0i52@corp.supernews.com>
Source record: 28625

Hey! I think I have some of those. Since I'm never going to use them, I suppose I could part with them.

But first the obligitory assesment of assumptions: Why are LCD displays not an option? Could you drive an LCD from your PIC? I've seen info on this from the LCD manufacturers; it looks quite doable from a PIC.

"Avery Fineman" <averyfineman@aol.com> wrote in message news:20040211194251.11022.00004066@mb-m14.aol.com...
> In article <KnqWb.13009$%X3.773@nwrddc01.gnilink.net>, "Dale Parfitt"
> <par@parelectronics.com> writes:
>
> >Anyone know of a PIC based frequency counter using the low current 7 segment
> >readouts as in the Elecraft KX-1? Size, durability and I drain are the
> >important factors here- LCD displays are not an option.
>
> A problem there is finding an LED numeric display with low current
> per segment or a driver capable of higher peak current for sequential
> strobing of an array of LEDs. The only thing that I could recommend
> is the miniature LED array with integral magnifying lens and filter that
> HP made for their first scientific calculator, the HP-35.
>
> In the HP 1979 Optoelectronic databook, the 5082-7200 series and
> 5082-7400 series have varying numeric character assemblies from
> 2 to 16 digits. The 5082-7240 is an 8-digit assembly "capable of
> being driven by MOS circuits" (according to catalog text, apparently
> in reference to calculator use). Average per segment current is
> about 0.5 mA and peak current (for strobing array) is 5.0 mA. The
> character height is 2.59mm by 1.52mm wide but magnified by the
> integral plastic lens. I've stared at that HP-35 calculator display
> long enough without eyestrain from the appearance (only headaches
> from results not meeting expectations). Brightness is okay to use
> in a well-lighted office environment but gets a bit dim outdoors in the
> shade (such as a QRP outing?).
>
> I don't know if they are made any more, couldn't get through the
> Agilent-HP site to find them. Someone makes those little LED
> numeric arrays now, used in hand-carried frequency counters.
>
> A PIC would strobe segments and the program could be adjusted
> to optimize the on-time duty cycle for a particular segment. In using
> unmagnified LEDs, the average segment current is around 5 mA
> minimum for sufficient brightness but that is variable depending on

> the molded-in filtering for various colors (attenuates brightness).
> Strobing would require higher peak currents.
>
> Len Anderson
> retired (from regular hours) electronic engineer person

1238. Re: Radio noise

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 02:08:33 UTC
From: Gary Schafer <gaschafer@comcast.net>
Message-ID: <occo20t1q8osbfeqvsha3hacj8tuc9p2nh@4ax.com>
Source record: 28626

Turn off your battery charger and I bet the noise goes away. :>)

73
Gary K4FMX

On Fri, 13 Feb 2004 01:41:15 GMT, "amdx" <amdx@att.net> wrote:

> I have a boat at a marina,I cannot receive any AM radio using Marina
>power.
>The audio is one continuous buzz across the dial.
>A battery operated radio is ok
>FM reception is ok.
>I took a scope down and looked at the A.C. waveform, the signal has no
>visable noise riding on it, however the wave peaks are flatened. It is not
>hard
>clipped, it just doesn't have a nice round peaks.
> I'm looking for suggestions on how to filter the AC so my
>radio will pick up AM.
>
> Thanks
> Mike
>

1239. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 02:09:12 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <G6adnc8eppJ6vrHdRVn-uQ@ctc.net>
Source record: 28623

> I also want to thank all the other posters. Some of the discussion were
> definetly over my head but as time goes by I might understand this or that
> detail better. First I need to get my hands on one of those SWR meters (I
> hear the old URM 120 are quite good and rugged, if I don't built a meter
> myself that might be the way to go) and gain some experience, I like to
> learn the theory hand in hand with practical experiments.

The URM 120 and their variations are very good, especially for the money.
Think I payed about $ 150 for one at a hamfest. I was very luckey in that
it was new in a sealed box, never opened and was about 10 years or so old.
Someone had alot of them in a truck. It came with 3 plug in units and goes
from about 3 to 30 mhz up to 1000 watts and up to 1000 mhz to 500 watts.

1240. Re: LED PIC based counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 03:18:02 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <102ogffh3hpv6b8@corp.supernews.com>
Source record: 28627

"Tim Wescott" <tim@wescottnospamdesign.com> wrote in message
news:102oauud4jk0i52@corp.supernews.com...

> But first the obligitory assesment of assumptions: Why are LCD displays
not
> an option? Could you drive an LCD from your PIC? I've seen info on this
> from the LCD manufacturers; it looks quite doable from a PIC.

I was wondering that myself. It's a whole bunch lower power than LEDs,
which seemed to be a requirement, and the circuitry is a pile simpler. The
one requirement he did have was "durability" that maybe you could argue LEDs
had a leg up on. Well, maybe with those teeny LED displays you could keep
the size smaller than an LCD, but I suspect you would more than make up for
it in drive circuitry, unless maybe he's thinking surface mount.

Oh, and driving an LCD is a piece of cake from a PIC.

..

1241. Re: LED PIC based counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 04:43:16 UTC
From: Dale Parfitt <par@parelectronics.com>
Message-ID: <EBYWb.2183$wD5.1869@nwrddc03.gnilink.net>
Source record: 28628

"xpyttl" <xpyttl_nospam@earthling.net> wrote in message
news:102ogffh3hpv6b8@corp.supernews.com...
> "Tim Wescott" <tim@wescottnospamdesign.com> wrote in message
> news:102oauud4jk0i52@corp.supernews.com...
>
> > But first the obligitory assesment of assumptions: Why are LCD displays
> not
> > an option? Could you drive an LCD from your PIC? I've seen info on
this
> > from the LCD manufacturers; it looks quite doable from a PIC.
>
> I was wondering that myself. It's a whole bunch lower power than LEDs,
> which seemed to be a requirement, and the circuitry is a pile simpler.
The
> one requirement he did have was "durability" that maybe you could argue
LEDs
> had a leg up on. Well, maybe with those teeny LED displays you could keep
> the size smaller than an LCD, but I suspect you would more than make up
for
> it in drive circuitry, unless maybe he's thinking surface mount.
>
> Oh, and driving an LCD is a piece of cake from a PIC.
>
> ..I appreciate all the comments. The glass cases of the LCD- aside from
being large, is a bit fragile. This is going in a very small trail ready
radio- that may have to survive falls from 3000' rock cliffs. Already lost
an LCD that way.

Dale W4OP
>
>

1242. meter sensitivity versus internal resistance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 05:02:15 UTC
From: Uwe Langmesser <outhouse@midcoast.com>
Message-ID: <BC51C484.D06E%outhouse@midcoast.com>
Source record: 28631

Is there a simple relationship between a meters internal resistance and its sensitivity (ohms per volt).

Maybe this is trivial but I don't see it.

Uwe

1243. Re: LED PIC based counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 05:02:44 UTC
From: averyfineman@aol.com
Message-ID: <20040213000244.01692.00000572@mb-m18.aol.com>
Source record: 28629

In article <102oauud4jk0i52@corp.supernews.com>, "Tim Wescott"
<tim@wescottnospamdesign.com> writes:

>Hey! I think I have some of those. Since I'm never going to use them, I
>suppose I could part with them.
>
>But first the obligitory assesment of assumptions: Why are LCD displays not
>an option? Could you drive an LCD from your PIC? I've seen info on this
>from the LCD manufacturers; it looks quite doable from a PIC.

You are asking the wrong person. I was responding to the person
saying "LCDs are not an option."

An LCD display assembly can most certainly be "driven" (input the
ASCII code for the character) from a PIC. That is how nearly all of
the little wattmeters and frequency counters are arranged.

Actual DRIVE for an LCD takes a different waveform for most LCD
panels. Some are 2-level, others 3-level in their waveform voltages.
Research the LCD display alone, without the local memory and
scan-drive hardware. That part is not as straightforward as it looks.

A PIC PROGRAM normally scans through an internal register
content and outputs based on that. Usually there is a small conversion
operation to change the code from 4-bit numeric to 8-bit ASCII. That
scanning-and-outputting part of the program can easily be changed
(if you know how to write with the free PIC development program) to
"strobe" an LED array, segments versus character position.

If you don't know how to change an already burned-in PIC, then you
must have some sort of outboard local memory to hold 4-bit chunks
of numeric data...or convert from 8-bit ASCII to two 4-bit BCD in order
to drive a 7-bar segment decoder-driver that CAN drive a numeric LED.
That requires more ICs, one decoder-driver per numeral. Average power
to light the LED is about the same for any given brightness whether it
is driven on a DC basis or strobed segment v. numeral.

NONE of the above is "trivial" nor any sort of "cake" if you've never
worked with microcontrollers or their development systems before.
Almost ANYTHING "doable" can be done but development time and
resulting learning curves are hard to fund at the home hobbyist level.

For example, I've been working on inventing anti-gravity. Something
keeps holding the project down ...

Len Anderson
retired (from regular hours) electronic engineer person

1244. FS:NE/SA602AN

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 05:20:40 UTC
From: dsands@ev1.net
Message-ID: <eec6b79a.0402122120.5aeee275@posting.google.com>
Source record: 28630

New old stock Philips NE/SA602AN Balanced Mixers $1.50 ea or 10 for
$12.50 plus $2.00 freight. Also NE614AN FM IF Chips $1.50 ea or 10 for
$12.50
Thanks

1245. WTB: 3' or 4' rack Mount Cabinet

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 06:18:15 UTC
From: Ed <none-given@this-time>
Message-ID: <YM2dnTEn987w8bHdRVn-sA@texas.net>
Source record: 28632

With removable sides, in North Texas please. What do you have?
Thanks, Ed.

1246. Re: Vavle type rfc's

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 08:18:54 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <OL%Wb.36986$QX4.29147@clgrps13>
Source record: 28633

Just see if your local supplier can bring in Hammond equipment. They have
a 2.5mH inductor.

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

1247. Re: Recomendations for a VNA

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 09:01:38 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <bJ4mR$GyJJLAFAgt@ifwtech.co.uk>
Source record: 28634

Harold E. Johnson wrote:
>
>> Okay, I've read the dox but am still in the dark as to what *you* use
>> yours for. What makes it so indispensible?
>
> When was the last time you needed to know a capacitor value AT the
>frequency you're going to use it at? (the "C" minus the "L" of the leads)
>Or the passband of a filter and it's IL and it's skirts and it's blowby and
>it's group delay and it's terminating impedances?
>Or needed dual high level isolated oscillators to make Ip3 measurements on a
>receiver or transmitter?
>Or have a precision sweep generator and trigger for a Spectrum Analyzer?
>Or needed the inductance of an inductor AT the operating frequency? (The "L"
>less the "C")
>Or needed the series and parallel resonant frquencies of a crystal and the
>Rs of same and it's "Q"?
>Or needed the "S" parameters of a small signal transistor?
>Or wanted to know the impedance of your antenna at the shack end of the
>coax. Or, if you were smart enough to log the length of coax when you
>installed it, the impedance AT the antenna?
>Or needed the Zo of a length of coax?
>Or the gain of an amplifier over it's frequency range and it's 3 dB corners
>to the 0.01 dB?
>Or needed a quadrature signal source to be the LO of that new I-Q receiver?
>
>Or-or-or
>
>It's a lab in a box.
>
>W4ZCB
>

Thanks to the US-Europe time difference, Harold has left me very little
to add this morning!

We could also think of it in terms of the other instruments that the VNA
can replace - or beat, because it gives full vector (R-X etc)
information. Using only its reflection functions, the VNA can replace
all of the following: an MFJ, Autek or AEA computing antenna analyser;
an LF LCR bridge; a Q meter; an HF R-X impedance bridge; and an HF
return loss bridge.

As Harold pointed out, the twin DDS signal sources can replace an HF
sweeper or a medium-quality HF signal generator - or two of each, if
necessary.

The transmission measurement functions - magnitude and phase, with a dynamic range of at least 90dB - are something I just didn't have.

Several months ago, Harold described an excellent practical example of designing and building a crystal filter. This goes in five steps:

1. Rough out the design using available software.

2. Take a pile of cheap crystals and measure their individual characteristics, on-frequency, using the VNA. Select the best ones for the filter you want to build.

3. Refine the filter design according to the actual component measurements, and use simulation software to predict how it's going to work. Adjust other component values as required.

4. Build the filter. There is no alignment - steps 2 and 3 replaced all that.

5. Use the VNA to confirm that it works exactly as predicted. Have lunch.

You can see those results in the VNA documentation.

This is the professional approach to RF design: compute, measure components, compute again, and build... and it *will* work, because you've left almost nothing to chance. Until now, this approach had not been open to amateurs because we didn't have the necessary test equipment. To me, that is the real power of this instrument.

For some years, I've been trying to develop this approach, but have had to rely on the goodwill of a friend who could make measurements using his lab VNA at work. But obviously there have been limitations on the kinds of things that could be measured - they had to be small enough to fit in a briefcase, and they had to be completed to the extent that they were plug-and-play - so there have been no antenna measurements, and no measurements on work in progress. I'm free from those limitations now, up to at least 50MHz... and the way is being opened to make equally good measurements on the higher amateur bands.

Meanwhile my friend has noticed that he won't have access to the lab forever, so guess what - he has built himself an N2PK VNA too! Like N2PK, we're struggling to identify any significant differences in accuracy between the two instruments.

A compact, lightweight and inexpensive VNA also opens up completely new possibilities for field measurements that even a commercial VNA cannot make, because it's too big, heavy, delicate and valuable to be moved out of the lab.

When the weather improves, I plan to take the N2PK VNA outside with a laptop and a small battery pack, and to do some really detailed antenna work. Of the three objects to be carried around, by far the smallest and lightest will be the VNA.

I hope that gives you a real picture of the new possibilities that are opening up.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

1248. Re: meter sensitivity versus internal resistance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 13:16:44 UTC
From: "Michael A. Terrell" <mike.terrell@earthlink.net>
Message-ID: <402CCE31.44E5A2C@earthlink.net>
Source record: 28635

Uwe Langmesser wrote:
>
> Is there a simple relationship between a meters internal resistance and its
> sensitivity (ohms per volt).
>
> Maybe this is trivial but I don't see it.
>
> Uwe

The higher the resistance, the lower the operating current, but there
is no simple formula.

You need a current limiting resistor in series with the meter, and a
known supply voltage. Start at the maximum resistance, and slowly reduce
it till you have a full scale deflection. Disconnect the voltage, then
measure the total resistance of the meter and adjustable resistor. Then
use Ohm's law to determine the meter's sensitivity. Its simple and only
takes a couple minutes to test. Use a low voltage, and it is a good idea
to have different variable resistors to put in series. Start with a
higher value resistor than you think you need, so you don't damage the
meter, and work your way down. I use an expensive, six decade resistor
with an adjustable regulated power supply. I can adjust the resistance
in steps, from zero ohms to one megohm in one ohm steps.

--
We now return you to our normally scheduled programming.

Michael A. Terrell
Central Florida

1249. Re: FS:NE/SA602AN

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 14:17:58 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <q05Xb.29547$fV5.625341@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28636

The price is good.....your 10 up price beats Future's price! If I didn't have a couple hundred of them, I would order them myself!

Pete

"Don Sands WA5OYG" <dsands@ev1.net> wrote in message news:eec6b79a.0402122120.5aeee275@posting.google.com...
> New old stock Philips NE/SA602AN Balanced Mixers $1.50 ea or 10 for
> $12.50 plus $2.00 freight. Also NE614AN FM IF Chips $1.50 ea or 10 for
> $12.50
> Thanks

1250. Re: meter sensitivity versus internal resistance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 14:20:47 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c0imfvbmi1@sparta.btinternet.com>
Source record: 28637

> Uwe Langmesser wrote:
> >
> > Is there a simple relationship between a meters internal resistance and
its
> > sensitivity (ohms per volt).
> >
============================

Yes. Couldn't be more simple.

It is the internal resistance of the meter divided by the voltage range the
meter is set to.

When the meter is at full-scale deflection the current flowing through the
meter is always (Voltage Range) / (Ohms per Volt).

The internal resistance of the meter, on any voltage range, is the
resistance of the moving coil plus the series meter-multiplying resistance.

Reg, G4FGQ

1251. Re: meter sensitivity versus internal resistance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 14:29:03 UTC
From: Incognito <BLB@sero.net>
Message-ID: <Qa5Xb.15874$IF1.10082@fed1read01>
Source record: 28638

See URL:
http://www.tpub.com/neets/book16/68e.htm

Too lengthy to repeat here -- but gives the full explanation

--
Incognito By Necessity (:-(

If you can't convince them, confuse them.
- - -Harry S Truman

"Uwe Langmesser" <outhouse@midcoast.com> wrote in message
news:BC51C484.D06E%outhouse@midcoast.com...
> Is there a simple relationship between a meters internal resistance and
its
> sensitivity (ohms per volt).
>
> Maybe this is trivial but I don't see it.
>
> Uwe
>

1252. Re: meter sensitivity versus internal resistance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 15:49:06 UTC
From: N2EY@AOL.COM
Message-ID: <c2356669.0402130749.66874c52@posting.google.com>
Source record: 28639

Uwe Langmesser <outhouse@midcoast.com> wrote in message
news:<BC51C484.D06E%outhouse@midcoast.com>...
> Is there a simple relationship between a meters internal resistance and its
> sensitivity (ohms per volt).

No.
>
> Maybe this is trivial but I don't see it.
>
Not trivial at all. The internal resistance of a meter depends on the
type of meter (D'Arsonval, moving iron, electrodynamometer, etc.) and
its design.

As a simple example, imagine two identical 0-1 mA D'Arsonval meters.
Now replace the springs in one of the meters with new ones that
require more force. The meter with the "stronger" springs will need
more current for fullscale deflection even though it has the same
internal resistance.

There *is* a relationship between a milliammeter's fullscale reading
and the ohms-per-volt when it is used with a series resistor to make a
voltmeter.

Ohms-per-volt = 1/current for full scale deflection (in amps)

So, when used with the appropriate series resistor(s):

a 0-1 mA meter will give 1000 ohms-per-volt
a 0-100 uA meter will give 10,000 ohms-per-volt
a 0-50 uA meter will give 20,000 ohms-per-volt

etc.
73 de Jim, N2EY

1253. Re: Vavle type rfc's

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 16:26:33 UTC
From: SB <abc@abc.com>
Message-ID: <c0itro$o48$1@sparta.btinternet.com>
Source record: 28640

Gregg <nospam@unknown.org> wrote in message
news:OL%Wb.36986$QX4.29147@clgrps13...
> Just see if your local supplier can bring in Hammond equipment. They have
> a 2.5mH inductor.
>
> --
> Gregg

Thanks Greg, but we only have national suppliers here and non list this component in their on-line product listings. I've tried google.co.uk but to no success.

SB.

1254. Re: Radio noise

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 17:05:34 UTC
From: manitoumagic@aol.commuter
Message-ID: <20040213120534.00995.00000752@mb-m10.aol.com>
Source record: 28641

>I have a boat at a marina,I cannot receive any AM radio using Marina
>power.
>The audio is one continuous buzz across the dial.

I'll bet you have a 110V/12V charger/converter on board that's on whenever your shore power is connected...

1255. Re: meter sensitivity versus internal resistance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 18:26:39 UTC
From: k7itm@aol.com
Message-ID: <3200347.0402131026.5eb398b5@posting.google.com>
Source record: 28642

Think "Ohm's Law." The meter movement responds to a current. To read
voltage, you put a resistor in series with the meter movement so that
V(full scale) = R(total)*I(meter, full scale). R(total) is the sum of
the meter's internal resistance and the external series resistor. So
a 1mA meter movement always gives 1kohms/volt, and a 20uA meter
movement gives 50kohms/volt.

Cheers,
Tom

Uwe Langmesser <outhouse@midcoast.com> wrote in message
news:<BC51C484.D06E%outhouse@midcoast.com>...
> Is there a simple relationship between a meters internal resistance and its
> sensitivity (ohms per volt).
>
> Maybe this is trivial but I don't see it.
>
> Uwe

1256. Re: Vavle type rfc's

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 19:32:59 UTC
From: k35454 <k35454@direct.ca>
Message-ID: <7LKdna-EFfbou7Dd4p2dnA@look.ca>
Source record: 28643

"SB" <abc@abc.com> wrote in message
news:c0itro$o48$1@sparta.btinternet.com...

Gregg <nospam@unknown.org> wrote in message
news:OL%Wb.36986$QX4.29147@clgrps13...
> Just see if your local supplier can bring in Hammond equipment. They have
> a 2.5mH inductor.
>
> --
> Gregg

Thanks Greg, but we only have national suppliers here and non list this
component in their on-line product listings. I've tried google.co.uk but to
no success.

SB.

I have quite a few... most have four pies, some may have 5. They are the
kind that were used in amateur construction in the 40's to the 70's. I can
supply, but like my dial bulbs, it would cost more for the postage than for
the chokes !! john m. VE7AFN.
my sia

1257. B&W 850A coil

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 19:35:25 UTC
From: W7CXA <w7cxa@arrl.net>
Message-ID: <102q9nm7nc78q4d@corp.supernews.com>
Source record: 28644

I was given a B&W 850A coil recently that is lacking the spacer material on the close wound part of the assembly. What is the best way to replace that material? It seems to have deteriorated through the years. It is in great shape except for that.

Thanks,
Andy W7CXA

1258. Do these things exist?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 22:04:44 UTC
From: Richard <nearlynews_email@ntlworld.com>
Message-ID: <c0jhjv$17bc3e$1@ID-150848.news.uni-berlin.de>
Source record: 28645

Does a product exist that takes an FM IF signal input at 10.7Mhz and
produces audio output, having employed digital technology for selectivity
and demodulation?

1259. Re: Do these things exist?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 22:51:45 UTC
From: dplatt@radagast.org
Message-ID: <102ql81qlbka58b@corp.supernews.com>
Source record: 28646

>Does a product exist that takes an FM IF signal input at 10.7Mhz and
>produces audio output, having employed digital technology for selectivity
>and demodulation?

Dig around for some of the "software radio" projects.

http://www.gnu.org/software/gnuradio/gnuradio.html
http://ourworld.compuserve.com/homepages/jmitola/
http://volodya-project.sourceforge.net/SR/sr.php

There are plenty of others.

Basically, you take the IF signal, bandpass filter it down to a
reasonable bandwidth (as required to cover whatever modulation you're
dealing with), and then digitize it. The digitizer needs to have
enough bits of resolution to handle the range of IF signal amplitudes
you're expecting to see (adding an AGC in front can help matters a
lot), and needs to run at a sampling rate which is greater than twice
the IF bandwidth. You don't have to run the ADC at twice the sampling
rate of the IF signal frequency - just at twice its bandwidth
("undersampling").

Then, pull the data into your CPU and use FFT, lapped transforms,
wavelets, or whatever you want/need to do the demodulation.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

1260. Re: Do these things exist?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-13 22:57:39 UTC
From: R J Carpenter <rcarpen@erols.com>
Message-ID: <402d5660$0$3077$61fed72c@news.rcn.com>
Source record: 28547

> >Does a product exist that takes an FM IF signal input at 10.7Mhz and
> >produces audio output, having employed digital technology for
selectivity
> >and demodulation?

A number of the better German car radios use this technique. Motorola and
Visteon/Ford are promoting chips which do this.

1261. Re: Radio noise

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 00:53:04 UTC
From: amdx <amdx@att.net>
Message-ID: <QjeXb.15953$hR.467144@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28548

Good suggestions guys, but I don't have any battery chargers, batterys or converters on the boat.
Just plain old 120v wiring.
I have walked the marina and the noise on my portable radio gets loud when I hold the radio close to each power pedastal.

"amdx" <amdx@att.net> wrote in message news:%WVWb.26218$fV5.565541@bgtnsc04-news.ops.worldnet.att.net...
> I have a boat at a marina,I cannot receive any AM radio using Marina
> power.
> The audio is one continuous buzz across the dial.
> A battery operated radio is ok
> FM reception is ok.
> I took a scope down and looked at the A.C. waveform, the signal has no
> visable noise riding on it, however the wave peaks are flatened. It is not
> hard
> clipped, it just doesn't have a nice round peaks.
> I'm looking for suggestions on how to filter the AC so my
> radio will pick up AM.
>
> Thanks
> Mike
>
>

1262. Re: Radio noise

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 01:20:53 UTC
From: dplatt@radagast.org
Message-ID: <102qtvlnn341nab@corp.supernews.com>
Source record: 28549

>Good suggestions guys, but I don't have any battery chargers, batterys or
>converters on the boat.
>Just plain old 120v wiring.
>I have walked the marina and the noise on my portable radio gets loud
>when I hold the radio close to each power pedastal.

That sounds, then, as if "hash" from other peoples' battery chargers, switching power supplies, and perhaps the dock lighting systems is getting back into the power mains. Not terribly unusual.

Corcom, Delta, and other manufacturers make modular RFI/EMI filters which you might be able to use. They're usually built into a sealed metal can; they usually have three leads or push-on tabs for connection to the incoming power (and ground) and a pair of leads or tabs for the filtered AC power. I've bought them at local electronics-surplus stores, hamfest fleamarkets, etc. for a few dollars each.

One such is http://sales.goldmine-elec.com/prodinfo.asp?prodid=6379 - a 10-amp LC-type line filter, which they normally sell for $5 and have on sale for $2.95 (plus shipping of course).

You could wire this (or a similar one) up in a metal or plastic box, with a line cord, a duplex outlet, and a circuit breaker or fuse, and have yourself a pretty nice little line-noise-reduction device.

It might not be a bad idea to add some ferrite beads around the wires, as well, to help attenuate the higher-frequency RF noise which might be present.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

1263. BPL WILL KILL HF HOMEBREWING IN TWO YEARS!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 03:20:38 UTC
From: The Eternal Squire <eternalsquire@comcast.net>
Message-ID: <6Z6dna9eYLmaELDdRVn-hA@comcast.com>
Source record: 28550

Hello, everyone.

Today, the FCC has decided to allow the manufacturers of BPL the ability to regulate
thier emissions under Part 15 so that they do not interfere with other services on the
HF bands (2 Mhz - 30 Mhz).

Given the way we have all percieved business to operate to benefit the stockholders
rather than the public, it seems to me that the demons of the underworld would sooner
be able to enjoy ice skating, than for BPL to be willing to police itself.

And, as you well know, FCC Chairman Powell is a thirty-something Bush political
appointee and an ideologue of the first order. He has sold the soul of Amateur Radio
down the river, all in the name of business above all other things. He is an examplar
of all that is presently wrong with the Bush administration.

I would strongly recommend that we all vote a Democratic into the White House, just
so that said person can replace Powell with someone who will let us live.

In the meantime, sell your gear boys and girls, because Ham on the HF bands is about
to go QRT from massive interference.

The Eternal Squire

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.564 / Virus Database: 356 - Release Date: 1/19/04

1264. Re: BPL WILL KILL HF HOMEBREWING IN TWO YEARS!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 03:35:22 UTC
From: Harold Burton <hwburton@cableone.net>
Message-ID: <102r5p1fu42q05f@corp.supernews.com>
Source record: 28551

"The Eternal Squire" <eternalsquire@comcast.net> wrote in message
news:6Z6dna9eYLmaELDdRVn-hA@comcast.com...
> Hello, everyone.
> I would strongly recommend that we all vote a Democratic into the White
> House, just
> so that said person can replace Powell with someone who will let us live.

Oh, Hell no, I was once a young liberal Democrat (voted for JFK) but have
seen
the nation eroded over the years to it's present level. I'd vote for a
Frenchman
ere I'd vote for another Democrat.

HWB

1265. Re: BPL WILL KILL HF HOMEBREWING IN TWO YEARS!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 04:29:57 UTC
From: shephed <smokey@twist1up.com>
Message-ID: <9vhXb.830$Hd6.168@fe1.columbus.rr.com>
Source record: 28552

You damn "Bush haters" show up everywhere. I'll be glad when the election is over so you idiots will "Move On" and get a life.

Can we go back to Ham Radio now kids?

"The Eternal Squire" <eternalsquire@comcast.net> wrote in message news:6Z6dna9eYLmaELDdRVn-hA@comcast.com...
> Hello, everyone.
>
> Today, the FCC has decided to allow the manufacturers of BPL the ability to
> regulate
> thier emissions under Part 15 so that they do not interfere with other
> services on the
> HF bands (2 Mhz - 30 Mhz).
>
> Given the way we have all percieved business to operate to benefit the
> stockholders
> rather than the public, it seems to me that the demons of the underworld
> would sooner
> be able to enjoy ice skating, than for BPL to be willing to police itself.
>
> And, as you well know, FCC Chairman Powell is a thirty-something Bush
> political
> appointee and an ideologue of the first order. He has sold the soul of
> Amateur Radio
> down the river, all in the name of business above all other things. He is
> an examplar
> of all that is presently wrong with the Bush administration.
>
> I would strongly recommend that we all vote a Democratic into the White
> House, just
> so that said person can replace Powell with someone who will let us live.
>
> In the meantime, sell your gear boys and girls, because Ham on the HF bands
> is about
> to go QRT from massive interference.
>
> The Eternal Squire
>
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>
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>

>
>
> ---
> Outgoing mail is certified Virus Free.
> Checked by AVG anti-virus system (http://www.grisoft.com).
> Version: 6.0.564 / Virus Database: 356 - Release Date: 1/19/04
>
>

1266. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 07:10:01 UTC
From: John O'Mara <johnnyo@austarmetro.com.au>
Message-ID: <402dc9c8@news.comindico.com.au>
Source record: 28553

I started with VK3BHR's very inexpensive, easy to build one:

http://ironbark.bendigo.latrobe.edu.au/%7Erice/

I am sure Phil would email you a version of the software that displays your
own callsign at startup.

VK3UBN

"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040209003438.01632.00000652@mb-m03.aol.com...
> In article <102dbbcdvmcar90@corp.supernews.com>, SWbeginner
> <SWbeginner@nowhere.com> writes:
>
> >I am looking to build a frequency counter, or buy an inxepensive kit.
> >Any recommendations?
> >Needs: low cost, few parts count
>
> Recommendations depend on your intended function.
>
> The general-purpose counter from Almost All Digital Electronics is
> good, ready-built with LCD for about $40 (give or take depending on
> optional backlight or BIG - actually slightly bigger - LCD, temp.
> compensated timebase oscillator, etc.). Try examining
> www.aade.com. A good Puget Sound area little company.
>
> A "very low parts count" of one would be the CSI 6100 general
> purpose counter from Circuit Specialists, Inc., for $129 ready to
> use on either 115 or 230 VAC lines. I have one of those very
> no-frills units and it works (just got it as a backup on the bench).
> I've seen better displays than this one has but I can't fault the
> price for a complete unit ready-to-go.
>
> To roll your own counter-timer-etc., the Intersil ICM7216B 28-pin
> DIP will count to 10 MHz by itself and drive up to 8 LEDs, has an
> on-board timebase oscillator and function switching internal. The
> datasheet has several schematics, fairly complete, for making
> your own. Add a divide-by-10 or divide-by-100 digital prescaler
> and the input frequency range can extend to 100 or 1000 MHz.
> The only problem with that is that Intersil is going to OBSOLETE
> the critter and is apparently out of production (unless you have a
> very large quantity to order, like many thousands).
>
> The Intersil ICM7226B is, or was, a fancier version of 7216, having
> a 40-pin DIP. It seems to be all gone except on paper. Some

> distributors may still have some 7216s around in stock. I have
> datasheets for both and can forward them in e-mail attachments.
>
> Several websites have nice pages on using the Microchip PIC
> 16F84 or 16F71 (AADE uses the '71) as a complete counter and
> display driver for an LCD, extra transistor things for LEDs, using
> only 3 ICs total (plus a prescaler to go higher than about 35 MHz
> maximum with the PIC). That arrangement is nice because one
> can program in "offsets" of the count such as reading a local
> oscillator directly, then adding/subtracting the IF to get the antenna
> input frequency. The only problem there with rolling your own is
> that, while the PIC development software is free, and program
> boards are low cost, if you aren't used to Assembler-like language
> and coding at the machine level, you have a large learning curve
> to climb. That may be worth it since microcontrollers are VERY
> versatile, can do amazing things with some creativity, even put
> ASCII legends of all kinds on the LCD screen besides the basic
> functions of totalizing a count. PICs of many numbers abound at
> distributors such as Digikey and Mouser.
>
> To use lots of ICs of the "74" family, two to three per digit plus the
> timebase divider, would be the last alternative. The 74LS190 to
> 74F190 series is still around but the BCD versions are getting
> scarce; binary versions (count of 16) are there but the decade ones
> are apparently being dropped for new production. 74LS160 to
> 74F160 in the same boat. There is even a CD4nnn which has a
> whole BCD counter, 4-bit latch, 7-segment decoder-driver in a single
> DIP that will work up to about 4 MHz, higher with an input prescaler
> (I have to search my PDFs for the exact number).
>
> The IC makers have been winnowing their available types over the
> last decade, tightening their belts, dropping some things that did
> not sell well (despite their usefulness to hobbyists), adding new
> things and getting into the SMT area with a rush that started in the
> late 1980s. Expect more type dropouts. Adapt, improvise... :-)
>
> Len Anderson
> retired (from regular hours) electronic engineer person

1267. Freq-Mite on regenerative RX?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 11:38:42 UTC
From: n1jpr@hotmail.com
Message-ID: <95a201e0.0402140338.70f2e0c9@posting.google.com>
Source record: 28554

I am putting together a regenerative HF receiver, and I am considering frequency readout options. Did anybody ever try the Small Wonder Labs FREQ MITE on a solid state regen, i.e. a radio generating just a little RF?

I guess the challenge is feeding it enough RF (~ 0.2V, high-Z) without taxing the detector too much.

Should a pickup inductor in the vicinity of the tank circuit be enough to provide the voltage, or should I plan to add a RF amp?

TIA

Spammy

1268. Re: LED PIC based counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 11:43:27 UTC
From: Richard Hosking <richardh@iinet.net.au>
Message-ID: <402e0ab0$0$1751$5a62ac22@freenews.iinet.net.au>
Source record: 28555

Dale Parfitt wrote:

>>
>>..I appreciate all the comments. The glass cases of the LCD- aside from
>
> being large, is a bit fragile. This is going in a very small trail ready
> radio- that may have to survive falls from 3000' rock cliffs. Already lost
> an LCD that way.
>
> Dale W4OP
>
Wow
I suspect not much would survive that sort of fall
My counter at http://members.iinet.net.au/~richardh/VK6BRO.htm
takes less than 10 mA
The LCD module is probably as rugged as a LED setup, particularly if you
have to mount individual displays and drivers opn a board
Unfortunately I have sold all the current boards but the software and
circuitry is there.
It uses a AVR rather than a PIC

Richard

1269. Re: LED PIC based counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 13:23:48 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <102s8b895l42t6f@corp.supernews.com>
Source record: 28556

At first I thought you wanted a counter, but it sounds more like a frequency display for a rig is what you are looking for.

If you're madly in love with LEDs, you may want something like that one digit counter that I think was in QST a few years back. Understand that LEDs are current hungry and require relatively complex support circuitry compared to LCDs. You can reduce both of these by cutting down the number of digits. You can also add some complexity, either in software or circuitry, to help with the current drain, but finding something that will likely work with your radio is improbable .. to get the combination you are going to have to do some of the design work yourself. You will also be challenged in trading off the current for brightness. I suspect (can't say I know for sure) that making an LED display work at low current at a brightness level you could use outdoors in the daytime is going to be something of a problem.

That being said, what about something like Dave Fifield's AFA or Dave Benson's Freq-Mite? This gets you way smaller and lighter than your LEDs, and certainly no less durable. And the current consumption will be orders of magnitude less than even the most carefully implemented LEDs. You don't get the warm, red glow, but you get the frequency in a fraction of the size/weight/current. And for twenty bucks you avoid the whole design/parts procurement exercise.

..

"Dale Parfitt" <par@parelectronics.com> wrote in message
news:EBYWb.2183$wD5.1869@nwrddc03.gnilink.net...
>
> "xpyttl" <xpyttl_nospam@earthling.net> wrote in message
> news:102ogffh3hpv6b8@corp.supernews.com...
> > "Tim Wescott" <tim@wescottnospamdesign.com> wrote in message
> > news:102oauud4jk0i52@corp.supernews.com...
> >
> > > But first the obligitory assesment of assumptions: Why are LCD
displays
> > not
> > > an option? Could you drive an LCD from your PIC? I've seen info on
> this
> > > from the LCD manufacturers; it looks quite doable from a PIC.
> >
> > I was wondering that myself. It's a whole bunch lower power than LEDs,
> > which seemed to be a requirement, and the circuitry is a pile simpler.
> The
> > one requirement he did have was "durability" that maybe you could argue

> LEDs
> > had a leg up on. Well, maybe with those teeny LED displays you could
keep
> > the size smaller than an LCD, but I suspect you would more than make up
> for
> > it in drive circuitry, unless maybe he's thinking surface mount.
> >
> > Oh, and driving an LCD is a piece of cake from a PIC.
> >
> > ..I appreciate all the comments. The glass cases of the LCD- aside from
> being large, is a bit fragile. This is going in a very small trail ready
> radio- that may have to survive falls from 3000' rock cliffs. Already lost
> an LCD that way.
>
> Dale W4OP
> >
> >
>
>

1270. Re: LED PIC based counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 13:28:46 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <102s8u4hcap1i03@corp.supernews.com>
Source record: 28557

"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040213000244.01692.00000572@mb-m18.aol.com...
> In article <102oauud4jk0i52@corp.supernews.com>, "Tim Wescott"
> <tim@wescottnospamdesign.com> writes:

> NONE of the above is "trivial" nor any sort of "cake" if you've never
> worked with microcontrollers or their development systems before.
> Almost ANYTHING "doable" can be done but development time and
> resulting learning curves are hard to fund at the home hobbyist level.

Au contraire!

Well, I suppose if you are scared to death of solid state electronics and computers, then perhaps it's really hard. But in this day and age a huge fraction, bordering on most, amateur radio projects involve some sort of microcontroller. This isn't some comspiracy, they make the whole project simpler, less expensive, and more flexible.

Granted, there is a learning curve if you've never done it before, but I would expect that someone who wasn't totally terrified could learn enough to make the sorts of changes he might need to an off the shelf project, build the programming hardware, and get the project working in less time/effort/money than simply getting a reasonable number of LED digits wired and driven!

..

1271. Do we have the technology to do this?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 16:39:52 UTC
From: Richard <nearlynews_email@ntlworld.com>
Message-ID: <c0liug$18kjmn$1@ID-150848.news.uni-berlin.de>
Source record: 28558

Here in UK , like probably elsewhere in the world, FM stations need to be seperated 200Khz to avoid mutual inteference. A good RX ought with good IF filtering ought to be able to seperate two 200 Khz spaced FM signals I think.
But of course stations are only 100Khz apart so it nigh on impossible to seperate stations under these conditions as far as I know.

Well, if filtering won't sort out the problem, can you seperate the stations any other way? Can you make a circuit that responds only to the wanted station when it is just fractionally stronger than the unwanted station? That's the only thing I can think of, apart from antenna solutions. Do we have technology these days to do what we thought was impossible in this case?

1272. Component search

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 16:50:50 UTC
From: Dave Pauley <dave.pauley@btinternet.com>
Message-ID: <c0ljl9$fj5$1@sparta.btinternet.com>
Source record: 28559

Can anyboby point me at a european supplier for a 74FST3235 or equivalent like PI5B3253 or PI5V331. I have found suppliers in the US, but they want
£25 postage to supply a part consing a few $.

1273. t

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 20:13:33 UTC
From: sucker <sucker@mail.subrec.org>
Message-ID: <NjvXb.1279$Hg4.673@chiapp18.algx.net>
Source record: 28560

sucker@mail.subrec.org
spam filter test

1274. Re: Recomendations for a VNA

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 20:23:26 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <dg0t20tnpgd5l7ke4m1oo8sk72js4p6l2a@4ax.com>
Source record: 28561

On Fri, 13 Feb 2004 09:01:38 +0000, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> wrote:

>Harold E. Johnson wrote:
>>
[snip]
>
>I hope that gives you a real picture of the new possibilities that are
>opening up.

[snip]

Thanks, both! Sounds like a must-have now you've explained all these
remarkable capabilities. I shall await developments on parts
availability with great interest....

--

The BBC: Licensed at public expense to spread lies.

1275. Re: LED PIC based counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 20:48:44 UTC
From: averyfineman@aol.com
Message-ID: <20040214154844.08626.00003102@mb-m27.aol.com>
Source record: 28562

In article <102s8u4hcap1i03@corp.supernews.com>, "xpyttl"
<xpyttl_nospam@earthling.net> writes:

>"Avery Fineman" <averyfineman@aol.com> wrote in message
>news:20040213000244.01692.00000572@mb-m18.aol.com...
>> In article <102oauud4jk0i52@corp.supernews.com>, "Tim Wescott"
>> <tim@wescottnospamdesign.com> writes:
>
>> NONE of the above is "trivial" nor any sort of "cake" if you've never
>> worked with microcontrollers or their development systems before.
>> Almost ANYTHING "doable" can be done but development time and
>> resulting learning curves are hard to fund at the home hobbyist level.
>
>Au contraire!
>
>Well, I suppose if you are scared to death of solid state electronics and
>computers, then perhaps it's really hard.

Not I. Made my living, paid the bills for over four decades plus using,
designing with semiconductors. :-)

Try a dose of realistic thinking in terms of hardware, based on the
time available for hobby projects. Time. That most precious of all
personal commodities.

Programming a microcontroller is not trivial. It requires a new skill,
of outlining a sequence of events governed by decision points of
states, of (at least) being familiar with instructions/commands
recognized by the micro. While the PIC development program is
free, the ability to use the program is not automatic in download.
One MUST become familiar with "Assembler level" programming, of
including every single sequential command and decision point needed
by the program application. Having done that sort of thing primarily
for hobby purposes for over two decades, I find it both fun and
fascinating in total control of a micro's actions. My only complaint
there is that there is no standardization of instructions between
manufacturers...the "dialects" require small learning curves each time
there is a switch of micro families.

The most convenient was to apply a microprocessor or micro-
controller is to get one with the program already burned in. Saves an
enormous amount of development time...but does not do any good for
personal programming experience, only in the installation of the micro.

It's hard to beat the AADE unit (available for any conversion scheme,
direct- to triple-conversion) for applying a relatively cheap ready-built

to a frequency indicator. www.aade.com

>But in this day and age a huge
>fraction, bordering on most, amateur radio projects involve some sort of
>microcontroller.

Yes and no. :-) That depends on the source of information for the project. Magazines don't like to include pages of a PIC program since those require many pages of expensive paper (which needs advertising space sold to make it "cheap"). It isn't immediately flashy and the program writers don't always include Comments in source code sufficient to make the program flow clear at first reading.

Ready-built, off-the-shelf amateur radio equipment DOES use one or more microcontrollers internally. You cannot truly qualify that "most" hobby projects use them. :-)

>This isn't some comspiracy, they make the whole project
>simpler, less expensive, and more flexible.

Totally agreed. However, in fairness, use of a microcontroller in a ham project is NOT traditional analog circuitry (that some old-timers insist is the "only" kind of "radio"). It does NOT exemplify the mass of mechanical structures used in 3 and 4 decade old project pictures looked at many times in old handbooks...looked at in emotional awe and wonderment. Microcontrollers are NOT traditional components and have functions unrelated to physical mechanics that they often replace. Different. Minds have to adapt to NEW ways to do things.

>Granted, there is a learning curve if you've never done it before, but I
>would expect that someone who wasn't totally terrified could learn enough to
>make the sorts of changes he might need to an off the shelf project, build
>the programming hardware, and get the project working in less
>time/effort/money than simply getting a reasonable number of LED digits
>wired and driven!

Of course. :-) The pep-rally over-confidence syndrome...one can do anything with a "positive outlook"...immediately...no problems at all, right? :-)

In a remote way, yes. Unknowns are not a "terror" to everyone. They should be just things unknown that must be learned in order to apply them. That takes some skull sweat at becoming familiar and such study takes TIME. Such learning time seldom provides immediate solutions to a present project but it has incalculable worth in being able to apply the micro techniques to all sorts of future problems.

Why bash anyone for wanting to use LEDs instead of LCDs? There are advantages to each kind of display. For a personal project, I would think that it is up to the individual to determine individual desires. Is there something "wrong" with individualism? I think not.

I'm working on inventing anti-gravity...but something's holding the project down.

Len Anderson
retired (from regular hours) electronic engineer person

1276. Re: Do these things exist?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 21:28:06 UTC
From: Michael <mpendley2@austin.rr.com>
Message-ID: <GpwXb.13509$ng6.1305@fe2.texas.rr.com>
Source record: 28563

Try www.flex-radio.com

"Richard" <nearlynews_email@ntlworld.com> wrote in message
news:c0jhjv$17bc3e$1@ID-150848.news.uni-berlin.de...
> Does a product exist that takes an FM IF signal input at 10.7Mhz and
> produces audio output, having employed digital technology for selectivity
> and demodulation?
>
>
>

1277. Re: meter sensitivity versus internal resistance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 21:47:18 UTC
From: Uwe Langmesser <outhouse@midcoast.com>
Message-ID: <BC540192.D30C%outhouse@midcoast.com>
Source record: 28564

You are right Tom.

But my question was that when the sensitivity, for example 1 kohms/volt, is known, can one then also know, without further measurement, the internal resistance.

And from what I gather the answer to that question is NO.

thank you all

Uwe

in article 3200347.0402131026.5eb398b5@posting.google.com, Tom Bruhns at k7itm@aol.com wrote on 2/13/04 1:26 PM:

> Think "Ohm's Law." The meter movement responds to a current. To read
> voltage, you put a resistor in series with the meter movement so that
> V(full scale) = R(total)*I(meter, full scale). R(total) is the sum of
> the meter's internal resistance and the external series resistor. So
> a 1mA meter movement always gives 1kohms/volt, and a 20uA meter
> movement gives 50kohms/volt.
>
> Cheers,
> Tom
>
> Uwe Langmesser <outhouse@midcoast.com> wrote in message
> news:<BC51C484.D06E%outhouse@midcoast.com>...
>> Is there a simple relationship between a meters internal resistance and its
>> sensitivity (ohms per volt).
>>
>> Maybe this is trivial but I don't see it.
>>
>> Uwe

1278. Re: Do we have the technology to do this?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 22:02:41 UTC
From: Roger Leone <raleoneTAKEOUT@sbcglobal.net>
Message-ID: <5WwXb.25462$0s3.3752@newssvr25.news.prodigy.com>
Source record: 28565

Richard:

Stations can be separated with a directional antenna.

Roger K6XQ

1279. Re: meter sensitivity versus internal resistance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 22:29:42 UTC
From: averyfineman@aol.com
Message-ID: <20040214172942.05957.00000466@mb-m26.aol.com>
Source record: 28566

In article <BC540192.D30C%outhouse@midcoast.com>, Uwe Langmesser
<outhouse@midcoast.com> writes:

>But my question was that when the sensitivity, for example 1 kohms/volt, is
>known, can one then also know, without further measurement, the internal
>resistance.
>
>And from what I gather the answer to that question is NO.
>
>thank you all

In actual practice, d'Arsonval meters vary in internal resistance.
The "Ohms/Volt" rating is only approximate.

D'Arsonval meters consume DC power dependent on the meter
motor (the coil winding driving the needle) position. Miniscule power
to be sure but finite power demand. If the power of movement and
display is the criterion for "sensitivity," then the meter resistance
must be measured or known. That is imperative if the meter is to
be shunted for a higher actual current indication.

A millivoltmeter can measure the meter motor voltage drop at a
given current through it. Law of Resistance will then apply to find
meter motor resistance from current and voltage. To shunt a
meter for higher current the external shunt resistor must have a
value equal to the meter motor voltage drop divided by the total of
desired current minus the meter current. At high current full scales
the shunt resistance becomes quite low and the meter motor
resistance is negligible for accuracy of high current. At low current
full scales approaching that of a meter alone, the meter motor
resistance is an appreciable part of the shunt resistance.

In voltmeter applications, a series resistor is approximated by the
"Ohms per Volt" value on relatively high full-scale ranges. That series
resistor should be (for precision) the quantity total voltage drop minus
the meter motor voltage drop, all divided by the meter current.

Fortunately, the meter motor resistance is small and the voltage drop
is quite small compared to the total needed voltage drop. The difference
in voltmeter resistance values between approximate and precision
becomes less as the meter current becomes less for a given full scale.
Note: For full scale voltmeter readings of 100 V and up, the approximation
of "Ohms/Volt" is quite good...one needs the meter motor resistance for
an accurate voltmeter indication of 5 V and below to fit modern digital
logic rail voltages.

One can expect most d'Arsonval meters to exhibit about 50 mV motor
drop at full scale...but could be almost any value from 20 to 100 mV.

Len Anderson
retired (from regular hours) electronic engineer person

1280. adjustable coils

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 22:52:55 UTC
From: C Edgar <ehunt@dslextreme.com>
Message-ID: <102t9m3bss86r38@corp.supernews.com>
Source record: 28567

When a variable coil such as a TOKO is spec'd as 150 nH, I assume thats the max value with the slug fully inserted. How must range adjustment is there in these coils,i.e.what would the min value be with the type43 ferrite slug fully backed out ? Also I'm modifying this slug tuned coil from 680 microhenries down to 150 nh, so I believe that should be about four turns of a much larger wiresize than the really fine wire on there now. Any comments appreciated. Am building the 200 watt fet amplifier in this month's QEX. Having a very difficult time locating the low loss ceramic ATC SMT caps, need 19ea 100pf and 7ea 300 pf caps. Apparently Aerovox won't respond to anything other than a large order.

1281. Re: Do we have the technology to do this?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-14 22:53:54 UTC
From: R J Carpenter <rcarpen@erols.com>
Message-ID: <402ea6f9$0$3104$61fed72c@news.rcn.com>
Source record: 28568

"Richard" <nearlynews_email@ntlworld.com> wrote in message
news:c0liug$18kjmn$1@ID-150848.news.uni-berlin.de...

> Can you make a circuit that responds only to the wanted
> station when it is just fractionally stronger than the unwanted station?

That's called "capture ratio". Better receivers have lower numbers -
smaller difference required to suppress unwanted station. They have numbers
like a VERY few dB.

To get this you need very flat IF within the passband - no ripples in
response.

A wideband limiter and wide and very linear discriminator.

The National "Criterion" series of tuners from 50 years ago were among the
first to attempt this. IIRC, there were HH Scott tuners like this as well.

All bets are off if you're trying to recover stereo.

73 de bob w3otc

1282. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 01:04:29 UTC
From: Uwe Langmesser <outhouse@midcoast.com>
Message-ID: <BC542FD0.D310%outhouse@midcoast.com>
Source record: 28569

Re: parameters governing the power rating and the frequency range of an SWR meter

I am reading the article which was sent to me as a response to my question about SWR meters and their construction. The article, a section of the test equipment chapter of the RSGB VHF/UHF Handbook, explains the construction of a reflectometer for 2m.

The main line pick up tube is selected to match the impedance of the antenna line whereas the impedance of the sampling line can be more arbitrary and just has to be matched up with the proper terminating resistor.

So much for impedance matching.

The article did not explain very much what the limitation of the device with regards to the power and the used frequency are.

Ok, the power seems to be limited by the power rating of the resistors terminating the sampling line.
But then what parameter(s) are reponsible for the frequency rating of the device.

I am asking because at a local hamfest I picked up reflectometer parts and now I wonder if I can change those to fit my needs (144MHz and low power).

regards Uwe

1283. Re: t

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 01:35:53 UTC
From: k35454 <k35454@direct.ca>
Message-ID: <lrKdnefSzcRjUbPdRVn-sw@look.ca>
Source record: 28570

"sucker" <sucker@mail.subrec.org> wrote in message
news:NjvXb.1279$Hg4.673@chiapp18.algx.net...
sucker@mail.subrec.org
spam filter test

OK. I read it. JSM.

1284. Connectin a TO-92 hall effect sensor to wires

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 01:53:02 UTC
From: tim@ecanvas.biz
Message-ID: <eaf7e9fa.0402141753.23f02e@posting.google.com>
Source record: 28571

What is the best way to attach a hall effect sensor in a TO-92 package to 22 gauge solid wire? I've tried just laying the wire next to the to-92 lead and soldering them together, but I don't get much of a mechanical connection doing that. Is there some type of sleeve I should be using prior to the soldering?

Also, any suggestion on encapulating the device once the electrical connections are made?

1285. Re: LED PIC based counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 02:02:47 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <102tkq7cpvqbs3a@corp.supernews.com>
Source record: 28572

"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040214154844.08626.00003102@mb-m27.aol.com...

> Try a dose of realistic thinking in terms of hardware, based on the
> time available for hobby projects. Time. That most precious of all
> personal commodities.
>
> Programming a microcontroller is not trivial. It requires a new skill,

I have to admit, I do try to discourage people, perhaps with a little too
much fervor, from being afraid of using micros. They are a lot simpler
than most folks realize.

> One MUST become familiar with "Assembler level" programming, of
> including every single sequential command and decision point needed
> by the program application.

And this is different from designing with discrete logic how?

> The most convenient was to apply a microprocessor or micro-
> controller is to get one with the program already burned in. Saves an
> enormous amount of development time...but does not do any good for
> personal programming experience, only in the installation of the micro.

Yes, but it has become clear that the original poster had a rather specific
application that he is not going to be able to get off the shelf for a
reasonable price. He will need to take an existing design and alter it, or
roll his own.

> Yes and no. :-) That depends on the source of information for the
> project. Magazines don't like to include pages of a PIC program since

No, but they always provide links to the code online. Have you opened a
copy of QST lately?

> Of course. :-) The pep-rally over-confidence syndrome...one can do
> anything with a "positive outlook"...immediately...no problems at all,
> right? :-)

Absolutely <g>

> Why bash anyone for wanting to use LEDs instead of LCDs? There
> are advantages to each kind of display. For a personal project, I
> would think that it is up to the individual to determine individual
> desires. Is there something "wrong" with individualism? I think not.

Certainly, I don't think there is anything wrong with using LEDs. But the
original poster was looking for something low current - not a real strong

suit for LEDs. He was looking for something simple. LEDs are a problem there, too, because of the drive circuitry. If he is going to count frequency, within a project that he can get done this year, he is going to use a microcontroller of some ilk. Building a frequency counter from discrete parts is a huge job. And then, he wants it small. Again, the whole discrete logic thing makes that nearly impossible for the hobbyist. To top is off, he wants low current. Yes, absolutely doable with LEDs but with a huge added cost in complexity, especially if you decide up front no micros.

Frequency counters used to cost thousands of dollars. Today they are orders of magnitude cheaper because they are orders of magnitude simpler. And they are orders of magnitude simpler because virtually all the circuitry is in the micro. I just took a quick look at my counter - under 20 parts. Go to LEDs and you probably triple that. But take out the micro and you are talking about hundreds of parts.

Perhaps I am downplaying the difficulty in learning how to apply micros, but you are certainly downplaying the difficulty of not applying them in this context.

It sounds like maybe you had some sort of anlog frequency display in mind, which I don't quite picture. Might be a cool thing, though.

..

1286. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 02:59:33 UTC
From: Murray <vk4aok@kellymed.com>
Message-ID: <402EE095.2F982A43@kellymed.com>
Source record: 28573

I was told the length of the sampler should be a very small
part of the wavelength of the frequency under test.

OTOH I have used a SWR meter intended for CB (27Mhz) on 2m
with success. Try it and see.

murray vk4aok

Uwe Langmesser wrote:
>
> Re: parameters governing the power rating and the frequency range of an SWR
> meter
>
> I am reading the article which was sent to me as a response to my question
> about SWR meters and their construction. The article, a section of the test
> equipment chapter of the RSGB VHF/UHF Handbook, explains the construction of
> a reflectometer for 2m.
>
> The main line pick up tube is selected to match the impedance of the antenna
> line whereas the impedance of the sampling line can be more arbitrary and
> just has to be matched up with the proper terminating resistor.
>
> So much for impedance matching.
>
> The article did not explain very much what the limitation of the device with
> regards to the power and the used frequency are.
>
> Ok, the power seems to be limited by the power rating of the resistors
> terminating the sampling line.
> But then what parameter(s) are reponsible for the frequency rating of the
> device.
>
> I am asking because at a local hamfest I picked up reflectometer parts and
> now I wonder if I can change those to fit my needs (144MHz and low power).
>
> regards Uwe

1287. Re: 13.8 V power supply question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 03:09:04 UTC
From: ehsjr@bellatlantic.net
Message-ID: <402EE26C.EAA3DF6C@bellatlantic.net>
Source record: 28574

Uwe Langmesser wrote:
>
> I need a 12-14 V power supply for my new 2m tranceiver. On transmit I need
> probably 10 to 15 amps and I hooked up and old transformer with a rectifier
> and a filter section I get 15V at my filter with no load, the transformer is
> good for 25 amps) but if I draw 15 amps I will get too much ripple,
>
> so I need a regulating section.
>
> Homebrewing is called for.
>
> Last years radio amateur handbook has a design for a 28 volt regulated
> power supply and while I would feel comfortable building a proven design I
> do not feel comfortable to redesign that regulating section for my needs.
>
> So the question is does anyone have a diagram for a proven 12-14 Volt
> regulated supply for 10 to 25 amps??
>
> Thanks for your help
> Uwe

Your transformer secondary does not produce enough
voltage. First, solve that problem. You need a hefty
transformer, at least 15 volts on the secondary at
the required amperage. Your DC voltage across the
filter cap will be about 1.4 times the secondary
voltage.

The 723 circuits are great - but you can get all you
need from a 3 terminal LM 317 and a couple of support
components - a simpler circuit than a 723. Add a full
wave rectifier, and a lot of capacitance - I used
50,000 uf. Then, for the regulator, use an LM317 in
collector wraparound with a hefty heatsink and 4 or
more power transistors, with emitter equalizing
resistors. That's what I did, years ago. 4 2N3055's
on a huge heatsink and an LM317 on its own heatsink.
I used 4 .1 ohm 10 watt emitter resistors. If you
figure 7 amps per transistor, the emitter resistors
would have to dissipate 7^2 *.1 or 4.9 watts.
Each 2N3055 is capable of ~115 watts when used with a
proper heatsink. At 18 volts, my rectifier/filter caps
yield about 25.2 volts DC. The wattage to be dissipated,
worst case, is (25.2 - 13.8) * 25 or 285 watts. I have
no ripple problems and pretty good regulation, no load to

full load at about 10 amps. I haven't used the supply with a rig that draws more than that, so I can't say how well it would regulate at 25 amps, but I think it would work well.

What is really nice is that you can use almost all the parts in the above in a regulator with a 723 if you decide to, and you're out only the cost of the LM317 and support components not mentioned above - a few resistors, caps and a diode - less than ~ 3 bucks.

An example of the "collector wraparound" technique can be seen on page 13 of the following url:
http://www.national.com/ds/LM/LM340.pdf
It's title is "High Current Voltage Regulator"
It shows only 1 pass transistor - to add more, place them in parallel with the one shown, with one equalizing resistor in series with the emitter of each transistor. You can substitute a 7812 regulator for the 317 if you want - just put 2 diodes in series with the ground leg of the 7812 to get about 13.4 V out.

1288. VN66AK Pin Out Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 03:33:48 UTC
From: Dallas Lankford <dallas@bayou.com>
Message-ID: <jZWdnYX2VYIqdbPdRVn2hw@www.bayou.com>
Source record: 28575

I would appreciate it very much if someone would send me the pin out for a Siliconix VN66AK. Thank you, Dallas

1289. Re: homebrew VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 04:20:55 UTC
From: Uwe Langmesser <outhouse@midcoast.com>
Message-ID: <BC545DD7.D376%outhouse@midcoast.com>
Source record: 28576

Yes yes, even one of those little Radio Shack SWR meters made for CB does
indicate "something", but somehow I want to make sure that it is relevant
before I attach a fine 2m transmitter and push the button.

regards Uwe

in article 402EE095.2F982A43@kellymed.com, Murray at vk4aok@kellymed.com
wrote on 2/14/04 9:59 PM:

> I was told the length of the sampler should be a very small
> part of the wavelength of the frequency under test.
>
> OTOH I have used a SWR meter intended for CB (27Mhz) on 2m
> with success. Try it and see.
>
> murray vk4aok
>
> Uwe Langmesser wrote:
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>> Re: parameters governing the power rating and the frequency range of an SWR
>> meter
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>> I am reading the article which was sent to me as a response to my question
>> about SWR meters and their construction. The article, a section of the test
>> equipment chapter of the RSGB VHF/UHF Handbook, explains the construction of
>> a reflectometer for 2m.
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>> The main line pick up tube is selected to match the impedance of the antenna
>> line whereas the impedance of the sampling line can be more arbitrary and
>> just has to be matched up with the proper terminating resistor.
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>> So much for impedance matching.
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>> The article did not explain very much what the limitation of the device with
>> regards to the power and the used frequency are.
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>> Ok, the power seems to be limited by the power rating of the resistors
>> terminating the sampling line.
>> But then what parameter(s) are reponsible for the frequency rating of the
>> device.
>>
>> I am asking because at a local hamfest I picked up reflectometer parts and
>> now I wonder if I can change those to fit my needs (144MHz and low power).
>>
>> regards Uwe

1290. Re: B&W 850A coil

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 06:09:42 UTC
From: nhoj <" nhoj"@epix.net>
Message-ID: <G2EXb.21294$Bv6.3442491@news1.epix.net>
Source record: 28577

Andy---- Contact B&W . I had the same problem some time ago and they
sent me the parts free of charge. This was maybe 10 years ago. John K3OPC

W7CXA wrote:

>I was given a B&W 850A coil recently that is lacking the spacer material on
>the close wound part of the assembly. What is the best way to replace that
>material? It seems to have deteriorated through the years. It is in great
>shape except for that.
>
>Thanks,
>Andy W7CXA
>
>
>
>

1291. Re: LED PIC based counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 07:00:13 UTC
From: Richard Hosking <richardh@iinet.net.au>
Message-ID: <402f19d0$0$1739$5a62ac22@freenews.iinet.net.au>
Source record: 28578

If you buy a preprogrammed chip, you dont have to do any programming of
your own.

Richard

xpyttl wrote:
> "Avery Fineman" <averyfineman@aol.com> wrote in message
> news:20040214154844.08626.00003102@mb-m27.aol.com...
>
>
>> Try a dose of realistic thinking in terms of hardware, based on the
>> time available for hobby projects. Time. That most precious of all
>> personal commodities.
>>
>> Programming a microcontroller is not trivial. It requires a new skill,
>
>
> I have to admit, I do try to discourage people, perhaps with a little too
> much fervor, from being afraid of using micros. They are a lot simpler
> than most folks realize.
>
>
>> One MUST become familiar with "Assembler level" programming, of
>> including every single sequential command and decision point needed
>> by the program application.
>
>
> And this is different from designing with discrete logic how?
>
>
>> The most convenient was to apply a microprocessor or micro-
>> controller is to get one with the program already burned in. Saves an
>> enormous amount of development time...but does not do any good for
>> personal programming experience, only in the installation of the micro.
>
>
> Yes, but it has become clear that the original poster had a rather specific
> application that he is not going to be able to get off the shelf for a
> reasonable price. He will need to take an existing design and alter it, or
> roll his own.
>
>
>> Yes and no. :-) That depends on the source of information for the
>> project. Magazines don't like to include pages of a PIC program since
>

>
> No, but they always provide links to the code online. Have you opened a
> copy of QST lately?
>
>
>> Of course. :-) The pep-rally over-confidence syndrome...one can do
>> anything with a "positive outlook"...immediately...no problems at all,
>> right? :-)
>
>
> Absolutely <g>
>
>> Why bash anyone for wanting to use LEDs instead of LCDs? There
>> are advantages to each kind of display. For a personal project, I
>> would think that it is up to the individual to determine individual
>> desires. Is there something "wrong" with individualism? I think not.
>
>
> Certainly, I don't think there is anything wrong with using LEDs. But the
> original poster was looking for something low current - not a real strong
> suit for LEDs. He was looking for something simple. LEDs are a problem
> there, too, because of the drive circuitry. If he is going to count
> frequency, within a project that he can get done this year, he is going to
> use a microcontroller of some ilk. Building a frequency counter from
> discrete parts is a huge job. And then, he wants it small. Again, the
> whole discrete logic thing makes that nearly impossible for the hobbyist.
> To top is off, he wants low current. Yes, absolutely doable with LEDs but
> with a huge added cost in complexity, especially if you decide up front no
> micros.
>
> Frequency counters used to cost thousands of dollars. Today they are orders
> of magnitude cheaper because they are orders of magnitude simpler. And they
> are orders of magnitude simpler because virtually all the circuitry is in
> the micro. I just took a quick look at my counter - under 20 parts. Go to
> LEDs and you probably triple that. But take out the micro and you are
> talking about hundreds of parts.
>
> Perhaps I am downplaying the difficulty in learning how to apply micros, but
> you are certainly downplaying the difficulty of not applying them in this
> context.
>
> It sounds like maybe you had some sort of anlog frequency display in mind,
> which I don't quite picture. Might be a cool thing, though.
>
> ..
>
>

1292. Re: Connectin a TO-92 hall effect sensor to wires

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 08:39:53 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <402f305a$0$9758$cc9e4d1f@news.dial.pipex.com>
Source record: 28579

tim wrote:

> What is the best way to attach a hall effect sensor in a TO-92 package
> to 22 gauge solid wire? I've tried just laying the wire next to the
> to-92 lead and soldering them together, but I don't get much of a
> mechanical connection doing that. Is there some type of sleeve I
> should be using prior to the soldering?
>
> Also, any suggestion on encapulating the device once the electrical
> connections are made?

I'd mount it on a small PCB (I make my own). It could just be
encapsulated in epoxy resin.

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

1293. Anexcellent site

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 09:38:48 UTC
From: bozidar.pasaric@ri.hinet.hr
Message-ID: <1g9702k.qp87vqyeduawN%bozidar.pasaric@ri.hinet.hr>
Source record: 28580

I hope that this post is not off-topic because it refers to the history of electricity which is the basis of our hobby. The other day I came across an interesting site written and maintained by Dr. Eugenii Katz from the Hebrew University in Jerusalem, Israel. It contains biografies, work and results of all the scientists who have contributed to the development of the science of electricity, ane wre born in the last 300 years. The list has 234 names - from William Gilbert to Walter William Schockley. If you click on the name you get his biography with his portrait (if avalilable) and inventions.

The whope list is diveded into five parts:

- scientists born before 1751.
- scientists born 1751-1800,
- scientists born 1801-1850,
- scientist born 1851-1900,
- scientists born after 1901.

It is enough to go to the Google and type in one of the above subtitles, and then click on the same subtitle you get. I have printed down the whole site - more than 800 pages of interesting reading! A whole encyclopedia for free. It is very useful for students of electrotechnics, but also very enlightening for us hams. I was shocked to read that George Ohm was mocked by respectful scientists for his law, that Nikola Tesla was pennyless in his old age and that Edvin Armstrong - the inventor of superheterodyne and of frequency modulation commited a suicide exhaused be endless court procedures and failures trying to introduce his FM.

1294. An excellent site!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 10:18:59 UTC
From: bozidar.pasaric@ri.hinet.hr
Message-ID: <1g972f1.16n7ssv1cpmz7kN%bozidar.pasaric@ri.hinet.hr>
Source record: 28582

I hope that this post is not off-topic because it refers to the history of electricity which is the basis of our hobby. The other day I came across an interesting site written and maintained by Dr. Eugenii Katz from the Hebrew University in Jerusalem, Israel. It contains biografies, work and results of all the scientists who have contributed to the development of the science of electricity, ane were born in the last 300 years. The list has 234 names - from William Gilbert to Walter Schockley. If you click on the name you get his biography with his portrait (if avalilable), pictures from his life and his inventions.

The whole list is diveded into five parts:

- scientists born before 1751.
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- scientists born 1801-1850,
- scientist born 1851-1900,
- scientists born after 1901.

It is enough to go to the Google and type in one of the above subtitles, and then click on the same subtitle you get. I have printed down the whole site - more than 800 pages of interesting reading! A whole encyclopedia for free! It is very useful for students of electrotechnics, but also very enlightening for us hams. I was shocked to read that George Ohm was mocked by respectful scientists for his Law, that Nikola Tesla was pennyless in his old age and that Edwin Armstrong - the inventor of superheterodyne and of frequency modulation - commited a suicide exhaused by endless court procedures and failures trying to introduce his FM.

Dr. Katz's URL is
<http//www.geocities.com/bioelectrochemistry/index.htm>.
Excellent work in his free time. Thanks dr. Katz!
Bozidar, 9A2HL

1295. An excellent site!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 10:19:00 UTC
From: bozidar.pasaric@ri.hinet.hr
Message-ID: <1g9733c.1bvjkzawf3xu0N%bozidar.pasaric@ri.hinet.hr>
Source record: 28581

Since my last post was only partial, I am repeating it here:

I hope that this post is not off-topic because it refers to the history of electricity which is the basis of our hobby. The other day I came across an interesting site written and maintained by Dr. Eugenii Katz from the Hebrew University in Jerusalem, Israel. It contains biografies, work and results of all the scientists who have contributed to the development of the science of electricity, and were born in the last 300 years. The list has 234 names - from William Gilbert to Walter William Schockley. If you click on a name, you will get his biography with his portrait (if avalilable) and inventions.

The whole list is diveded into five parts:

- scientists born before 1751.
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- scientists born 1801-1850,
- scientist born 1851-1900,
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It is enough to go to the Google and type in one of the above subtitles, and then click on the same subtitle you get. I have printed down the whole site - more than 800 pages of interesting reading! A whole encyclopedia for free! It is very useful for students of electrotechnics, but also very enlightening for us hams. I was shocked to read that George Ohm was mocked by respectful scientists for his Law, that Nikola Tesla was pennyless in his old age and that Edwin Armstrong - the inventor of superheterodyne and of frequency modulation - commited a suicide, exhaused be endless court procedures and failures trying to introduce his FM.

Dr. Katz's URL is:
<http://www.geocities.com/bioelectrochemistry/index.htm>.
An excellent work in his free time. Thanks, dr. Katz!
Bozidar, 9A2HL

1296. HP 456A ??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 14:38:38 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <102v13p38679b12@corp.supernews.com>
Source record: 28583
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.equipment,rec.antiques.radio+phono

I just got this HP 456A AC Current Probe and need some help to get it going. The 1977 HP catalog indicates that it could operate 400 hours on batteries, not very long for what's in it. The dead batteries that came with it are Mallory TR 236R at 8.1 volts and TR 234R at 5.4 volts, these are C size diameter. There are only two 2N5087 transistors, a diode, and a few resistors and capacitors in the circuit, what's the current draw? I am not sure that these are the correct batteries but would like to know if anyone out there can be confirm the batteries or has a schematic, manual or AC power supply. If I can't find an HP optional AC supply I think I'll build a little Zener stabilized supply after I get the voltages confimred.
tnx
Hank WD5JFR

1297. Oven oscillator spec's?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 15:57:51 UTC
From: "Leland C. Scott" <no-spam@junk-mail.net>
Message-ID: <LpGdnXKBNrGcCrLdRVn-jQ@comcast.com>
Source record: 28584

I have a used Ovenaire OSC 48-11 oven controlled
crystal oscillator that runs at 3.0 MHz. Does
anybody have the specifications for this OCXO?

--
Leland C. Scott
KC8LDO

Saw this on a Tee-shirt:

"I am a
bomb
technician
if you see me
running
try to keep up "

1298. Re: Do we have the technology to do this?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 16:25:48 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <g4NXb.25136$hR.667060@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28585

I believe that you are asking about narrowing the I.F. bandwidth. If you use narrow filters, this is quite possible. Since FM stereo stations occupy a 150kHz bandwidth, you would be clipping the sidebands, resulting in lost information. If you are only receiving in mono, this wouldn't be an issue.

Pete

"R J Carpenter" <rcarpen@erols.com> wrote in message
news:402ea6f9$0$3104$61fed72c@news.rcn.com...
>
> "Richard" <nearlynews_email@ntlworld.com> wrote in message
> news:c0liug$18kjmn$1@ID-150848.news.uni-berlin.de...
>
> > Can you make a circuit that responds only to the wanted
> > station when it is just fractionally stronger than the unwanted station?
>
> That's called "capture ratio". Better receivers have lower numbers -
> smaller difference required to suppress unwanted station. They have
numbers
> like a VERY few dB.
>
> To get this you need very flat IF within the passband - no ripples in
> response.
>
> A wideband limiter and wide and very linear discriminator.
>
> The National "Criterion" series of tuners from 50 years ago were among the
> first to attempt this. IIRC, there were HH Scott tuners like this as
well.
>
> All bets are off if you're trying to recover stereo.
>
> 73 de bob w3otc
>
>

1299. Re: Do these things exist?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 16:28:16 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <A6NXb.25150$hR.667082@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28586

I believe that the new Philips chipsets use DSP techniques for demodulation.
I also believe that this scheme is used in the Cambridge Audio T-500 tuner.
I do have one of these tuners, and it is the worst sounding unit out of my
collection. If it wasn't for the fact that it had a nice dual conversion AM
section, I would get rid of it.

Pete

"Michael" <mpendley2@austin.rr.com> wrote in message
news:GpwXb.13509$ng6.1305@fe2.texas.rr.com...
> Try www.flex-radio.com
>
>
> "Richard" <nearlynews_email@ntlworld.com> wrote in message
> news:c0jhjv$17bc3e$1@ID-150848.news.uni-berlin.de...
> > Does a product exist that takes an FM IF signal input at 10.7Mhz and
> > produces audio output, having employed digital technology for
selectivity
> > and demodulation?
> >
> >
> >
>
>

1300. Futaba VFD 2x16 display

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 18:04:41 UTC
From: tk <gamach1@ispwest.com>
Message-ID: <c0occ5010fl@enews3.newsguy.com>
Source record: 28589

I would like to use this 2 line VFD in a VFO project ... can see it a lot better than LCD. The part # is US1625D03B and it is a 5 volt part. I have a 21 page manual from the Inet and am trying to drive it with a PIC. This device uses a clock and data line and accepts 8 bit serial transfer. Have had minimal success.... I can display several characters on line 1 but when I try to send a stream of characters it starts a crazy oscillation on the signal lines and the display goes bonkers. I suspect the problem is timing and/or control character sequence. I remember the terrible time we all had with LCD's till someone cracked the control sequence mystery. I would appreciate any information or code samples to get this dude working.

Thanks

Ted in Atlanta KD4EE

1301. Re: VN66AK Pin Out Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 18:21:53 UTC
From: Yrrah <harke.smits@hccnet.nl>
Message-ID: <402fb3e5$0$3992$3a628fcd@reader1.nntp.hccnet.nl>
Source record: 28587

Are you sure it is a VN66AK? (AF is more common)
Harke
Dallas Lankford <dallas@bayou.com> schreef in berichtnieuws
jZWdnYX2VYIqdbPdRVn2hw@www.bayou.com...
>

1302. Re: LED PIC based counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 18:33:09 UTC
From: averyfineman@aol.com
Message-ID: <20040215133309.25517.00004310@mb-m15.aol.com>
Source record: 28588

In article <102tkq7cpvqbs3a@corp.supernews.com>, "xpyttl"
<xpyttl_nospam@earthling.net> writes:

>"Avery Fineman" <averyfineman@aol.com> wrote in message
>news:20040214154844.08626.00003102@mb-m27.aol.com...
>
>> Try a dose of realistic thinking in terms of hardware, based on the
>> time available for hobby projects. Time. That most precious of all
>> personal commodities.
>>
>> Programming a microcontroller is not trivial. It requires a new skill,
>
>I have to admit, I do try to discourage people, perhaps with a little too
>much fervor, from being afraid of using micros. They are a lot simpler
>than most folks realize.

A PIC in a DIP is physically no different than any other DIP. Plug it
in or solder it in. No problem.

What matters is the programming inside that PIC (or any other brand
microcontroller). That program's development is done outside the
DIP, then loaded into it. THAT is where the difference is.

It is more like a microprocessor (a microcontroller IS a microprocessor
plus some other circuits and functions) but the PIC is designed with a
small number of instructions. Far easier to memorize than the full
set for an Intel micro in a PC. Note: The memorization DOES occur
when starting to program or flow-charting someone else's program,
helps a great deal in reducing constant look-up to the instruction chart.

>> One MUST become familiar with "Assembler level" programming, of
>> including every single sequential command and decision point needed
>> by the program application.
>
>And this is different from designing with discrete logic how?

Do you want the whole book on that or just a synopsis? :-)

Hard-wired digital logic doesn't quite have "decision diamonds" but
some are close to that. I've programmed several micros, beginning
with an HP 9100 calculator, going on to Motorola 6800s, then to
MOSTEK 6502s (in the Apple][), Intel 8051s, the Intel family in the
PCs (through MASM), and finally the PIC 16Fs which I've just started
in on. The 6502 had a nice flag in the Carry of the accumulator that
Apple's DOS 3.3 made extensive use of...but there isn't an
equivalent discrete digital logic equivalent for that function ability.

Digital logic is fairly straightforward in design and application where
the main constraints are t_pd and fan-out/fan-in. Go for the states
and everything happens, no "program development" needed. One
CAN flow-chart some of it, or analyze states (especially so for a
state machine with a PLD) but most of it goes down on paper, can be
analyzed right off and applied. No program development needed.

>> The most convenient was to apply a microprocessor or micro-
>> controller is to get one with the program already burned in. Saves an
>> enormous amount of development time...but does not do any good for
>> personal programming experience, only in the installation of the micro.
>
>Yes, but it has become clear that the original poster had a rather specific
>application that he is not going to be able to get off the shelf for a
>reasonable price. He will need to take an existing design and alter it, or
>roll his own.

So? The original request was - specifically - NOT to use an LCD.

>> Yes and no. :-) That depends on the source of information for the
>> project. Magazines don't like to include pages of a PIC program since
>
>No, but they always provide links to the code online. Have you opened a
>copy of QST lately?

Not since about two weeks ago. Just glancing through it. :-)

Have you "opened a Dr. Dobbs" recently? Or the PIC website to get
appnotes? [very slow for some reason compared to other sites] How
about a couple dozen websites with some ingenious applications,
including frequency counter applications not mentioned in here? Have
you opened a digital logic databook recently?

I've been source coding since the 70s and cannot immediately glean
meaning from a large listing of machine instructions. I don't know of
any professional programmer who can do that with unfamiliar source.

>> Of course. :-) The pep-rally over-confidence syndrome...one can do
>> anything with a "positive outlook"...immediately...no problems at all,
>> right? :-)
>
>Absolutely <g>

Electrons aren't into human emotionalism or that "can-do-anything" stuff.
One works by THEIR rules or they won't cooperate.

>> Why bash anyone for wanting to use LEDs instead of LCDs? There
>> are advantages to each kind of display. For a personal project, I
>> would think that it is up to the individual to determine individual
>> desires. Is there something "wrong" with individualism? I think not.
>
>Certainly, I don't think there is anything wrong with using LEDs. But the
>original poster was looking for something low current - not a real strong
>suit for LEDs. He was looking for something simple.

No. He was looking for a display NOT an LCD.

As I said in my reply, LEDs draw far more current than LCDs,
and that will include large LCD display assemblies with their internal
local memory and screen driver circuitry.

>LEDs are a problem there, too, because of the drive circuitry.

Nonsense. A CD4511 is still off the shelf, BCD to 7-segment, latch
and decoder-driver. Just add series resistors for segments and play.
A buck apiece in single quantities. No programming.

>If he is going to count
>frequency, within a project that he can get done this year, he is going to
>use a microcontroller of some ilk. Building a frequency counter from
>discrete parts is a huge job.

From discrete transistors, yes. :-) From off-the-shelf ICs, no.
I did all the design and building of my own "discrete" frequency
counter and time interval meter using RTL back in 1967...while busy
working at a place with a long commute. I'm glad RTL got
discontinued. :-)

Since then I've done a small CMOS (4-digit) counter and am finishing
a "discrete" 74F and 74LS (TTL) 7-digit counter with adjustable preset
capability and up-down counting (!!).. Step-and-repeat for all those
digits. LED display. Why? I wanted specifically a display I could see
out of the corner of my eye (therefore bright) while concentrating on
work right in front of me. It is a workshop instrument, not a QRP thing
to take up a mountain. If I wanted such I would bring up the PIC
developement program, sketch flow charts, write source code (with
lots and lots of comments to tell me what I was doing in the future)...
and add more very-portable-rig functions and use a small LCD display
to save on battery drain.

>And then, he wants it small. Again, the
>whole discrete logic thing makes that nearly impossible for the hobbyist.

Why are you emphasizing all that "discrete logic" thing? Extremely
easy to use that from low-cost off-the-shelf items if one is familiar with
the available logic packages. Legacy parts. Old, some have already
been dropped from production.

>To top is off, he wants low current. Yes, absolutely doable with LEDs but
>with a huge added cost in complexity, especially if you decide up front no
>micros.

No. Using LEDs is NOT "low current." Not even for the first scientific
calculator. The HP-35 may have approached a practical limit on
LED numerics at _minimum_ current but it doesn't compare with LCDs
except maybe those LCDs with bright backlighting.

Who was mandating "no micros?" Not me. The scheme to use an
internal counting register as an initial accumulator is fairly recent (about
within the last 6 years). "Discrete" logic (very discrete, including two-

transistor flip-flops) counters go back to before 1960.

>Frequency counters used to cost thousands of dollars.

My 6-digit RTL counter, using all-new parts off-the-shelf, cost less than $300 in 1967. Included many extra parts, some still in the workshop parts collection, unused. Had oven-controlled 10 MHz timebase crystal. Today my timebase standard is a TCXO which will become a TCVXO when the 60 KHz phase-locker receiver-controller is completed. The display is LED only because that is _easy_ to implement, a no-strain thing and it is bright. Yes, brightness takes current but this is a lab instrument and not battery powered. The total parts cost is less than $500 for both halves in 2003. Absolutely NO programming required.

Yes, I do know the cost of manufactured instruments. Was calibrating HP 524 counters in 1960 (B model was all vacuum state, maximum count frequency of 10 MHz, neon "thermometer" numeric display, weight excellent for body building).

>Today they are orders
>of magnitude cheaper because they are orders of magnitude simpler. And they
>are orders of magnitude simpler because virtually all the circuitry is in
>the micro. I just took a quick look at my counter - under 20 parts. Go to
>LEDs and you probably triple that. But take out the micro and you are
>talking about hundreds of parts.

A 16F84 or 16F71 as a frequency counter needs only a Schmitt trigger input to shape up the arbitrary waveform, maybe a "discrete" comparator IC if one is fussy, to count directly to 30 MHz. Going higher in frequency needs an extra "discrete" IC, a prescaler. That and an LCD assembly, one of many kinds available.

The stuff NOT in "discrete hardware" is the PROGRAM. Do that one right and it is a fine little instrument. Do it wrong and there is a struggle to right it that may take hours and days, including bench measurement. Using others' source code is fine, much much easier. Provided the LCD assembly is the same as the authors', but if you have an LCD with a different sequence of data, of format, then it is back to the development program again.

>Perhaps I am downplaying the difficulty in learning how to apply micros, but
>you are certainly downplaying the difficulty of not applying them in this
>context.

I thought I gave a reasonable reply the first time. Looked at several options. Were you gathering sticks for an Internet burning at the stake? :-) When giving suggestions it is better to cover the wide range of possibilities first rather than second-guess another's depth of knowledge, experience, or desire.

>It sounds like maybe you had some sort of anlog frequency display in mind,
>which I don't quite picture. Might be a cool thing, though.

I've been using displays of many kinds in a long time, starting with gas numerics (Amperex Bi-Quinary tubes, like a Burroughs Nixie but 2 x 5, not 1 x 10)...and going through all the others except plasma dot matrix panels. If it's an LCD and there's a circuit driver IC for it, I will use those first. The weird waveforms have already been worked out and the ICs packaged. No driver IC and I start looking at other ways to display information. I don't know everything but I've been around a while and had hands-on in many things.

When you say "discrete" active devices, try to put that in context of individual transistors. Or tubes. I've done both. Never again, I hope. You ought to call TTL and functional-equivalent CMOS logic as either SSI, MSI, or LSI (which they are) not "discrete." Done those in more than counter circuitry. Microprocessors and microcontrollers fall under the VLSI category.

Microcontrollers are wonderful devices for making certain things with very low hardware count and near-minimal power demand. But, their application in special things requires PROGRAMMING. That isn't in the hardware. Such MUST be there. It CAN be learned. Some, like me, find programming fun. Others do not. I do not find having to learn new instruction sets for other micro families to be fun. Nuisance.

Was there anything else? :-)

Len Anderson
retired (from regular hours) electronic engineer person

1303. Re: Voice Keyer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 19:36:23 UTC
From: reb <born_a_rebel_1946@hotmail.com>
Message-ID: <0eacf1cc294ea2079f42cdcc9e704201@news.teranews.com>
Source record: 28591

On Tue, 29 Jul 2003 18:45:55 +0100, "Denis O' Flynn"
<denisf@eircom.net> wrote:

>Anyone have circuit diagram for an external voice keyer?
>
>de Denis EI6HB
>ei6hb@eircom.net
>

Denis,
if you want something that will work out of the box
and is plug and play....
do this...

TigerTronics SL-1+
In addition to supporting all available Digital modes, the SL-1+
supports the latest Voice modes such as Internet Repeater Linking
(Echolink, etc.), Remote Base, and Voice Keyer operation.

http://www.tigertronics.com/

73 reb

****
In the 'old days' they called us hoods,
because we wore our faces like shrouds,
and never spoke.
****

1304. Re: Connectin a TO-92 hall effect sensor to wires

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 19:43:40 UTC
From: averyfineman@aol.com
Message-ID: <20040215144340.21642.00004388@mb-m01.aol.com>
Source record: 28590

In article <eaf7e9fa.0402141753.23f02e@posting.google.com>, tim@ecanvas.biz
(tim) writes:

>What is the best way to attach a hall effect sensor in a TO-92 package
>to 22 gauge solid wire?

Soldering.

>I've tried just laying the wire next to the
>to-92 lead and soldering them together, but I don't get much of a
>mechanical connection doing that.

Good soldering technique forms a very strong intermetallic bond
by itself. Tektronix proved that in production of their first
oscilloscopes, just laying in wires to terminal posts instead of
wrapping them first.

>Is there some type of sleeve I should be using prior to the soldering?

Teflon prior to soldering. PVC sleeve after soldering. Either.
Your choice.

I would suggest #24 or #26 gauge wire, maybe a tweezer-like
heat sink to avoid too much heat into the TO-92 plastic case
through the leads.

>Also, any suggestion on encapulating the device once the electrical
>connections are made?

Any two-part epoxy having a filler...making it "thick" or viscous.
That will bond nicely to the epoxy TO-92 case.

I've made a temperature probe out of a 2N3877 in a TO-92 many
years ago using #24 stranded. Leads soldered in-line with the
transistor leads. Thick epoxy over the leads. Diameter was no
larger than the TO-92 largest diameter. PVC sleeving slipped over
the soldered joints after soldering...I think...epoxy covered it up. :-)

The only problem was the overall mass of the probe as a
temperature measuring device...got replaced with a welded
thermocouple about a decade after fabrication in 1968. Still works
for temping large masses. Hall effect is for magnetic fields and the
method is non-magnetic unless there is a strange epoxy with a
metal powder filler.

Len Anderson
retired (from regular hours) electronic engineer person

1305. Re: HP 456A ??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 21:11:42 UTC
From: Phillip Jockell <philjXXX@spearnet.net>
Message-ID: <Xns9490A4BF5ABBpj12345pjpj@216.196.97.132>
Source record: 28592
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.equipment,rec.antiques.radio+phono

Hank,

According to my 1967 HP catalog (in surprisingly good condtion, by the way) the 456A uses two TR233R's and one TR234. It does not list current required (and I guess the 1977 catalog does'nt either.)

My catalog also estimates battery life at 400 hours.

You might search the net for mercury battery current capacity. I seem to recall it is somewhat less than nicads, but I don't remember the ratios.

73,

Phil - N4GWV

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in news:102v13p38679b12@corp.supernews.com:

> I just got this HP 456A AC Current Probe and need some help to get it
> going. The 1977 HP catalog indicates that it could operate 400 hours
> on batteries, not very long for what's in it. The dead batteries that
> came with it are Mallory TR 236R at 8.1 volts and TR 234R at 5.4
> volts, these are C size diameter. There are only two 2N5087
> transistors, a diode, and a few resistors and capacitors in the
> circuit, what's the current draw? I am not sure that these are the
> correct batteries but would like to know if anyone out there can be
> confirm the batteries or has a schematic, manual or AC power supply.
> If I can't find an HP optional AC supply I think I'll build a little
> Zener stabilized supply after I get the voltages confimred. tnx
> Hank WD5JFR

1306. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 23:46:32 UTC
From: Jim Thompson <thegreatone@example.com>
Message-ID: <451030pbtn9cfouk5shogqhgsbsqk5c6t9@4ax.com>
Source record: 28594
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 15 Feb 2004 23:48:47 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>What's the maximum multiplication factor it's practical and sensible
>to attempt to achieve in one single stage of multiplication? (Say from
>a 7Mhz square wave source with 5nS rise/fall times.)

You ought to be able to answer that yourself... what's the spectral
roll-off of a square wave ??

...Jim Thompson
--
James E.Thompson, P.E.	mens
Analog Innovations, Inc.	et
Analog/Mixed-Signal ASIC's and Discrete Systems	manus
Phoenix, Arizona Voice:(480)460-2350	
E-mail Address at Website Fax:(480)460-2142	Brass Rat
http://www.analog-innovations.com	1962

I love to cook with wine. Sometimes I even put it in the food.

1307. Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-15 23:48:47 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <ea0030pj96jdunmhsmelfvimqm1tstp5qf@4ax.com>
Source record: 28593
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

What's the maximum multiplication factor it's practical and sensible
to attempt to achieve in one single stage of multiplication? (Say from
a 7Mhz square wave source with 5nS rise/fall times.)
--

The BBC: Licensed at public expense to spread lies.

1308. Tektronix 2235 Intensity control Problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 00:16:11 UTC
From: "John B"
Message-ID: <fZTXb.5518$aH3.176217@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28595

Recently purchased a Tek 2235 (does not have military option). It displays both traces ok as well as a square wave on both channels. Both traces respond to the 'A' intensity control, while the 'B' intensity control has no effect. Has anyone else experienced this problem? Both the 'A' & 'B' intensity control pots check out ok. Voltage at the base of Q814 varies when the 'B' pot is turned as well as the output voltage on the emitter of Q814. Voltages here are correct too. There is no voltage change at the node of anodes CR818 and CR820 while turning the 'B' pot, but it does change here when the 'A' intensity pot is turned. I've checked all related diodes --CR818, CR820, CR805, CR817, CR816, CR680, etc., and related resistors. Q586 is biased and stays on in "Ch1", "CH2", and "Both" positions, at least as far as I can tell with the voltmeter. I don't see any components with visible damage, but there is a place on the board that is brown from heat around Q254, Q255, Q256 which is the Vertical output to CRT section. I'm guessing that this is unrelated to the intensity problem. any help or ideas would be greatly appreciated.

Thanks,
John

KB9WTK

1309. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 00:18:49 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <J%TXb.51592$KV5.10645@nwrdny01.gnilink.net>
Source record: 28596
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

I think it boils down to something very practical:

If you want good spectral purity, then you need to bandpass filter the output of the multiplier. It becomes a matter of how close and how large the undesired spectral components are compared to the desired spectral components. After that, you can consult your filter design charts to determine how complex a filter will be required and whether it's physically realizable.

As an example, a x4 multiplier stage will have a desired output at Fin x 4, and close-in undesired products at Fin x 3 and Fin x 5. This means the output bandpass filter has to be able to attenuate signals at +/-25% of the center frequency sufficiently to meet the desired spectral purity. In practice with simple single-ended multiplier designs, a x4 multiplier is approaching the threshold of realizability for high purity applications (40-60 dB purity). It is possible to make push-pull and push-push multipliers that have better output purity, but these techniques are seldom used.

Joe
W3JDR

"Jim Thompson" <thegreatone@example.com> wrote in message
news:451030pbtn9cfouk5shogqhgsbsqk5c6t9@4ax.com...
> On Sun, 15 Feb 2004 23:48:47 +0000, Paul Burridge
> <pb@osiris1.notthisbit.co.uk> wrote:
>
> >What's the maximum multiplication factor it's practical and sensible
> >to attempt to achieve in one single stage of multiplication? (Say from
> >a 7Mhz square wave source with 5nS rise/fall times.)
>
> You ought to be able to answer that yourself... what's the spectral
> roll-off of a square wave ??
>
> ...Jim Thompson
> --
> | James E.Thompson, P.E. | mens |
> | Analog Innovations, Inc. | et |
> | Analog/Mixed-Signal ASIC's and Discrete Systems | manus |
> | Phoenix, Arizona Voice:(480)460-2350 | |
> | E-mail Address at Website Fax:(480)460-2142 | Brass Rat |
> | http://www.analog-innovations.com | 1962 |
>
> I love to cook with wine. Sometimes I even put it in the food.

1310. How do you use an LCC SMD device - holders or carriers or ??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 01:05:07 UTC
From: rmonagha@engr.smu.edu
Message-ID: <c0p503oau1@blaze.seas.smu.edu>
Source record: 28497

Greetings,

I would like to use a ceramic 8 lead LCC device (accelerometer) in a project but wonder on the best way to mount and use it in a one-off project? The device is 5x5mm square, three contacts on each side and one contact on top and one on the bottom (total 8). So we are dealing with 1mm spacing - eeek! ;-)

Are there snap in holders which can be used to mount these devices and prototype with them, sort of like chip sockets for 14 pin DIPs, with wire fanout to pads for soldering or connections?

I have searched online, but the closest I have found is the surfboard series for surface mount devices (digikey etc.). This still leaves the issue of soldering in such close and tiny spaces. Given $20+ per device, I would like to find something which would allow direct snap in mounting.

Is there such a device available? Who stocks and sells them?

Thanks very much for your help in this project!

regards

bob monaghan W5VC
--
****
* Robert Monaghan POB 752182 Southern Methodist Univ. Dallas Tx 75275 *
**********Standard Disclaimers Apply**********

1311. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 01:09:12 UTC
From: Jim Thompson <thegreatone@example.com>
Message-ID: <tu503094d65spev1f85pk6ar96utptli7g@4ax.com>
Source record: 28498
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 16 Feb 2004 00:18:49 GMT, "W3JDR" <joe@roccis.com> wrote:

>I think it boils down to something very practical:
>
>If you want good spectral purity, then you need to bandpass filter the
>output of the multiplier. It becomes a matter of how close and how large the
>undesired spectral components are compared to the desired spectral
>components. After that, you can consult your filter design charts to
>determine how complex a filter will be required and whether it's physically
>realizable.
>
>As an example, a x4 multiplier stage will have a desired output at Fin x 4,
>and close-in undesired products at Fin x 3 and Fin x 5. This means the
>output bandpass filter has to be able to attenuate signals at +/-25% of the
>center frequency sufficiently to meet the desired spectral purity. In
>practice with simple single-ended multiplier designs, a x4 multiplier is
>approaching the threshold of realizability for high purity applications
>(40-60 dB purity). It is possible to make push-pull and push-push
>multipliers that have better output purity, but these techniques are seldom
>used.
>
>Joe
>W3JDR
>
>
[snip]

I would think a "W3JDR" would know that even harmonics are *much*
harder to obtain in nonlinear multipliers.

...Jim Thompson
--
James E.Thompson, P.E.	mens
Analog Innovations, Inc.	et
Analog/Mixed-Signal ASIC's and Discrete Systems	manus
Phoenix, Arizona Voice:(480)460-2350	
E-mail Address at Website Fax:(480)460-2142	Brass Rat
http://www.analog-innovations.com	1962

I love to cook with wine. Sometimes I even put it in the food.

1312. Re: Tektronix 2235 Intensity control Problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 01:31:57 UTC
From: TOM <noname@noprovider.nodomain>
Message-ID: <h4VXb.14774$5W3.4329@nwrddc02.gnilink.net>
Source record: 28499

John:

Are you triggering the B sweep before checking out the B intensity control?
The B intensity controls only the delayed B sweep, not the main (A) sweep.
You may know this already and have other hardware problems, but set the B
trigger
to the 'runs after delay' position, then decouple the A and B sweep knobs.
The
delayed sweep will be offset from the main sweep (you can see 4 traces),
and the B intensity should control just the delayed sweep. Usually the
delayed
sweep is a lot fainter than the main sweep because it's effective trigger
rate is low
compared to the sweep rate.

-- Tom, N5EG

"John B .att.net>" <robotwizard@<removethis> wrote in message
news:fZTXb.5518$aH3.176217@bgtnsc04-news.ops.worldnet.att.net...
> Recently purchased a Tek 2235 (does not have military option). It displays
> both traces ok as well as a square wave on both channels. Both traces
> respond to the 'A' intensity control, while the 'B' intensity control has
no
> effect. Has anyone else experienced this problem? Both the 'A' & 'B'
> intensity control pots check out ok. Voltage at the base of Q814 varies
when
> the 'B' pot is turned as well as the output voltage on the emitter of
Q814.
> Voltages here are correct too. There is no voltage change at the node of
> anodes CR818 and CR820 while turning the 'B' pot, but it does change here
> when the 'A' intensity pot is turned. I've checked all related
> diodes --CR818, CR820, CR805, CR817, CR816, CR680, etc., and related
> resistors. Q586 is biased and stays on in "Ch1", "CH2", and "Both"
> positions, at least as far as I can tell with the voltmeter. I don't see
> any components with visible damage, but there is a place on the board that
> is brown from heat around Q254, Q255, Q256 which is the Vertical output to
> CRT section. I'm guessing that this is unrelated to the intensity problem.
> any help or ideas would be greatly appreciated.
>
> Thanks,
> John
>
> KB9WTK
>
>

1313. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 03:05:04 UTC
From: ehsjr@bellatlantic.net
Message-ID: <403032FB.D89C1E0E@bellatlantic.net>
Source record: 28500

Henry Kolesnik wrote:
>
> You might want to consider going to a ham swapfest and buying a good used
> commercial unit by HP or others. I see very good ones going cheap ($20 to
> $30) especially if they're 100MHz and below.
> 73
> hank wd5jfr

Right! I got one for $5.00 - a Ramsey with a cold
solder joint, works perfectly now, and another
for $10 - goes only to 50 MHz, both at hamfests.

1314. Re: Tektronix 2235 Intensity control Problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 03:18:24 UTC
From: John B <robotwizard@removethis.att.net>
Message-ID: <4EWXb.5976$aH3.194567@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28501

Thanks Tom. you were right, the B sweep wasn't triggered. I'm not used to this model, and (as you can probably tell) it's been a number of years since I have even used a scope. Nothing is more frustrating than to chase a problem that doesn't even exist. :-)

73's,

John

"TOM" <noname@noprovider.nodomain> wrote in message news:h4VXb.14774$5W3.4329@nwrddc02.gnilink.net...
> John:
>
> Are you triggering the B sweep before checking out the B intensity control?
> The B intensity controls only the delayed B sweep, not the main (A) sweep.
> You may know this already and have other hardware problems, but set the B
> trigger
> to the 'runs after delay' position, then decouple the A and B sweep knobs.
> The
> delayed sweep will be offset from the main sweep (you can see 4 traces),
> and the B intensity should control just the delayed sweep. Usually the
> delayed
> sweep is a lot fainter than the main sweep because it's effective trigger
> rate is low
> compared to the sweep rate.
>
> -- Tom, N5EG
>
>
>
>
> "John B .att.net>" <robotwizard@<removethis> wrote in message
> news:fZTXb.5518$aH3.176217@bgtnsc04-news.ops.worldnet.att.net...
> > Recently purchased a Tek 2235 (does not have military option). It displays
> > both traces ok as well as a square wave on both channels. Both traces
> > respond to the 'A' intensity control, while the 'B' intensity control has
> no
> > effect. Has anyone else experienced this problem? Both the 'A' & 'B'
> > intensity control pots check out ok. Voltage at the base of Q814 varies
> when
> > the 'B' pot is turned as well as the output voltage on the emitter of
> Q814.

> > Voltages here are correct too. There is no voltage change at the node of
> > anodes CR818 and CR820 while turning the 'B' pot, but it does change
here
> > when the 'A' intensity pot is turned. I've checked all related
> > diodes --CR818, CR820, CR805, CR817, CR816, CR680, etc., and related
> > resistors. Q586 is biased and stays on in "Ch1", "CH2", and "Both"
> > positions, at least as far as I can tell with the voltmeter. I don't
see
> > any components with visible damage, but there is a place on the board
that
> > is brown from heat around Q254, Q255, Q256 which is the Vertical output
to
> > CRT section. I'm guessing that this is unrelated to the intensity
problem.
> > any help or ideas would be greatly appreciated.
> >
> > Thanks,
> > John
> >
> > KB9WTK
> >
> >
>
>

1315. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 06:50:13 UTC
From: Ross Matheson <rdm@orcon.net.zn>
Message-ID: <lmp0309ctq5gmqef2o0pmupsopf9dej3j8@4ax.com>
Source record: 28502
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

(Forgot to add this ear;ier:)

: I notice that the UK mil CV2666 has a completely extra top mica disc above
: the plates, extending all the way to to the glass, with ceramic inserts, as
: well as the bottom metal disk with ceramic inserts like the RCA 829B.

Like this Mullard version found on the web; it looks identical:
http://www.tnbstore.com.tw/photo/mullard/mu-829b.jpg

"alll the way to the glass" is not quite precise -
little metal fingers actually contact the glass at the edge.

1316. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 08:43:31 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <hqn030duuosim9gh606b50ku4oq4cubfkn@4ax.com>
Source record: 28503
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 15 Feb 2004 23:48:47 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>What's the maximum multiplication factor it's practical and sensible
>to attempt to achieve in one single stage of multiplication? (Say from
>a 7Mhz square wave source with 5nS rise/fall times.)

While you might be able to generate odd harmonics of a 1 kHz square wave up to several hundred megahertz, there are two practical problems.

First you would need some method to separate the wanted harmonic from the unwanted.

For low multiplication factors in HF/VHF a series of bandpass LC filters would be needed to attenuate the unwanted harmonics. For higher frequencies some helical or cavity resonators may be needed.

One old method to separate nearby harmonics is to use a wave analyser. The wanted harmonics is mixed down with a VFO to some fixed intermediate frequency in which a fixed crystal filter is inserted (bandwidth 0,5-50 kHz depending on application). The filtered and amplified signal is then mixed back to the original frequency by the same VFO. The absolute stability of the VFO does not matter very much, since any drift is cancelled in the up-conversion. However, the stability must be sufficient to keep the desired harmonics within the IF filter bandwidth. This kind of tricks was once used to multiply some high precision frequency standard to some odd (say 61th harmonic).

The other problem with high multiplication factors is that the amplitude of the higher harmonics is quite low, thus needing quite a lot of amplification after filtering. However, the level of the original harmonics was low compared also to the wide band thermal (white) noise, thus, after amplification, the wide band thermal noise level is also high, reducing the final signal to noise ratio and in reception, cause reciprocal mixing programs.

Thus, it is better to use several multiplier stages with low multiplication factors, since it easier to filter out the desired harmonics after each multiplier. The gain distribution is also better, thus the noise floor does not become uncomfortably close to the wanted signal.

However, if some strange multiplication factor (such as the 17th) is needed (in which case a series of multipliers can not be used), these

days it would be easier to use a PLL with a fixed digital divider. Keep the VCO tuning range as small as possible, thus reducing the MHz/V sensitivity and noise through the tuning line and use a large loop bandwidth to clean the areas around the generated signal.

Paul OH3LWR

1317. Re: How do you use an LCC SMD device - holders or carriers or ??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 09:18:35 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <40308aec$0$21308$cc9e4d1f@news.dial.pipex.com>
Source record: 28504

Bob Monaghan wrote:
> Greetings,
>
> I would like to use a ceramic 8 lead LCC device (accelerometer) in a
> project but wonder on the best way to mount and use it in a one-off
> project? The device is 5x5mm square, three contacts on each side and one
> contact on top and one on the bottom (total 8). So we are dealing with 1mm
> spacing - eeek! ;-)
>
> Are there snap in holders which can be used to mount these devices and
> prototype with them, sort of like chip sockets for 14 pin DIPs, with wire
> fanout to pads for soldering or connections?
>
> I have searched online, but the closest I have found is the surfboard
> series for surface mount devices (digikey etc.). This still leaves the
> issue of soldering in such close and tiny spaces. Given $20+ per device,
> I would like to find something which would allow direct snap in mounting.
>
> Is there such a device available? Who stocks and sells them?

Is that the ADXL202? I made a little PCB for it, similar to the one used
for the evaluation kit. Soldering the device was a bit tricky (I should
have used solder paste) but I managed it with a fine tip and a
magnifier. You are very unlikely to find a socket for it, it just isn't
suitable for one.

73, Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

1318. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 11:53:11 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <0m9130h2f0b0p9vnv6qajoplpudkqetvk8@4ax.com>
Source record: 28505
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 15 Feb 2004 16:46:32 -0700, Jim Thompson
<thegreatone@example.com> wrote:

>On Sun, 15 Feb 2004 23:48:47 +0000, Paul Burridge
><pb@osiris1.notthisbit.co.uk> wrote:
>
>>What's the maximum multiplication factor it's practical and sensible
>>to attempt to achieve in one single stage of multiplication? (Say from
>>a 7Mhz square wave source with 5nS rise/fall times.)
>
>You ought to be able to answer that yourself... what's the spectral
>roll-off of a square wave ??

I suppose it boils down to how much signal is left in the mush as the
harmonics get higher and higher. Knew I shoulda held on to that
spectrum analyser I used to have. :-(
I suppose that's the proper answer though: get the rise/fall times as
small and possible, measure the specral output and pick a suitable
harmonic with enough energy in it to set it 'comfortably' above the
noise floor?
--

The BBC: Licensed at public expense to spread lies.

1319. Re: VN66AK Pin Out Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 13:22:19 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <1031h0bbguhbn74@corp.supernews.com>
Source record: 28506

I don't have the pinout, but it should be easy to figure out with an ohmmeter. Between two of the pins, measurements will show a diode. The anode of this diode is the source, the cathode is the drain. The remaining pin, which will measure open circuit in either direction to the other two, is the gate.

Roy Lewallen, W7EL

Dallas Lankford wrote:
> I would appreciate it very much if someone would send me the pin out for a
> Siliconix VN66AK. Thank you, Dallas
>
>

1320. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 16:40:18 UTC
From: Uncle Peter <radioconnectionNO@cox.netSPAM>
Message-ID: <hn6Yb.30419$gl2.19343@lakeread05>
Source record: 28507
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

```
"Jim Thompson" <thegreatone@example.com> wrote in message
news:tu503094d65spev1f85pk6ar96utptli7g@4ax.com...
> On Mon, 16 Feb 2004 00:18:49 GMT, "W3JDR" <joe@roccis.com> wrote:
> >
> I would think a "W3JDR" would know that even harmonics are *much*
> harder to obtain in nonlinear multipliers.
>
> ...Jim Thompson
> --
> | James E.Thompson, P.E. | mens |

One would think a "PE" could give the man a civil answer.

Pete
```

1321. Re: FS Ad - Electronic Components including TIL311 Hex Displays - LEDs - TTL Chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 16:56:55 UTC
From: jrparts@excite.com
Message-ID: <ed45b0c5.0402160856.5255e81a@posting.google.com>
Source record: 28508
Cross-posted to: rec.ham-radio.swap,rec.radio.amateur.homebrew,uk.radio.amateur

Most of the components listed below are still available.
Some of the quantities have changed. E-mail jrparts@excite.com
for details.

jrparts@excite.com (Parts & More) wrote:
> All prices are in US Funds.
>
> QTY. Part # Unit Price Description
> ---- --------- ---------- -----------
> OPTO.
>
> 94 TIL311 $7.00 ea. The TI TIL-311 is a Hexadecimal Dot
> Matrix Display with integral TTL driver
> electronics to accept, store & display
> 4-bit binary data, Epoxy package
> (Note: This part wholesales at about $16.50 each)
>
> 8 TIL311A $7.00 ea. The TI TIL-311A is a Hexadecimal Dot
> Matrix Display with integral TTL driver
> circuit to accept, store & display
> 4-bit binary data, Plastic package
>
> 11 DIS1417 $7.00 ea. The TI DIS-1417 is a Hexadecimal Dot
> Matrix Display with integral TTL driver
> circuit to accept, store & display
> 4-bit binary data, Epoxy package
>
> For a copy of the TIL311 Datasheet see:
> http://www-s.ti.com/sc/ds/til311.pdf and it is mirrored at
> http://umwnt1.physics.lsa.umich.edu/mttc/images/til311.pdf
>
> 275 Green LED $0.10 ea. Rectangular 5mm x 2mm face/lens
> $17.50 per bag of 250 ($0.07 each) and
>
> 8,250 Red LED $0.10 ea. T1 3/4, 5mm Diameter or 0.2" Diameter
> Sharp P/N: GL5PR4 (5mA at 1.9V)
> $17.50 per bag of 250 ($0.07 each) and
> $100 per box of 2000 ($0.05 each)
>
> 106 MAN6440 $0.95 ea. Dual Digit, Green 7 Segment display,
> 0.56" tall character, Common Cathode
> $15 per tube of 20 MAN- 6440 ($0.75 ea.)

>
> 85 FND6740 $0.95 ea. Dual Digit, Red 7 Segment display,
> 0.56" tall character, Common Cathode
> $15 per tube of 20 FND-6740 ($0.75 ea.)
>
>
> TTL CHIPS, DIP Package
>
> 525 7407N $0.18 ea. $4.00 per tube of 25 ($0.16 each)
> Hex Non-Inverted Buffer with
> Open-Collector outputs
>
> 605 74ALS20AN $0.19 ea. $4.00 per tube of 25 ($0.16 each)
> Dual 4-Input Positive NAND Gates
>
> 240 74ALS27AN $0.19 ea. $4.00 per tube of 25 ($0.16 each)
> Triple 3-Input Positive NOR Gates
>
> 1,325 74LS74AN $0.25 ea. $5.00 per tube of 25 ($0.20 each)
> Dual D-Type Positive Edge-triggered
> Flip-Flops with Preset and Clear.
>
> 100 74ALS74AN $0.25 ea. $5.00 per tube of 25 ($0.20 each)
> Dual D-Type Positive Edge-triggered
> Flip-Flops with Preset and Clear.
>
>
> RESISTORS
>
> 55,000 100 Ohm, 5%, 1/4 Watt Carbon film resistor, $1 per 100,
> $15 per box of 5000 or
> $100 for 50,000 pieces.
>
> 3,400 220 Ohm, 5%, 1/4 Watt Carbon film resistor, $1 per 100,
> $12 per box of 3400 or
>
> 3,400 680 Ohm, 5%, 1/4 Watt Carbon film resistor, $1 per 100,
> $12 per box of 3400 or
>
> A pack of 100 resistors is $4 inclusive shipping to anywhere
> in the US and Canada
>
> e-mail: jrparts@excite.com
>
> Minimum purchase $4 including postage.
>
> No shipping is included in the above prices. To quote a
> total including shipping, I require your full ZIP code or
> postal code in addition to a list of what you are interested
> in. Please specify the country for international orders

> outside of North America. The shipping you will be quoted
> is the cost of the postage stamp (plus insurance if requested).
>
> The only part that I will ship for a total of $4 (by regular
> mail) to anywhere in the US and Canada is a pack of 100
> resistors.
>
> All components are new. All semi-conductors are stored in
> anti-static tubes/bags or on anti-static foam if you purchase
> less than a tube/bag.
>
> Offers on the lot are welcome. Keep in mind that I am looking
> for a price below wholesale, but more than the commercial buyers
> of surplus electronic parts are offering.

1322. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 17:02:20 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <wI6Yb.50641$IF1.39453@nwrdny03.gnilink.net>
Source record: 28509
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

> > I would think a "W3JDR" would know that even harmonics are *much*
> > harder to obtain in nonlinear multipliers.

I guessed I missed Jim's comment in the earlier post, or I would have replied earlier. Jim, I'm not not sure what you're trying to say, but there seems to be a sarcastic undertone to the way you said it.

Anyway, it turns out that non-linear single-ended elements are great generators of even-order harmonics. That's why the classical HF/VHF multiplier circuit is typically a single ended transistor amplifier with output and input tuned to different frequencies. If you bias the device so it is non-linear, then it becomes a natural harmonic generator. You can enhance even-order generation and supress the odd-order generation by using a non-linear 'push-push' stage, just as you can suppress even order harmonics with a 'push-pull' stage.

In either case, the important thing to remember is that symmetrical clipping or limiting generates mostly odd-order distortion and unsymmetrical clipping or limiting generates mostly even order distortion. The quantification of this is left to those more mathematically inclined.

Joe
W3JDR

1323. Re: HP 456A ??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 17:07:04 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <1031u5so9dgebd0@corp.supernews.com>
Source record: 28510
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.equipment,rec.antiques.radio+phono

Thanks to David DiGiacomo I've got the info and it looks like the B+ is 5.4 VDC at 5.5 ma and the B- is 8.1 VDC at 20 microamps! HP used a small centrer tapped transformer at about 25 volts that was regultaed down to the 8.1 and 5.4. I can't find anything on the physical size of the xfrmr but it has to be no bigger than end of ones thumb,but maybe they used a wall wart but I kind of doubt it. I've not had any experience with real small low current xfmrs that take 115VAC to 20 or 30 VAC and would appreciated any ideas on what to use. A wall wart would be my last resort.
tnx
hank wd5jfr
"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:102v13p38679b12@corp.supernews.com...
> I just got this HP 456A AC Current Probe and need some help to get it
going.
> The 1977 HP catalog indicates that it could operate 400 hours on
batteries,
> not very long for what's in it. The dead batteries that came with it are
> Mallory TR 236R at 8.1 volts and TR 234R at 5.4 volts, these are C size
> diameter. There are only two 2N5087 transistors, a diode, and a few
> resistors and capacitors in the circuit, what's the current draw? I am
not
> sure that these are the correct batteries but would like to know if anyone
> out there can be confirm the batteries or has a schematic, manual or AC
> power supply. If I can't find an HP optional AC supply I think I'll
build
> a little Zener stabilized supply after I get the voltages confimred.
> tnx
> Hank WD5JFR
>
>

1324. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 17:19:49 UTC
From: Jim Thompson <thegreatone@example.com>
Message-ID: <ulu1309j5rrg2p0nbg33tr4c74f5cfi4q4@4ax.com>
Source record: 28511
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 16 Feb 2004 17:02:20 GMT, "W3JDR" <joe@roccis.com> wrote:

>> > I would think a "W3JDR" would know that even harmonics are *much*
>> > harder to obtain in nonlinear multipliers.
>
>I guessed I missed Jim's comment in the earlier post, or I would have replied earlier.
>Jim, I'm not not sure what you're trying to say, but there seems to be a sarcastic
undertone to the way you said it.

Only mildly so, just "funning" you ;-)

>
>Anyway, it turns out that non-linear single-ended elements are great generators of
even-order harmonics. That's why the classical HF/VHF multiplier circuit is typically a
single ended transistor amplifier with output and input tuned to different frequencies. If
you bias the device so it is non-linear, then it becomes a natural harmonic generator. You
can enhance even-order generation and supress the odd-order generation by using a
non-linear 'push-push' stage, just as you can suppress even order harmonics with a
'push-pull' stage.
>
>In either case, the important thing to remember is that symmetrical clipping or limiting
generates mostly odd-order distortion and unsymmetrical clipping or limiting generates
mostly even order distortion. The quantification of this is left to those more
mathematically inclined.
>
>Joe
>W3JDR

It depends on what your are starting from. If it's a sine wave, yes
even harmonics can be made from diode non-linearities.

The OP has a inverter-style XTAL oscillator, output very nearly
square.

A square wave is rich in odd harmonics, a perfect square wave has NO
even harmonics.

...Jim Thompson
--
James E.Thompson, P.E.	mens
Analog Innovations, Inc.	et
Analog/Mixed-Signal ASIC's and Discrete Systems	manus
Phoenix, Arizona Voice:(480)460-2350	
E-mail Address at Website Fax:(480)460-2142	Brass Rat
http://www.analog-innovations.com	1962

I love to cook with wine. Sometimes I even put it in the food.

1325. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 17:52:17 UTC
From: SWbeginner <SWbeginner@nowhere.com>
Message-ID: <10320qhoifo5k9c@corp.supernews.com>
Source record: 28512

I didn't have any luck bidding on EBAY.

So I just built a PIC 16f84 based 4 LED digit counter. In less than a week I built the programmer, learnt to use the MPASM, breadboarded the demo circuit and found a lot of PIC based counter projects. I'm learning to code slowly but at least there are only 35 instructions.

The LED's take up to 10mA per digit.

I found most popular LCD modules have a standard Hitachi HD44780 interface

1326. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 17:52:29 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <xr7Yb.29523$M8.26585@nwrdny02.gnilink.net>
Source record: 28513
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

>
> It depends on what your are starting from. If it's a sine wave, yes
> even harmonics can be made from diode non-linearities.
>
> The OP has a inverter-style XTAL oscillator, output very nearly
> square.
>
> A square wave is rich in odd harmonics, a perfect square wave has NO
> even harmonics.
>

Oh! I see what you're talking about...
I presumed that he was starting with a single spectral component (sine wave) and wanted to end up with another single spectral component.

Joe
W3JDR

1327. WTB Heathkit IB-2A impedance bridge

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 18:16:28 UTC
From: enigma_y_2000@yahoo.com
Message-ID: <9722301ln14ea9k5jjh1hfcsnklflmp97a@4ax.com>
Source record: 28514

Hi,

I want to buy a Heathkit IB-2A impedance bridge. Please email me with price, cond, etc.

Thanks,

Bob

1328. WTB Heathkit IB-2A impedance bridge

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 18:17:27 UTC
From: enigma_y_2000@yahoo.com
Message-ID: <t822301kafbho5uphjif48uvcpv0ai3345@4ax.com>
Source record: 28515

Hi,

I want to buy a Heathkit IB-2A impedance bridge. Please email me with price, cond, etc.

Thanks,

Bob

1329. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 18:28:14 UTC
From: Dale Parfitt <par@parelectronics.com>
Message-ID: <2Z7Yb.11805$wD5.8153@nwrddc03.gnilink.net>
Source record: 28516

> So I just built a PIC 16f84 based 4 LED digit counter. In less than a
week
> I built the programmer, learnt to use the MPASM, breadboarded the demo
> circuit and found a lot of PIC based counter projects. I'm learning to
code
> slowly but at least there are only 35 instructions.
>
> The LED's take up to 10mA per digit.
>
> I found most popular LCD modules have a standard Hitachi HD44780 interface
>
I am very interested in your design- do you have it documented anywhere?

Thanks,

Dale W4OP

1330. Damping Higher Harmonics on a parallel LC-Oscillator? (1 port Low-, High-, Bandpasses?)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 18:35:27 UTC
From: abcdstutzer@evard.ch
Message-ID: <aca3ec4c.0402161035.12f1d8ac@posting.google.com>
Source record: 28517

Hi,

I built a small FM Radio as shown on
http://members.aol.com/torkraemer/ukwsender/ukwsender.html.
As it is it works pretty well, allthough I operate it without any
adition antenna.

Of course there are pretty high (unwanted) peaks in the frequency-band
at multiples of the operating frequency.
Because I don't want to use an additional antenna, I can't filter the
signal on its way from L1 to the antenna with a common "2-port
Bandpass".
Putting such a Bandpass (or Lowpass) between the DC-Source and the
LC-Circuit did not seem to work well.

So how can I damp those harmonics on L1 Coil? I thought of some kind
of frequency dependent impedance in parallel with the Coil.

I tried this with another LC-prallel Circuit which has an impedance of
approx. 0 Ohms at 200 Mhz. This works as expected but seems a bit
unsophisticated and the Impedance falls too slow as the frequency
approaches the 200Mhz.

Unfortunately I have no Idea how to design a "higher order
1-port-Bandpass", or even more likeably a Highpass.

What would you recommend?
What shoud I read?
Any suggestions are welcome.

Thanks to all, and sorry for the lenght of the message.

Diego S.

1331. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 18:44:45 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <9r3230pv6m7vif4kl19pv2lkjmc32tsg49@4ax.com>
Source record: 28518
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 16 Feb 2004 11:40:18 -0500, " Uncle Peter"
<radioconnectionNO@cox.netSPAM> wrote:

>
>"Jim Thompson" <thegreatone@example.com> wrote in message
>news:tu503094d65spev1f85pk6ar96utptli7g@4ax.com...
>> On Mon, 16 Feb 2004 00:18:49 GMT, "W3JDR" <joe@roccis.com> wrote:
>> >
>> I would think a "W3JDR" would know that even harmonics are *much*
>> harder to obtain in nonlinear multipliers.
>>
>> ...Jim Thompson
>> --
>> | James E.Thompson, P.E. | mens |
>
>
>One would think a "PE" could give the man a civil answer.

Jim's not a civil engineer...

--
John Fields

1332. Re: How do you use an LCC SMD device - holders or carriers or ??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 18:51:37 UTC
From: Wim Ton <wimton@blueyonder.co.uk>
Message-ID: <%i8Yb.26566$ul3.683@news-binary.blueyonder.co.uk>
Source record: 28519

"Bob Monaghan" <rmonagha@engr.smu.edu> wrote in message
news:c0p503oau1@blaze.seas.smu.edu...
>
> Greetings,
>
> I would like to use a ceramic 8 lead LCC device (accelerometer) in a
> project but wonder on the best way to mount and use it in a one-off
> project? The device is 5x5mm square, three contacts on each side and one
> contact on top and one on the bottom (total 8). So we are dealing with 1mm
> spacing - eeek! ;-)

I used a SMD prototype board with the pads 1.27 mm apart. As it are only 3
pad, you get away with the difference in pitch.
Wim
.

1333. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 19:02:45 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c0r480$i7$1@newshost.mot.com>
Source record: 28521
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Not really, Jim...unless you mean something special by "nonlinear multipliers" like diodes/varactors which I suspect fall under your comment. In the two-way radios of the 60's & early 80's before synthesizers, I designed many a single stage multiplier of 2x or 3x, which were preferred and sometimes 4x. They worked very well...using cap input coupling, to keep the base Z low at the harmonics and keeping the conduction angle optimized for output level. Also, the adjacent harmonics are easier to filter than higher orders of multiplication (when that is a factor. Only a single resonant circuit was required between stages.
The bottom line depends upon the spurious requirements. Then there are always preferences for what we may have used in the past - and what the application actually is.
Starting with a spectral comb(like a square wave or other pulse-type waveform) and picking off the desired harmonic can also be very effective, but again, it depends upon the specific application.
I did a synthesizer mixer with no tuned circuits to get from 40 MHz crystal oscillator to 220MHz to mix down a VCO to an IF for the programmable divider. Was really sweet! Did the same for what I believe was the very first synthesized 2M hand held in 1973. A Motorola HT220. Even had the Transmit VCO _ON_ yes _ON_ the TX frequency. Total current drain was 7ma. Tx spurious (-70dBc) better than the original (-35-40dB) Still have it.

--
Steve N, K,9;d, c. i My email has no u's.

"Jim Thompson" <thegreatone@example.com> wrote in message news:tu503094d65spev1f85pk6ar96utptli7g@4ax.com...
> On Mon, 16 Feb 2004 00:18:49 GMT, "W3JDR" <joe@roccis.com> wrote:
>
> >I think it boils down to something very practical:
> >...It becomes a matter of how close and how large the
> >undesired spectral components are compared to the desired spectral
> >components. ...
> >As an example, a x4 multiplier stage will have a desired output at Fin x 4,
> >and close-in undesired products at Fin x 3 and Fin x 5. ...
> >Joe, W3JDR
> >
> [snip]
>
> I would think a "W3JDR" would know that even harmonics are *much*
> harder to obtain in nonlinear multipliers.
>
> ...Jim Thompson

1334. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 19:03:46 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <cv32309g3qjvg215oguc2vlgor1200sbbc@4ax.com>
Source record: 28520
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 16 Feb 2004 10:19:49 -0700, Jim Thompson
<thegreatone@example.com> wrote:

>It depends on what your are starting from. If it's a sine wave, yes
>even harmonics can be made from diode non-linearities.
>
>The OP has a inverter-style XTAL oscillator, output very nearly
>square.
>
>A square wave is rich in odd harmonics, a perfect square wave has NO
>even harmonics.

Starting with a perfect square wave at f1, bang the hell out of a diode
with it, and then bandpass it and the 3rd harmonic (f2) separately, then
mix them to get f1, f2, f1+f2, and f1-f2. Using a doubly balanced mixer
will get rid of f1 and f2, then notching out f1+f2 will leave f1-f2,
which will be 2f1, that non-existent second harmonic.

--
John Fields

1335. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 19:06:10 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c0r4ebit1@newshost.mot.com>
Source record: 28522
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

See my previous post. What is your application? That would help get better
advise.

--
Steve N, K,9;d, c. i My email has no u's.

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:0m9130h2f0b0p9vnv6qajoplpudkqetvk8@4ax.com...
> On Sun, 15 Feb 2004 16:46:32 -0700, Jim Thompson
> <thegreatone@example.com> wrote:
>
> >On Sun, 15 Feb 2004 23:48:47 +0000, Paul Burridge
> ><pb@osiris1.notthisbit.co.uk> wrote:
> >
> >>What's the maximum multiplication factor it's practical and sensible
> >>to attempt to achieve in one single stage of multiplication? (Say from
> >>a 7Mhz square wave source with 5nS rise/fall times.)
> >
> >You ought to be able to answer that yourself... what's the spectral
> >roll-off of a square wave ??
>
> I suppose it boils down to how much signal is left in the mush as the
> harmonics get higher and higher. Knew I shoulda held on to that
> spectrum analyser I used to have. :-(
> I suppose that's the proper answer though: get the rise/fall times as
> small and possible, measure the specral output and pick a suitable
> harmonic with enough energy in it to set it 'comfortably' above the
> noise floor?
> --
>
> The BBC: Licensed at public expense to spread lies.

1336. Re: Do we have the technology to do this?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 19:13:00 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c0r4r8$r4$1@newshost.mot.com>
Source record: 28523

I believe he is talking about adjacent channel signals which are much
stronger than the desired and trying to see if there is a way to "fix" that.
Capture does not apply for this situation. Capture is a co-channel effect
and is better the wider the whole system is, not just the IF.

--
Steve N, K,9;d, c. i My email has no u's.

"R J Carpenter" <rcarpen@erols.com> wrote in message
news:402ea6f9$0$3104$61fed72c@news.rcn.com...
>
> "Richard" <nearlynews_email@ntlworld.com> wrote in message
> news:c0liug$18kjmn$1@ID-150848.news.uni-berlin.de...
>
> > Can you make a circuit that responds only to the wanted
> > station when it is just fractionally stronger than the unwanted station?
>
> That's called "capture ratio". Better receivers have lower numbers -
> smaller difference required to suppress unwanted station. They have
numbers
> like a VERY few dB.
>
> To get this you need very flat IF within the passband - no ripples in
> response.
>
> A wideband limiter and wide and very linear discriminator.
>
> The National "Criterion" series of tuners from 50 years ago were among the
> first to attempt this. IIRC, there were HH Scott tuners like this as
well.
>
> All bets are off if you're trying to recover stereo.
>
> 73 de bob w3otc
>
>

1337. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 19:40:00 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <k09Yb.53529$KV5.5863@nwrdny01.gnilink.net>
Source record: 28524
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"> Starting with a perfect square wave at f1, bang the hell out of a diode
> with it, and then bandpass it and the 3rd harmonic (f2) separately, then
> mix them to get f1, f2, f1+f2, and f1-f2. Using a doubly balanced mixer
> will get rid of f1 and f2, then notching out f1+f2 will leave f1-f2,
> which will be 2f1, that non-existent second harmonic."
>
Oh yuchh...that sounds painful!
Why not just distort the symmetry of the square digitally (like drive it into an exclusive-or with a small delay on one input) to make a short impulse, then bandpass filter the output? Or staying in the purely digital domain, use same said exclusive-or and delay one of the two inputs by t/4 (t=period of input sq wave) and get a 2*F square wave out.

Joe
W3JDR

1338. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 19:45:10 UTC
From: averyfineman@aol.com
Message-ID: <20040216144510.01019.00000484@mb-m25.aol.com>
Source record: 28525

In article <ea0030pj96jdunmhsmelfvimqm1tstp5qf@4ax.com>, Paul Burridge <pb@osiris1.notthisbit.co.uk> writes:

>What's the maximum multiplication factor it's practical and sensible
>to attempt to achieve in one single stage of multiplication? (Say from
>a 7Mhz square wave source with 5nS rise/fall times.)

Paul, past state of the hardware art (past 60 years) indicates that triplers are the practical maximum. Quintuplers have been done but those are rare in described applications.

In 1955 I had hands-on experience with a septupler (7 x multiplier) using a 2C39 and a cavity-tuned plate circuit at 1.8 GHz. That was in a General Electric microwave radio relay terminal designed about 1950. Of nine terminals, two had to "QSY" to new crystal-controlled microwave center frequencies for second-level contingency operation. Difficult and fussy to do but was do-able...the crystal was also 7th overtone in a vacuum tube oscillator but was followed by a buffer stage feeding a tripler, another buffer, then the septupler which fed another 2C39 as the pulse-modulated final for 12 W peak output at 1.8 GHz. [from memory and 35mm slides...big GE manual went to recycle a long time ago] That's the only septupler application that I am aware of...no doubt there are others, somewhere.

General Electric must have had some division/work-group with lots of work in old frequency control methods. A local NTSC color sub-carrier generator-regenerator made by GE had extensive use of "locked oscillators" for frequency multiplication and division, but mostly at frequencies lower than 7 MHz. Haven't come across any practical hardware on locked oscillators except for two mentions in older journals, trade papers. One of those used transistors as active devices.

Doublers and quadruplers have been made using both diodes and tube-or-transistor active devices. That's relatively easy with non-square waveforms (distorted sinewaves); square waves have high odd harmonic energy, low even harmonic energy.

Making practical, reproducible active multipliers in the home shop is, practically, a trial-and-error process involving playing with cut-off bias of the active device input, energy and harmonic content of the source, and Q of the multiplier's output stage. In the past I've made tripling-in-the-plate pentode crystal oscillators using fundamental frequency quartz but those were highly dependent on getting the highest impedance tuned plate circuit and needed scope viewing to check output waveforms. Not very reproducible.

There's no "easy" way to do it that will "work every time" despite
the claims of many. :-)

Digital division IS straightforward up to about 1 GHz based on
such technology over the last 3 decades. That's why PLLs came
to prominence in frequency control techniques up to UHF.

Len Anderson
retired (from regular hours) electronic engineer person

1339. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 20:01:50 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <088230l2n7oil8ob0972hr7doder838qpl@4ax.com>
Source record: 28527
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 16 Feb 2004 19:40:00 GMT, "W3JDR" <joe@roccis.com> wrote:

>"> Starting with a perfect square wave at f1, bang the hell out of a diode
>> with it, and then bandpass it and the 3rd harmonic (f2) separately, then
>> mix them to get f1, f2, f1+f2, and f1-f2. Using a doubly balanced mixer
>> will get rid of f1 and f2, then notching out f1+f2 will leave f1-f2,
>> which will be 2f1, that non-existent second harmonic."
>>
>Oh yuchh...that sounds painful!

Just making a point for Mr. T. :-)

>Why not just distort the symmetry of the square digitally (like drive it into an exclusive-or with a small delay on one input) to make a short impulse, then bandpass filter the output? Or staying in the purely digital domain, use same said exclusive-or and delay one of the two inputs by t/4 (t=period of input sq wave) and get a 2*F square wave out.

Sure, why not?

--
John Fields

1340. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 20:03:20 UTC
From: averyfineman@aol.com
Message-ID: <20040216150320.23307.00006643@mb-m29.aol.com>
Source record: 28526

In article <k09Yb.53529$KV5.5863@nwrdny01.gnilink.net>, "W3JDR"
<joe@roccis.com> writes:

>This is a multi-part message in MIME format.
>
>------=_NextPart_000_00CD_01C3F49A.C1DF8CA0
>Content-Type: text/plain;
> charset="iso-8859-1"
>Content-Transfer-Encoding: quoted-printable
>
>"> Starting with a perfect square wave at f1, bang the hell out of a =
>diode
>> with it, and then bandpass it and the 3rd harmonic (f2) separately, =
>then
>> mix them to get f1, f2, f1+f2, and f1-f2. Using a doubly balanced =
>mixer
>> will get rid of f1 and f2, then notching out f1+f2 will leave f1-f2,
>> which will be 2f1, that non-existent second harmonic."
>>=20
>Oh yuchh...that sounds painful!=20
>Why not just distort the symmetry of the square digitally (like drive it =
>into an exclusive-or with a small delay on one input) to make a short =
>impulse, then bandpass filter the output? Or staying in the purely =
>digital domain, use same said exclusive-or and delay one of the two =
>inputs by t/4 (t=3Dperiod of input sq wave) and get a 2*F square wave =
>out.

...or just use a small toroid transformer, a pair of diodes arranged
like a full-wave rectifier for wideband frequency doubling? :-)

While using digitial techniques sounds cool at first, the above
technique can generate all kinds of PM that isn't noticed on time-
domain viewing with a scope. There are many ways to cure that PM
or incidental FM but all involve lots more circuitry than the simple
diode doubler which can be inherently broadband over half an octave.

Depends on the application of the multiplier and the overall specs
on purity of the multiplied RF.

Len Anderson
retired (from regular hours) electronic engineer person

1341. Re: Do we have the technology to do this?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 20:42:40 UTC
From: Richard <nearlynews_email@ntlworld.com>
Message-ID: <c0r9u1$1a8ifa$1@ID-150848.news.uni-berlin.de>
Source record: 28528

Steve Nosko wrote:
> I believe he is talking about adjacent channel signals which are much
> stronger than the desired and trying to see if there is a way to "fix"
> that. Capture does not apply for this situation. Capture is a co-channel
> effect and is better the wider the whole system is, not just the IF.

Capture effect:

http://en.wikipedia.org/wiki/Capture_effect

It's an intersting phenomena, and potentially useful. If I could phase null (at the antenna) the local stronger signal then it would dissappear as inteference if it was a few db below the wanted signal.

Only problem is, is that if you cannot get the inteferring signal below the wanted one, it's works very bad for you, because you cannot listen to an inteferred with signal. Which is better than nothing I guess in some cases.

Pity that somehow you cannot design circuitry which recognises a 100Khz difference between the wanted FM station and the unwanted FM station and proceed to demodulate the wanted one only. If it were possible, it would have been done by now. Maybe you could do it digitally,I dunno.

1342. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 21:02:02 UTC
From: James Meyer <jmeyer@nowhere.com>
Message-ID: <ejb230l2c3hl0qr2sgkr6bo7k1qic00ppb@4ax.com>
Source record: 28529
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 16 Feb 2004 13:03:46 -0600, John Fields <jfields@austininstruments.com>
posted this:

>Starting with a perfect square wave at f1, bang the hell out of a diode
>with it, and then bandpass it and the 3rd harmonic (f2) separately, then
>mix them to get f1, f2, f1+f2, and f1-f2. Using a doubly balanced mixer
>will get rid of f1 and f2, then notching out f1+f2 will leave f1-f2,
>which will be 2f1, that non-existent second harmonic.

What purpose does the diode serve? You're already starting with a
"perfect" square wave.

OTOH, if you have had some bad experiences with diodes in the past, I
can easily understand your tendency to abuse them as often as you can.

Jim

1343. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 21:09:39 UTC
From: John Woodgate <jmw@jmwa.demon.contraspam.yuk>
Message-ID: <vzNuq8KTGTMAFwsh@jmwa.demon.co.uk>
Source record: 28530
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

I read in sci.electronics.design that John Fields <jfields@austininstrum
ents.com> wrote (in <cv32309g3qjvg215oguc2vlgor1200sbbc@4ax.com>) about
'Frequency multiplication', on Mon, 16 Feb 2004:

>Starting with a perfect square wave at f1, bang the hell out of a diode
>with it, and then bandpass it and the 3rd harmonic (f2) separately, then
>mix them to get f1, f2, f1+f2, and f1-f2. Using a doubly balanced mixer
>will get rid of f1 and f2, then notching out f1+f2 will leave f1-f2,
>which will be 2f1, that non-existent second harmonic.

No need to abuse any diodes. The third harmonic is already there, just
10 dB down. You only need a bit of gain after the peaky filter.
--
Regards, John Woodgate, OOO - Own Opinions Only.
The good news is that nothing is compulsory.
The bad news is that everything is prohibited.
http://www.jmwa.demon.co.uk Also see http://www.isce.org.uk

1344. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 21:11:04 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <9ac2301e3jtqlv9nror5ugombe3u3c23hi@4ax.com>
Source record: 28531
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 16 Feb 2004 21:02:02 GMT, James Meyer <jmeyer@nowhere.com>
wrote:

>On Mon, 16 Feb 2004 13:03:46 -0600, John Fields <jfields@austininstruments.com>
>posted this:
>
>
>>Starting with a perfect square wave at f1, bang the hell out of a diode
>>with it, and then bandpass it and the 3rd harmonic (f2) separately, then
>>mix them to get f1, f2, f1+f2, and f1-f2. Using a doubly balanced mixer
>>will get rid of f1 and f2, then notching out f1+f2 will leave f1-f2,
>>which will be 2f1, that non-existent second harmonic.
>
> What purpose does the diode serve? You're already starting with a
>"perfect" square wave.

Duhhh.... None, of course.

Thanks.
--
John Fields

1345. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 21:18:25 UTC
From: averyfineman@aol.com
Message-ID: <20040216161825.21457.00004030@mb-m10.aol.com>
Source record: 28532

In article <2Z7Yb.11805$wD5.8153@nwrddc03.gnilink.net>, "Dale Parfitt"
<par@parelectronics.com> writes:

> > So I just built a PIC 16f84 based 4 LED digit counter. In less than a week
>> I built the programmer, learnt to use the MPASM, breadboarded the demo
>> circuit and found a lot of PIC based counter projects. I'm learning to code
>> slowly but at least there are only 35 instructions.
>>
>> The LED's take up to 10mA per digit.
>>
>> I found most popular LCD modules have a standard Hitachi HD44780 interface
>>
>I am very interested in your design- do you have it documented anywhere?
>
>Thanks,
>
>Dale W4OP

Here are some links to related projects involving PIC micros:

http://lea.hamradio.si/~s57nan/ham_radio/fmtr.html

http://www.qsl.net/om3cph/counter/ldc/contribs/pic_flck.htm
- includes an interesting "huff and puff" variant for VFO locking

http://www.qsl.net/g6uyj/freqcounter.html

http://members.optushome.com/vk3biz/micro.html
- basically a page of links to microcontroller projects

The first three are quite detailed in their descriptions, include source
code and pictures of completed units (two have PCB patterns).

Two pages of hits using search string "PIC frequency counter." There
are more sites of project examples out there.

Len Anderson
retired (from regular hours) electronic engineer person

1346. Re: Do we have the technology to do this?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 22:00:43 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c0relp$5ol$1@newshost.mot.com>
Source record: 28534

"Richard" <nearlynews_email@ntlworld.com> wrote in message
news:c0r9u1$1a8ifa$1@ID-150848.news.uni-berlin.de...
> Steve Nosko wrote:
> > I believe he is talking about adjacent channel signals which are much
> > stronger than the desired and trying to see if there is a way to "fix"
> > that. ...
> Capture effect:
> http://en.wikipedia.org/wiki/Capture_effect
> It's an intersting phenomena, and potentially useful.

But I believe not here. Only for co-channel interference.

> If I could phase null
> (at the antenna) the local stronger signal ... if you cannot get the
> inteferring signal below the

This is a sticky problem if the undesired is only 100kHz off center with the standard 200kHz system design. I this case you can have significant energy within the Rx passband coming from the undesired. I can't say how low the undesired needs to be.

>
> Pity that somehow you cannot design circuitry which recognises a 100Khz
> difference between the wanted FM station and the unwanted FM station and
> proceed to demodulate the wanted one only. If it were possible, it would
> have been done by now. Maybe you could do it digitally,I dunno.

As you have surmised, the "null in the antenna pattern" is probably your best bet. This is done in some rather dificult situations. One is on a radio equiped copter where the undesides TX is on board! (the TX output itself can be sampled) The antenna with a null would be my first path. I also have an FM band adjacent channel problem I'd like to solve and will (when I get time) try a nulling antenn.

The "adcock" type would be one of the easiest. Two vertical dipoles (probably folded, but not necessary) fed out of phase. There are two nuls toward the "flat side" or broad-side. Point the null at the undesired. The "two vertical cardioid" is just as easy. I think it is two vertical dipoles spaced (I think) 1/4 wave apart with a 3/4 wave coax (electrical) between and fed at one of the dipoles. The 1/4 wave (free-space) physical s pacing gives 90 degrees and the 3/4 (in coax) gives another 90 for a total of 180 - thus cancelling. 3/4 coax is needed because 1/4 will be shorter that the free-space 1/4 spacing of the dipoles.

I recently saw both of these in the Ham transmitter hunting book. They are probably both on the net if you know where to look. Try amateur radio DF or

ARDF.
http://members.aol.com/BmgEngInc/Adcock.html
Probably the transformer is not needed.

I took a quick look and can't find more, so Here's a web ring on DF:
http://m.webring.com/hub?ring=foxhunt

Other DF sites, but I don't know if they have for U. Some have more links.
http://www.panix.com/clay/ham/rdf.html
http://www.ardf-uk.co.uk/index2.html
http://members.aol.com/fdecker/rdf.htm
http://members.aol.com/homingin/index.html
Dual null & cardioid figures, prpbably not helpful.
http://members.aol.com/homingin/hfinderfix.html
Lota' links
http://members.aol.com/homingin/links.html

Another technique would also handle the afore mentined multipath problem.
This I will call the "Secondary Antenna & Canceller" (SAC) technique. It is
used in the military and commercial arena to solve some sticky strong signal
problems.
A secondary antenna is used and fed to an amplifier which has phase and
amplitute adjustments (under computer control for automatic tuning). The
output of this is fed back into the RX line (where the desired and undesired
signal are) and tuned for minimum interference. This amounts to a custom
antenna null. MFJ makes two for HF

http://www.mfjenterprises.com/contact.php

MFJ-1025 1.5 - 30 MHz Noise Canceling Antenna
MFJ-1026 1.5-30 MHz Deluxe Noise Canceller

http://www.mfjenterprises.com/products.php?prodid=MFJ-1025
http://www.mfjenterprises.com/products.php?prodid=MFJ-1026

>
--
Steve N, K,9;d, c. i My email has no u's.

1347. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 22:05:23 UTC
From: Stephen Quigg <steveq@bigtime.tip.csiro.au>
Message-ID: <slrnc32fl3.nut.steveq@bigtime.tip.csiro.au>
Source record: 28533
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

In article <ea0030pj96jdunmhsmelfvimqm1tstp5qf@4ax.com>, Paul Burridge wrote:
> What's the maximum multiplication factor it's practical and sensible
> to attempt to achieve in one single stage of multiplication? (Say from
> a 7Mhz square wave source with 5nS rise/fall times.)

Not radio, but interesting nevertheless. The older Hewlett-Packard cesium clocks, ie 5060/61/62 vintage multiplied a crystal oscillator up to 90 MHz in several stages. This fed into a step-recovery diode that sits in a cavity, and has 12.631... MHz applied to the SRD bias. The cavity selects the ***102nd*** harmonic ie 9180 MHz, and there are also sidebands at +/- 12.631.. MHz This is then fed into a hi-Q cavity tuned to the upper sideband ie 9192.631... MHz which is the desired cesium transition frequency.

Adjusting the whole thing was a bit fiddly, and there were also some factory-set adjustments that you NEVER TOUCHED unless you had plenty of time and a squillion dollars worth of test gear. This was all a 1960's design and was a bit of a stretch. The newer (5071) clocks do things QUITE differently.

Steve Quigg

1348. Re: Damping Higher Harmonics on a parallel LC-Oscillator? (1 port Low-, High-, Bandpasses?)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 22:08:15 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c0rf3r$5sa$1@newshost.mot.com>
Source record: 28536

An idea:
Use shunt feed and a pi network. It is a low pass filter. Since TR1 is
also the oscillator, you may need to add an amplifier.

```
+V
Choke
|
|-------Coil----> ANT
| | |
| = =
| | |
| gnd gnd
|
|
|
|/ Collector of TR1
B-|
|\ Emitter
```

"Diego Stutzer" <abcdstutzer@evard.ch> wrote in message
news:aca3ec4c.0402161035.12f1d8ac@posting.google.com...
> Hi,
>
> I built a small FM Radio as shown on
> http://members.aol.com/torkraemer/ukwsender/ukwsender.html.
> As it is it works pretty well, allthough I operate it without any
> adition antenna.
>
> Of course there are pretty high (unwanted) peaks in the frequency-band
> at multiples of the operating frequency.
> Because I don't want to use an additional antenna, I can't filter the
> signal on its way from L1 to the antenna with a common "2-port
> Bandpass".
> Putting such a Bandpass (or Lowpass) between the DC-Source and the
> LC-Circuit did not seem to work well.
>
> So how can I damp those harmonics on L1 Coil? I thought of some kind
> of frequency dependent impedance in parallel with the Coil.
>
> I tried this with another LC-prallel Circuit which has an impedance of
> approx. 0 Ohms at 200 Mhz. This works as expected but seems a bit
> unsophisticated and the Impedance falls too slow as the frequency
> approaches the 200Mhz.

>
> Unfortunately I have no Idea how to design a "higher order
> 1-port-Bandpass", or even more likeably a Highpass.
>
> What would you recommend?
> What shoud I read?
> Any suggestions are welcome.
>
> Thanks to all, and sorry for the lenght of the message.
>
> Diego S.

1349. Re: Do we have the technology to do this?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 22:24:42 UTC
From: averyfineman@aol.com
Message-ID: <20040216172442.22081.00004085@mb-m17.aol.com>
Source record: 28535

In article <c0r9u1$1a8ifa$1@ID-150848.news.uni-berlin.de>, "Richard"
<nearlynews_email@ntlworld.com> writes:

>Steve Nosko wrote:
>> I believe he is talking about adjacent channel signals which are much
>> stronger than the desired and trying to see if there is a way to "fix"
>> that. Capture does not apply for this situation. Capture is a co-channel
>> effect and is better the wider the whole system is, not just the IF.
>
>Capture effect:
>
>http://en.wikipedia.org/wiki/Capture_effect
>
>It's an intersting phenomena, and potentially useful. If I could phase null
>(at the antenna) the local stronger signal then it would dissappear as
>inteference if it was a few db below the wanted signal.
>
>Only problem is, is that if you cannot get the inteferring signal below the
>wanted one, it's works very bad for you, because you cannot listen to an
>inteferred with signal. Which is better than nothing I guess in some cases.

Simplistic explanations of "capture effect" don't help here.

The main, major cause of such strong signal interference is due to
the FM receiver's LIMITER stage. That stage (usually there are 2 to
3 of them) is biased such that a strong signal is going to clip or that
it will actually develop enough self-bias to clip even further. The end
result is that a limiter output is primarily composed of the strongest
signal's RF energy.

The action of a limiter is basically that of accepting only the strongest
signal and "pushing down" the energy of weaker signals, including
noise at the noise floor of the front end. THAT is what insures the FM
"clean signal" quality. It is also a sort of automatic AGC so that all
signals of the same modulation index will be demodulated to the same
audio level...even though the antenna input signal can vary considerably.

Such limiters have been used for some pulsed RF reception with the
ability to "push down" offending pulsed carrier frequencies' envelopes.

>Pity that somehow you cannot design circuitry which recognises a 100Khz
>difference between the wanted FM station and the unwanted FM station and
>proceed to demodulate the wanted one only. If it were possible, it would
>have been done by now. Maybe you could do it digitally,I dunno.

Not with "phasing" alone and not with limiters still in the IF chain. But, it has been done by other means -

The brute force method is to use a many-pole crystal bandpass filter ahead of all limiters. Even Heathkit did that. This cuts out very strong adjacent signals and the limiters will be less affected by such. With steep skirt selectivity, offending adjacent channel attenuation can be 60 db or greater.

A second method is to discard the limiter stages and try for a Ratio detector instead of the Foster-Seeley discriminator variants plus AGC on the non-limiting IF stages. Not a perfect solution but does work to some extent. Most NTSC TV receivers use a variation of that for TV sound, originally started many years ago as the "intercarrier sound" system to replace a separate limiter-discriminator IF strip; the first TV receivers actually had TWO IF strips...:-)

The most obvious way, and least familiar, is to use a large-bit digital A-to-D system and high-speed microprocessor to (1) Do the channel bandpass filtering with a "brick-wall" filter routine; (2) Do the FM demodulation directly after digital bandpass filtering by summing the sideband components of the FM signal; (3) Converting the demodulated IF in digital form back to analog audio. That's been done but the production costs for consumer electronics systems has only lately come down enough to warrant such use.

All of the methods I've given are prior art.

Len Anderson
retired (from regular hours) electronic engineer person

1350. Re: Simple Frequency Counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 22:38:04 UTC
From: SWbeginner <SWbeginner@nowhere.com>
Message-ID: <1032hica17rq6cc@corp.supernews.com>
Source record: 28537

I am using a program called batfreq.asm and looking at one called fmeter.asm

There are some errors with fmeter.asm. Anyone try that one?

1351. Re: Damping Higher Harmonics on a parallel LC-Oscillator? (1 port Low-, High-, Bandpasses?)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 22:44:21 UTC
From: kb <baltzer@gmx.net>
Message-ID: <20040216234421.75b24f46.baltzer@gmx.net>
Source record: 28538

Thanks,
but i dont want to use an antenna. Or did you mean the dc-input of the
LC-transistor-oscillator by "antenna"?

On Mon, 16 Feb 2004 16:08:15 -0600
"Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote:

> An idea:
> Use shunt feed and a pi network. It is a low pass filter. Since TR1 is
> also the oscillator, you may need to add an amplifier.
>
> +V
> Choke
> |
> |-------Coil----> ANT
> | | |
> | = =
> | | |
> | gnd gnd
> |
> |
> |
> |/ Collector of TR1
> B-|
> |\ Emitter
>
>
>
>
> "Diego Stutzer" <abcdstutzer@evard.ch> wrote in message
> news:aca3ec4c.0402161035.12f1d8ac@posting.google.com...
> > Hi,
> >
> > I built a small FM Radio as shown on
> > http://members.aol.com/torkraemer/ukwsender/ukwsender.html.
> > As it is it works pretty well, allthough I operate it without any
> > adition antenna.
> >
> > Of course there are pretty high (unwanted) peaks in the frequency-band
> > at multiples of the operating frequency.
> > Because I don't want to use an additional antenna, I can't filter the
> > signal on its way from L1 to the antenna with a common "2-port
> > Bandpass".

> > Putting such a Bandpass (or Lowpass) between the DC-Source and the
> > LC-Circuit did not seem to work well.
> >
> > So how can I damp those harmonics on L1 Coil? I thought of some kind
> > of frequency dependent impedance in parallel with the Coil.
> >
> > I tried this with another LC-prallel Circuit which has an impedance of
> > approx. 0 Ohms at 200 Mhz. This works as expected but seems a bit
> > unsophisticated and the Impedance falls too slow as the frequency
> > approaches the 200Mhz.
> >
> > Unfortunately I have no Idea how to design a "higher order
> > 1-port-Bandpass", or even more likeably a Highpass.
> >
> > What would you recommend?
> > What shoud I read?
> > Any suggestions are welcome.
> >
> > Thanks to all, and sorry for the lenght of the message.
> >
> > Diego S.
>
>

1352. Re: Do we have the technology to do this?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 22:56:10 UTC
From: Richard <nearlynews_email@ntlworld.com>
Message-ID: <c0rhof$1ancoi$1@ID-150848.news.uni-berlin.de>
Source record: 28539

Steve Nosko wrote:
> "Richard" <nearlynews_email@ntlworld.com> wrote in message
> news:c0r9u1$1a8ifa$1@ID-150848.news.uni-berlin.de...
>> Steve Nosko wrote:
>>> I believe he is talking about adjacent channel signals which are much
>>> stronger than the desired and trying to see if there is a way to "fix"
>>> that. ...
>> Capture effect:
>> http://en.wikipedia.org/wiki/Capture_effect
>> It's an intersting phenomena, and potentially useful.
>
> But I believe not here. Only for co-channel interference.
>
>> If I could phase null
>> (at the antenna) the local stronger signal ... if you cannot get the
>> inteferring signal below the
>
> This is a sticky problem if the undesired is only 100kHz off center
> with the standard 200kHz system design. I this case you can have
> significant energy within the Rx passband coming from the undesired. I
> can't say how low the undesired needs to be.

In the UK, where I am, the spacing between channels is 100Khz. And that is a real problem, because, as you say a lot of RF energy from the undesired station gets into the IF passband.

And so basically I was wondeting if the technolgy exists for the RX to know that energy from the undesired station, 100Khz off frequency, is to be ignored in the demodulation. I don't think it can be done, but if it could somehow the electronics would have to associate the unwanted energy with a non wanted station, and in a sense, ignore it. Just wondering if the technoloy is around to do that. Probably not. Only likely possible thru digital computing methods maybe.

1353. Re: markings on Screw Pitch Gauge?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 23:23:21 UTC
From: alanh_27@yahoo.com
Message-ID: <1e3670a7.0402161523.53873327@posting.google.com>
Source record: 28540
Cross-posted to: sci.engr.mech,rec.aviation.homebuilt,rec.crafts.metalworking,rec.crafts.woodturning,rec.radio.amateur.homebrew

> I've got an old screw pitch gauge that I inherited. There's no mfr's
> name marked on it, just "Number 137".

> the individual leaves are marked with two numbers each, but these
> numbers are not reciprocals. The first number is always a small
> integer which I presume is threads-per-inch.

> the second number is always a decimal.

> Any idea what the second set of numbers are?

pairs of numbers are
~~~~~~~~~~~~~~~~~~~
60 - 0.021
48 - 0.026
40 - 0.032
32 - 0.040
30 - 0.043
28 - 0.046
26 - 0.049
25 - 0.051
24 - 0.063
22 - 0.058
20 - 0.064
19 - 0.067
16 - 0.080
14 - 0.091
13 - 0.098
12 - 0.107
11 - 0.115
10 - 0.126
9 - 0.142
8 - 0.160
7 - 0.183
6 - 0.215
5 - 0.259
4-1/2 - 0.284 (sic)
4 - 0.320

looking at the leaves, "depth of thread" in inches seems the most
plausible to me. This item would date back to the 50's, I don't
believe there was too much metric action in American machine shops at
that time.
~~~~~~~~~~~~~~~~~~~

I'd try _measuring_ the depths with a micrometer, but I don't know where to measure to/from. How is thread depth defined? And by the way, who sets the standards on how these things are measured?

1354. thanks! Re: How do you use an LCC SMD device - holders??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 23:24:25 UTC
From: rmonagha@engr.smu.edu
Message-ID: <c0rjf9$j15$1@blaze.seas.smu.edu>
Source record: 28541

Thanks for the tips - glad to hear that it has worked for others ;-)
I have read up on the SMD use tips on several homebrew sites, but I'm not
sure my hands or eyes are good enough to do this. I'm just amazed there
aren't some snap in setups, esp. given the cost of some of these devices.

regards and best wishes to all

bob monaghan W5VC
--
****
* Robert Monaghan POB 752182 Southern Methodist Univ. Dallas Tx 75275 *
**********Standard Disclaimers Apply**********

1355. Effect of Amplitude Modulation on FM reception...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-16 23:48:28 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <96l230lthurb1ohdhcor0s3nbjj5iq5vrv@4ax.com>
Source record: 28542

Hi, guys,

ISTR.......
(through the mists of time) that the excessive bandwidth of an AM
transmission signal can interfere with the reception of a NBFM signal,
though the converse is not true. Can anyone confirm this (or else
flatly deny it/affirm it)?

Thanks,

p.
--

The BBC: Licensed at public expense to spread lies.

1356. Re: Effect of Amplitude Modulation on FM reception...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 01:03:33 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <FLdYb.51987$IF1.12093@nwrdny03.gnilink.net>
Source record: 28544

I don't think you can make a flat statement either way with the information supplied. The only thing that's for sure is NBFM has a constant power envelope whereas AM has a highly variable envelope. And why do you say AM has excessive bandwidth?. NBFM only can only approaches the bandwidth efficiency of AM when the FM modulation index gets very small.
When FM gets narrow enough (expressed by modulation index, not deviation), it's interference rejection is no better than AM.

Joe
W3JDR

news:96l230lthurb1ohdhcor0s3nbjj5iq5vrv@4ax.com...
> Hi, guys,
>
> ISTR.......
> (through the mists of time) that the excessive bandwidth of an AM
> transmission signal can interfere with the reception of a NBFM signal,
> though the converse is not true. Can anyone confirm this (or else
> flatly deny it/affirm it)?
>
> Thanks,
>
> p.
> --
>
> The BBC: Licensed at public expense to spread lies.

1357. Re: markings on Screw Pitch Gauge?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 01:36:34 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <97OdnX2atf7W_6zdRVn-iQ@ctc.net>
Source record: 28543
Cross-posted to: sci.engr.mech,rec.aviation.homebuilt,rec.crafts.metalworking,rec.crafts.woodturning,rec.radio.amateur.homebrew

```
>
> I'd try _measuring_ the depths with a micrometer, but I don't know
> where to measure to/from. How is thread depth defined? And by the
> way, who sets the standards on how these things are measured?

Can't help on the guage but here is where the standards are set.

http://www.astm.org/cgi-bin/SoftCart.exe/index.shtml?E+mystore

Look under ASTM if the link fails.
```

1358. Re: Carmatic card questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 03:53:01 UTC
From: Larry King <lking@startech.net>
Message-ID: <xegYb.9710$aH3.326276@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28545
Cross-posted to: rec.antiques.radio+phono,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.repair

"Robert Bonomi" <bonomi@host122.r-bonomi.com> wrote in message
news:a7bcf$402a2ae6$44a75e7a$24988@msgid.meganewsservers.com...
>
> (...snip...)
>
> the 026 and 029 were distinguishable by the _round_ keys that stuck up
from
> the keyboard, like a forest of dowels. The "129" had a
contemporary-looking
> keyboard. with a grid of square keys.
>

Yes, the 026 had the round keys but the 029 keyboard was basically the same
as the 129 (e.g., square keys).

Not a lot of difference otherwise between 029 and 129 keyboard, although
IIRC the 129 had a pair of LED 7-segment displays (fairly small in size)
which showed the column number [since the machine didn't have a drum card
assembly like the 029 did with the rotating numbered "scale" and fixed
pointer underneath it]. Also, the 129 had a big (relatively speaking)
rotary switch w/plastic knob on the area above the keys themselves to select
which program was currently active.

1359. Re: Effect of Amplitude Modulation on FM reception...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 04:56:57 UTC
From: averyfineman@aol.com
Message-ID: <20040216235657.11022.00004146@mb-m14.aol.com>
Source record: 28546

In article <96l230lthurb1ohdhcor0s3nbjj5iq5vrv@4ax.com>, Paul Burridge
<pb@osiris1.notthisbit.co.uk> writes:

>ISTR.......
>(through the mists of time) that the excessive bandwidth of an AM
>transmission signal can interfere with the reception of a NBFM signal,
>though the converse is not true. Can anyone confirm this (or else
>flatly deny it/affirm it)?

Paul, you need to be a bit more specific on the above.

First, if the AM carrier is not close to the FM center frequency, then
the only energy from the AM signal is from the sideband content of
the AM.

Second, if the AM sideband energy is below the FM carrier level,
the FM receiver limiter is going to do its suppression thing and
(in the receiver) lower the AM sideband level. The amount of AM
suppression depends on the relative no-modulation signal levels of
the two.

Alternate second: If the AM signal, any part, is stronger than the
FM signal's level, then the AM signal is going to "take over" and
that limiter will suppress the FM signal.

If the FM signal's swing happens to intrude on the passband of the
AM receiver - and its level is high enough - then some distorted
modulation from the FM signal will come through. The higher the
relative FM signal is to the AM level, the worse the interference from
distorted FM content. Conversely, if the AM signal is stronger than
the FM, then the distorted interference from the FM signal is less.

Very basic RFI stuff. You can confirm this yourself with a receiver
capable of demodulating AM and FM (make it narrowband if you
want, doesn't matter much here) and reasonably-calibrated AM
and FM signal sources. The interference of one against the other
will be due almost entirely to relative signal levels and the carrier
(no modulation) frequency differences versus the receiver selectivity
bandwidth.

About the only thing different between FM and NBFM in the receiver
is the final selectivity bandwidth. There will be some sort of limiting
in there even with simple detector types.

Len Anderson
retired (from regular hours) electronic engineer person

1360. Re: markings on Screw Pitch Gauge?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 05:06:51 UTC
From: Leo Lichtman <l.lichtman@worldnet.att.net>
Message-ID: <LjhYb.35214$hR.865023@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28447
Cross-posted to: sci.engr.mech,rec.aviation.homebuilt,rec.crafts.metalworking,rec.crafts.woodturning,rec.radio.amateur.homebrew

Alan Horowitz wrote: (clip) the individual leaves are marked with two numbers each, but these numbers are not reciprocals.clip)
^^^^^^^^^^^^^

If you multiply the two numbers together, you get about 0.12 for every pair, so they are reciprocals multiplied by the constant .12. That means that the numbers are related to the distance per thread, or the thread depth in some way, but I havn't taken the time to look for it.

1361. Re: need household-substance anti-static coating for plastic meter cover

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 05:17:59 UTC
From: mustang <adrian@ratherbeflying.net>
Message-ID: <4031a449_4@news.chariot.net.au>
Source record: 28448
Cross-posted to: sci.chem.coatings,sci.physics,sci.electronics.repair,rec.radio.amateur.homebrew

Just lightly wipe the surface with a weak solution of household laundry
fabric conditioner/softener periodically!

This has solved probs for me.

Adrian VK5AW

Alan Horowitz wrote:
> situation is a plastic meter cover, on a large process control board,
> onboard a tanker ship, deployed. The meter movement underneath
> experiences wild meter-swings, associated with finger contact,
> presumed to be due to static electricity.
>
> we have a decent collection of household-type substances, also a small
> collection of industrial substances.
>
> we have infrequent but regular access to Navy Exchanges, which are
> basically transplanted K-mart sort of outlet. Carries common american
> brand-name stuffs.
>
> The official Navy Supply Chain can deliver almost anything, but not
> always within your lifetime.....

1362. Re: Futaba VFD 2x16 display

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 06:05:54 UTC
From: dsands@ev1.net
Message-ID: <eec6b79a.0402162205.4125d152@posting.google.com>
Source record: 28449

tk <gamach1@ispwest.com> wrote in message news:<c0occ5010fl@enews3.newsguy.com>...
> I would like to use this 2 line VFD in a VFO project ... can see it a
> lot better than LCD. The part # is US1625D03B and it is a 5 volt part.
> I have a 21 page manual from the Inet and am trying to drive it with a
> PIC. This device uses a clock and data line and accepts 8 bit serial
> transfer. Have had minimal success.... I can display several characters
> on line 1 but when I try to send a stream of characters it starts a
> crazy oscillation on the signal lines and the display goes bonkers. I
> suspect the problem is timing and/or control character sequence. I
> remember the terrible time we all had with LCD's till someone cracked
> the control sequence mystery. I would appreciate any information or
> code samples to get this dude working.
>
> Thanks
>
> Ted in Atlanta KD4EE

Hi
First are you driving the Futaba with the SSP Serial Synchronous Port
found on most PICS? These work better than just posting data on any
I/O line and clocking it on another. From looking at the spec's, I do
not believe speed is the problem but synchronization of data and
clock. Personally I like to use parallel interfacing because you have
greater control over the data. Of course that would require more data
lines.
Don

1363. Re: Do we have the technology to do this?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 06:32:22 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <cg9330po45kuf6optahkuglj6ece2lr3bb@4ax.com>
Source record: 28450

On Sat, 14 Feb 2004 16:39:52 -0000, "Richard"
<nearlynews_email@ntlworld.com> wrote:

>Do we
>have technology these days to do what we thought was impossible in this
>case?

While the sidebands above the wanted nominal carrier are mixed with
the lower sidebands of the unwanted signal, but if the lower sidebands
of the wanted signal and the upper sidebands of the unwanted signal
are free from any interference, it might be possible to determine
which sideband belongs to which signal and then demodulate them
separately.

This would at least require that all IF sidebands of both the wanted
and unwanted sidebands are digitised (prior to the limiter) and then
do some frequency domain processing after FFT.

When looking at an ordinary FM signal in frequency domain, there are
an infinite number of sidebands on each side of the nominal carrier
frequency (while in AM there is exactly one pair of sidebands) at
integer multiples of the baseband (audio) frequency. However, the
amplitude for each sideband is determined by the Bessel function of
the modulation index of each baseband signal. While the modulation
index for most audio tones is in practice quite low (below 5), there
are only going to be a few sidebands with any significant amplitude
around the nominal carrier. Thus, the bandwidth of an FM signal is not
infinite in practice.

For instance, in a stereo transmission, there are quite a lot of
signal amplitude around the baseband 38 kHz subcarrier frequency in
the area 36-40 kHz, thus there are going to be strong FM sidebands
around 36-40, 76-80 and possible 118-120 kHz around the carrier on
both sides.

Since there is some symmetry between the upper and lower sidebands, so
this may help reconstruct the missing sidebands if the other side of
the carrier is clean, while the other side is contaminated.

However, I have no idea if this has been attempted in practice.

Paul OH3LWR

1364. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 11:02:50 UTC
From: peg@slingshot.co.nz
Message-ID: <62069f15.0402170302.2fa98f53@posting.google.com>
Source record: 28451
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Wadley loop recievers had to generate 33rd+ harmonic
Not quite OT but a great (old) idea
http://www.siliconchip.com.au/cms/A_30512/article.html

1365. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 11:52:12 UTC
From: BFoelsch <BFoelsch@snet.ditch.this.net>
Message-ID: <z9SdnYuMZo_yna_dRVn-uA@giganews.com>
Source record: 28452
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

I had a Yaesu FRG-7 receiver that used this lovely Wadley loop. If you subscribe to the theory that every beep and bloop you hear as you tune across the dial is a station, that is the receiver for you!

However, if you understand spurs and birdies, a different picture emerges. Lots of noise, too!

"GPG" <peg@slingshot.co.nz> wrote in message news:62069f15.0402170302.2fa98f53@posting.google.com...
> Wadley loop recievers had to generate 33rd+ harmonic
> Not quite OT but a great (old) idea
> http://www.siliconchip.com.au/cms/A_30512/article.html

1366. Re: thanks! Re: How do you use an LCC SMD device - holders??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 11:59:35 UTC
From: Wim Ton <wimton@blueyonder.co.uk>
Message-ID: <ImnYb.3776$262.3087@news-binary.blueyonder.co.uk>
Source record: 28453

> I have read up on the SMD use tips on several homebrew sites, but I'm not
> sure my hands or eyes are good enough to do this. I'm just amazed there
For 'normal' SMD work I use one of these big magnifying glasses with a fluorescent tube around it, a fairly standard article. If you can not find then, you may also look in a shop for needlework. For finer work and inspection, I use a 20x stereo microscope, bought for about $30 on Ebay. As I am 50, my eyes are slowly getting worse. Soldering with a temperature controlled Weller and 0.5 mm tin.

Succes, Wim

1367. Re: Effect of Amplitude Modulation on FM reception...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 12:19:34 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <5uv330hf45svlj6tj6s328sj44r2mjdj43@4ax.com>
Source record: 28454

On 17 Feb 2004 04:56:57 GMT, averyfineman@aol.com (Avery Fineman)
wrote:

>In article <96l230lthurb1ohdhcor0s3nbjj5iq5vrv@4ax.com>, Paul Burridge
><pb@osiris1.notthisbit.co.uk> writes:
>
>>ISTR.......
>>(through the mists of time) that the excessive bandwidth of an AM
>>transmission signal can interfere with the reception of a NBFM signal,
>>though the converse is not true. Can anyone confirm this (or else
>>flatly deny it/affirm it)?
>
> Paul, you need to be a bit more specific on the above.

Thanks, guys. I think you covered what I wanted to know...

Now I have another question on the same subject. Imagine if you will,
a NBFM recieiver, set to listen on one particular channel. Now
consider 3 seperate sweep transmitters located say 100yds away. Each
sweeps slowly across the band which encompasses the RX's receive
channel.
Sweep transmitter 1 puts out only an unmodulated carrier wave. STX 2
puts out an FM signal of the same power level; STX 3 puts out an AM
signal of the same power. Assume the extent of modulation is likewise
identical - or as identical as it can be given different classes. Now,
which of the three TXs is going to 'take over' the RX channel for the
longest time? IOW, which of the TX signals appears broadest to the FM
RX?

Thanks,

p.
--

The BBC: Licensed at public expense to spread lies.

1368. FA: R.S. Components New

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 14:58:43 UTC
From: Max <codtrap@usa.net>
Message-ID: <40322C23.FDAE900C@usa.net>
Source record: 28457

To View
http://cgi6.ebay.com/ws/eBayISAPI.dll?ViewSellersOtherItems&include=0&userid=newfoundlander&sort=3&rows=25&since=-1&rd=1

Thanks

1369. Re: need household-substance anti-static coating for plastic meter cover

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 15:21:05 UTC
From: clfurent <ffsta17no@spamaccess995.com>
Message-ID: <EjqYb.6789$5M.223661@dfw-read.news.verio.net>
Source record: 28455
Cross-posted to: sci.chem.coatings,sci.physics,sci.electronics.repair,rec.radio.amateur.homebrew

dish detergent on a cotton cloth wiped across the face will work also. CL

"mustang" <adrian@ratherbeflying.net> wrote in message
news:4031a449_4@news.chariot.net.au...
> Just lightly wipe the surface with a weak solution of household laundry
> fabric conditioner/softener periodically!
>
> This has solved probs for me.
>
> Adrian VK5AW
>
> Alan Horowitz wrote:
> > situation is a plastic meter cover, on a large process control board,
> > onboard a tanker ship, deployed. The meter movement underneath
> > experiences wild meter-swings, associated with finger contact,
> > presumed to be due to static electricity.
> >
> > we have a decent collection of household-type substances, also a small
> > collection of industrial substances.
> >
> > we have infrequent but regular access to Navy Exchanges, which are
> > basically transplanted K-mart sort of outlet. Carries common american
> > brand-name stuffs.
> >
> > The official Navy Supply Chain can deliver almost anything, but not
> > always within your lifetime.....
>

1370. FA: An item for everyone, even homebrewers.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 15:41:19 UTC
From: Philip de Cadenet <Philstheboss@thebbc.fslife.co.uk>
Message-ID: <COyNDECfYjMAFwrG@philstheboss.freeserve.co.uk>
Source record: 28456

http://tinyurl.com/mg8j
--
Philip de Cadenet G4ZOW
Transmitters 'R' Us
http://www.transmittersrus.com

1371. Re: Damping Higher Harmonics on a parallel LC-Oscillator? (1 port Low-, High-, Bandpasses?)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 16:31:04 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c0tfnk$671$1@newshost.mot.com>
Source record: 28459

I am confused. The circuit on the link you provided shows an antenna. You need to get some sort of low pass characteristic between your transmitter and the antenna. That is what I was trying to suggest. Perhaps a capacitive tap feed to the ant instead of the inductive tap. Again, with only the osc, this is not easy:

```
Original ckt
+V
|
|------------0
|-----| Ant
|/ C
= O----------0
/|C6 I
| L L1
|-----|
|
|/ Collector
B-| TR1
|\ Emitter
****************************************

+V
| New circuit
|
|--------|-------------------0
C = Ca ant
O L1 |--------COIL--|----0
I |/ L2 |
L = C6 =Cb <- Low pass pi net
| /| |
|--------| gnd
|
|/ Collector
B-| TR1
|\ Emitter
```

I estimate Ca & Cb to be approx 100-150 pf. L2 resonates with (1/2)*(Ca series Cb)

If you are not using an antenna and just radiating from the circuit, then your only hope is to either box it up or reduce the TR1 current to reduce the harmonis content (increase R1... 200, 500, 1000, 2000,...)

Steve

"kb" <baltzer@gmx.net> wrote in message
news:20040216234421.75b24f46.baltzer@gmx.net...
> Thanks,
> but i dont want to use an antenna. Or did you mean the dc-input of the
LC-transistor-oscillator by "antenna"?
>
>
> On Mon, 16 Feb 2004 16:08:15 -0600
> "Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote:
>
> > An idea:
> > Use shunt feed and a pi network. It is a low pass filter. Since TR1 is
> > also the oscillator, you may need to add an amplifier.
> >
> > +V
> > Choke
> > |
> > |-------Coil----> ANT
> > | | |
> > | = =
> > | | |
> > | gnd gnd
> > |
> > |
> > |
> > |/ Collector of TR1
> > B-|
> > |\ Emitter
> >
> >
> >
> >
> > "Diego Stutzer" <abcdstutzer@evard.ch> wrote in message
> > news:aca3ec4c.0402161035.12f1d8ac@posting.google.com...
> > > Hi,
> > >
> > > I built a small FM Radio as shown on
> > > http://members.aol.com/torkraemer/ukwsender/ukwsender.html.
> > > As it is it works pretty well, allthough I operate it without any
> > > adition antenna.
> > >
> > > Of course there are pretty high (unwanted) peaks in the frequency-band
> > > at multiples of the operating frequency.
> > > Because I don't want to use an additional antenna, I can't filter the
> > > signal on its way from L1 to the antenna with a common "2-port
> > > Bandpass".
> > > Putting such a Bandpass (or Lowpass) between the DC-Source and the
> > > LC-Circuit did not seem to work well.
> > >

> > > So how can I damp those harmonics on L1 Coil? I thought of some kind
> > > of frequency dependent impedance in parallel with the Coil.
> > >
> > > I tried this with another LC-prallel Circuit which has an impedance of
> > > approx. 0 Ohms at 200 Mhz. This works as expected but seems a bit
> > > unsophisticated and the Impedance falls too slow as the frequency
> > > approaches the 200Mhz.
> > >
> > > Unfortunately I have no Idea how to design a "higher order
> > > 1-port-Bandpass", or even more likeably a Highpass.
> > >
> > > What would you recommend?
> > > What shoud I read?
> > > Any suggestions are welcome.
> > >
> > > Thanks to all, and sorry for the lenght of the message.
> > >
> > > Diego S.
> >
> >

1372. Re: Effect of Amplitude Modulation on FM reception...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 16:42:53 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c0tgdm$6gg$1@newshost.mot.com>
Source record: 28460

There are a lot of variables here, but ...
"the same power. ...modulation is likewise identical" is rather un-defined since you have an AM & an FM sweeper.

If the bandwidth for the two modulated "sweepers" is about the same (i.e. AM & NBFM), I think they will produce near the same level of interference. The AM might be a little less since the side bands are only 25% the carrier power and the FM sidebands can be a higher percentage (I'm not too sure with NBFM, since NBFM side bands aren't much different from AM sidebands), but this depends upon the modulation amount at any given time. As the side bands get into the channel they start to cause trouble.
The carrier only sweeper will be a little better since it has no sidebands to get into the IF before the carrier does, so it'll have to get closer to center channel before causing trouble.

How-zat?

--
Steve N, K,9;d, c. i My email has no u's.

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message news:5uv330hf45svlj6tj6s328sj44r2mjdj43@4ax.com...
> On 17 Feb 2004 04:56:57 GMT, averyfineman@aol.com (Avery Fineman)
> wrote:
>
> >In article <96l230lthurb1ohdhcor0s3nbjj5iq5vrv@4ax.com>, Paul Burridge
> ><pb@osiris1.notthisbit.co.uk> writes:
> >
> >>ISTR.......
> >>(through the mists of time) that the excessive bandwidth of an AM
> >>transmission signal can interfere with the reception of a NBFM signal,
> >>though the converse is not true. Can anyone confirm this (or else
> >>flatly deny it/affirm it)?
> >
> > Paul, you need to be a bit more specific on the above.
>
> Thanks, guys. I think you covered what I wanted to know...
>
> Now I have another question on the same subject. Imagine if you will,
> a NBFM recieiver, set to listen on one particular channel. Now
> consider 3 seperate sweep transmitters located say 100yds away. Each
> sweeps slowly across the band which encompasses the RX's receive
> channel.
> Sweep transmitter 1 puts out only an unmodulated carrier wave. STX 2
> puts out an FM signal of the same power level; STX 3 puts out an AM

> signal of the same power. Assume the extent of modulation is likewise
> identical - or as identical as it can be given different classes. Now,
> which of the three TXs is going to 'take over' the RX channel for the
> longest time? IOW, which of the TX signals appears broadest to the FM
> RX?
>
> Thanks,
>
> p.
> --
>
> The BBC: Licensed at public expense to spread lies.

1373. Re: Effect of Amplitude Modulation on FM reception...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 16:47:15 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <nArYb.52903$IF1.37674@nwrdny03.gnilink.net>
Source record: 28458

Paul,
You still need to be more specific:
What is the modulating frequency and deviation of the FM signal? Is it the modulation frequency a single tone or noise-like?. What is the IF bandwidth of the FM receiver? What is the sweep rate of the interfering signal? We'll assume the AM signal is modulated with the same frequency at 100% modulation.

In general, the CW signal would be least intrusive for a given sweep rate because it's energy is only in the IF of the receiver for a period of time equal to RXbw/sweeprate. If this time is small compared to the inverse of the post detection (audio) bandwidth, it might be inaudible. If the modulation is noise-like and the FM modulation index is high, the interference will be worse and longer in duration. If the FM modulation frequency is high, the modulation index is low, and the sweep rate is low, it could sound like 3 seperate signals sweeping through the passband (AM would be similar to this last case).

Joe
W3JDR

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message news:5uv330hf45svlj6tj6s328sj44r2mjdj43@4ax.com...
> On 17 Feb 2004 04:56:57 GMT, averyfineman@aol.com (Avery Fineman)
> wrote:
>
> >In article <96l230lthurb1ohdhcor0s3nbjj5iq5vrv@4ax.com>, Paul Burridge
> ><pb@osiris1.notthisbit.co.uk> writes:
> >
> >>ISTR.......
> >>(through the mists of time) that the excessive bandwidth of an AM
> >>transmission signal can interfere with the reception of a NBFM signal,
> >>though the converse is not true. Can anyone confirm this (or else
> >>flatly deny it/affirm it)?
> >
> > Paul, you need to be a bit more specific on the above.
>
> Thanks, guys. I think you covered what I wanted to know...
>
> Now I have another question on the same subject. Imagine if you will,
> a NBFM recieiver, set to listen on one particular channel. Now
> consider 3 seperate sweep transmitters located say 100yds away. Each
> sweeps slowly across the band which encompasses the RX's receive
> channel.
> Sweep transmitter 1 puts out only an unmodulated carrier wave. STX 2

> puts out an FM signal of the same power level; STX 3 puts out an AM
> signal of the same power. Assume the extent of modulation is likewise
> identical - or as identical as it can be given different classes. Now,
> which of the three TXs is going to 'take over' the RX channel for the
> longest time? IOW, which of the TX signals appears broadest to the FM
> RX?
>
> Thanks,
>
> p.
> --
>
> The BBC: Licensed at public expense to spread lies.

1374. Re: Effect of Amplitude Modulation on FM reception...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 17:45:58 UTC
From: averyfineman@aol.com
Message-ID: <20040217124558.25815.00006725@mb-m07.aol.com>
Source record: 28461

In article <5uv330hf45svlj6tj6s328sj44r2mjdj43@4ax.com>, Paul Burridge <pb@osiris1.notthisbit.co.uk> writes:

>Now I have another question on the same subject. Imagine if you will,
>a NBFM recieiver, set to listen on one particular channel. Now
>consider 3 seperate sweep transmitters located say 100yds away. Each
>sweeps slowly across the band which encompasses the RX's receive
>channel.
>Sweep transmitter 1 puts out only an unmodulated carrier wave. STX 2
>puts out an FM signal of the same power level; STX 3 puts out an AM
>signal of the same power. Assume the extent of modulation is likewise
>identical - or as identical as it can be given different classes. Now,
>which of the three TXs is going to 'take over' the RX channel for the
>longest time? IOW, which of the TX signals appears broadest to the FM
>RX?

Whichever signal is strongest is going to "take over."

You CAN determine this yourself, given some frequencies, RF output levels, approximate gain/loss of the antennas, and the selectivity (bandwidth) of the receiver and the modulation indexes of the transmitters. Piece of cake.

Might I suggest you walk slowly away from the interfering RF fields to avoid ionization the neurons? Any more?

Len Anderson
retired (from regular hours) electronic engineer entity

...and headed back to the Mother Ship...

1375. Re: HP 456A ??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 19:57:12 UTC
From: neil_sutcliffe@telus.net
Message-ID: <c36c1dda.0402171157.41b65163@posting.google.com>
Source record: 28462
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,sci.electronics.equipment,rec.antiques.radio+phono

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:<1031u5so9dgebd0@corp.supernews.com>...
> Thanks to David DiGiacomo I've got the info and it looks like the B+ is 5.4
> VDC at 5.5 ma and the B- is 8.1 VDC at 20 microamps! HP used a small
> centrer tapped transformer at about 25 volts that was regultaed down to the
> 8.1 and 5.4. I can't find anything on the physical size of the xfrmr but it
> has to be no bigger than end of ones thumb,but maybe they used a wall wart
> but I kind of doubt it. I've not had any experience with real small low
> current xfmrs that take 115VAC to 20 or 30 VAC and would appreciated any
> ideas on what to use. A wall wart would be my last resort.
> tnx
> hank wd5jfr
> "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
> news:102v13p38679b12@corp.supernews.com...
> > I just got this HP 456A AC Current Probe and need some help to get it
> going.
> > The 1977 HP catalog indicates that it could operate 400 hours on
> batteries,
> > not very long for what's in it. The dead batteries that came with it are
> > Mallory TR 236R at 8.1 volts and TR 234R at 5.4 volts, these are C size
> > diameter. There are only two 2N5087 transistors, a diode, and a few
> > resistors and capacitors in the circuit, what's the current draw? I am
> not
> > sure that these are the correct batteries but would like to know if anyone
> > out there can be confirm the batteries or has a schematic, manual or AC
> > power supply. If I can't find an HP optional AC supply I think I'll
> build
> > a little Zener stabilized supply after I get the voltages confimred.
> > tnx
> > Hank WD5JFR
> >
> >

FWIW, Henry, I prefer to use an AC output 'wall wart' and install in
the unit to be powered a pair of diodes to supply + and - which I
filter and regulate down to what is needed. For that miniscule power
demand the filter caps and TO-92 regulators will take up little room.

Neil S.

1376. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-17 23:37:55 UTC
From: Geoff <k@l.f>
Message-ID: <lBxYb.608$wJ5.18@newsfep4-winn.server.ntli.net>
Source record: 28463
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Tell me how you will use that and I will tell you the answer.

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:ea0030pj96jdunmhsmelfvimqm1tstp5qf@4ax.com...
> What's the maximum multiplication factor it's practical and sensible
> to attempt to achieve in one single stage of multiplication? (Say from
> a 7Mhz square wave source with 5nS rise/fall times.)
> --
>
> The BBC: Licensed at public expense to spread lies.

1377. JOHNSON KW MATCHBOX FA FA FA

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 00:56:58 UTC
From: kf4toh@aol.com
Message-ID: <20040217195658.21837.00002190@mb-m14.aol.com>
Source record: 28464

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=3079109067

1378. Re: 13.8 V power supply question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 05:25:48 UTC
From: ehsjr@bellatlantic.net
Message-ID: <4032F6F7.6AECE432@bellatlantic.net>
Source record: 28465

ehsjr@bellatlantic.net wrote:
>
> Uwe Langmesser wrote:
> >
> > I need a 12-14 V power supply for my new 2m tranceiver. On transmit I need
> > probably 10 to 15 amps and I hooked up and old transformer with a rectifier
> > and a filter section I get 15V at my filter with no load, the transformer is
> > good for 25 amps) but if I draw 15 amps I will get too much ripple,
> >
> > so I need a regulating section.
> >
> > Homebrewing is called for.
> >
> > Last years radio amateur handbook has a design for a 28 volt regulated
> > power supply and while I would feel comfortable building a proven design I
> > do not feel comfortable to redesign that regulating section for my needs.
> >
> > So the question is does anyone have a diagram for a proven 12-14 Volt
> > regulated supply for 10 to 25 amps??
> >
> > Thanks for your help
> > Uwe
>
> Your transformer secondary does not produce enough
> voltage. First, solve that problem. You need a hefty
> transformer, at least 15 volts on the secondary at
> the required amperage. Your DC voltage across the
> filter cap will be about 1.4 times the secondary
> voltage.
>
> The 723 circuits are great - but you can get all you
> need from a 3 terminal LM 317 and a couple of support
> components - a simpler circuit than a 723. Add a full
> wave rectifier, and a lot of capacitance - I used
> 50,000 uf. Then, for the regulator, use an LM317 in
> collector wraparound with a hefty heatsink and 4 or
> more power transistors, with emitter equalizing
> resistors. That's what I did, years ago. 4 2N3055's

Make that 4 2N2955's (not 3055's)
> on a huge heatsink and an LM317 on its own heatsink.
> I used 4 .1 ohm 10 watt emitter resistors. If you
> figure 7 amps per transistor, the emitter resistors
> would have to dissipate 7^2 *.1 or 4.9 watts.

> Each 2N3055 is capable of ~115 watts when used with a
> proper heatsink. At 18 volts, my rectifier/filter caps
> yield about 25.2 volts DC. The wattage to be dissipated,
> worst case, is (25.2 - 13.8) * 25 or 285 watts. I have
> no ripple problems and pretty good regulation, no load to
> full load at about 10 amps. I haven't used the supply
> with a rig that draws more than that, so I can't say how
> well it would regulate at 25 amps, but I think it would
> work well.
>
> What is really nice is that you can use almost all the
> parts in the above in a regulator with a 723 if you decide
> to, and you're out only the cost of the LM317 and support
> components not mentioned above - a few resistors, caps and
> a diode - less than ~ 3 bucks.
>
> An example of the "collector wraparound" technique
> can be seen on page 13 of the following url:
> http://www.national.com/ds/LM/LM340.pdf
> It's title is "High Current Voltage Regulator"
> It shows only 1 pass transistor - to add more,
> place them in parallel with the one shown, with
> one equalizing resistor in series with the emitter
> of each transistor. You can substitute a
> 7812 regulator for the 317 if you want - just
> put 2 diodes in series with the ground leg of the
> 7812 to get about 13.4 V out.

1379. Frequency Division

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 09:17:11 UTC
From: mike@corn2.freeserve.co.uk
Message-ID: <40332bc4.168810339@news.freeserve.net>
Source record: 28466

I have a need to produce an accurate 4Mhz 50% dutycycle TTL squarewave to use as a timebase.

I have a 10Mhz IQD frequency standard of suitable accuracy. How can I divide this to produce the 50% duty cycle 4Mhz signal?. Is it even possible with logic alone?. I can see how to mix with either 6Mhz or 14Mhz, but this then detracts from the required accuracy.

atb Mikw

1380. HELP with finding ARRL Handbook Filter circuit please

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 09:48:37 UTC
From: nospam_ronayling@hotmail.com
Message-ID: <403332e8.1997173@news.freeserve.co.uk>
Source record: 28467

Hi, I'm building a small valve communication receiver in an
effort to recapture some of the fun of my youth :)))
And I am trying to find a circuit of a simple valve CW Audio filter
Years ago I built one from a circuit that was in the ARRL handbook
about 60's vintage, that was superb, anyone got an old Handbook
of that vintage that could have a look and possibly scan the
info, or possibly have a good one of their own using standard
valve componants!! long shot I know :))
Thanks from Ron G3YUH ronayling@hotmail.com

1381. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 10:05:58 UTC
From: Active8 <mTHISREMOVEcolasono@earthlink.net>, invalid
Message-ID: <MPG.1a9d030cf06498e198997e@news.east.earthlink.net>
Source record: 28468
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 16 Feb 2004 11:53:11 +0000, pb@osiris1.notthisbit.co.uk
said...
> On Sun, 15 Feb 2004 16:46:32 -0700, Jim Thompson
> <thegreatone@example.com> wrote:
>
> >On Sun, 15 Feb 2004 23:48:47 +0000, Paul Burridge
> ><pb@osiris1.notthisbit.co.uk> wrote:
> >
> >>What's the maximum multiplication factor it's practical and sensible
> >>to attempt to achieve in one single stage of multiplication? (Say from
> >>a 7Mhz square wave source with 5nS rise/fall times.)
> >
> >You ought to be able to answer that yourself... what's the spectral
> >roll-off of a square wave ??
>
> I suppose it boils down to how much signal is left in the mush as the
> harmonics get higher and higher. Knew I shoulda held on to that
> spectrum analyser I used to have. :-(
> I suppose that's the proper answer though: get the rise/fall times as
> small and possible, measure the specral output and pick a suitable
> harmonic with enough energy in it to set it 'comfortably' above the
> noise floor?
>
Gee. I could have sworn Jim was hinting at the math approach.
Wouldn'tcha just love to predict that roll-off on paper and *then*
see it in real life? Starts with an "F", looks like a number,
sounds like a frog.

--
Best Regards,
Mike

1382. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 11:51:42 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <mbk630thnfhjq4hi1g6c9hg5b3q34bae13@4ax.com>
Source record: 28469
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 18 Feb 2004 10:05:58 GMT, Active8
<mTHISREMOVEcolasono@earthlink.net,invalid> wrote:

>Gee. I could have sworn Jim was hinting at the math approach.
>Wouldn'tcha just love to predict that roll-off on paper and *then*
>see it in real life? Starts with an "F", looks like a number,
>sounds like a frog.

Fourier? I wouldn't trust it. Sounds French. :->

--

The BBC: Licensed at public expense to spread lies.

1383. Re: HELP with finding ARRL Handbook Filter circuit please

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 11:57:27 UTC
From: "Edward A. Feustel" <edward.feustel@dartmouth.edu>
Message-ID: <c0vjvdfmv1@merrimack.Dartmouth.EDU>
Source record: 28472

"Ron" <nospam_ronayling@hotmail.com> wrote in message
news:403332e8.1997173@news.freeserve.co.uk...
> Hi, I'm building a small valve communication receiver in an
> effort to recapture some of the fun of my youth :)))
> And I am trying to find a circuit of a simple valve CW Audio filter
> Years ago I built one from a circuit that was in the ARRL handbook
> about 60's vintage, that was superb, anyone got an old Handbook
> of that vintage that could have a look and possibly scan the
> info, or possibly have a good one of their own using standard
> valve componants!! long shot I know :))
> Thanks from Ron G3YUH ronayling@hotmail.com
>
>
Do you recall if it was a twin-T filter? I might be able to find a tube
implementation. As I recall it took a twin
triode and used feedback.

Was your filter tunable?
N5EI

1384. Re: Frequency Division

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 12:26:57 UTC
From: budgie <me@privacy.net>
Message-ID: <e1m630tegq7srmacv7i1os22infs65m3a8@4ax.com>
Source record: 28470

On Wed, 18 Feb 2004 09:17:11 GMT, mike@corn2.freeserve.co.uk (Mike W) wrote:

>I have a need to produce an accurate 4Mhz 50% dutycycle TTL squarewave
>to use as a timebase.
>
>I have a 10Mhz IQD frequency standard of suitable accuracy. How can I
>divide this to produce the 50% duty cycle 4Mhz signal?. Is it even
>possible with logic alone?. I can see how to mix with either 6Mhz or
>14Mhz, but this then detracts from the required accuracy.

Several approaches spring to mind. You stated "accurate" - they all provide
that, but jitter is introduced in all of them:

1. VCO at 4MHz, divide by 4 and lock to Fref = 1MHz from your 10 Meg source
divided by ten.

2. VCO at a multiple of 10M - say 40 MHz - locked to your 10M ref and
divided down (by in this case 10) to give 4 MHz output.

Both of the above may provide acceptable jitter.

3. a no-VCO approach - frequency double twice using XOR gates, then divide by
five and finally by two in say a 7490. Simple glue logic chips.

4. use a micro.

I would certainly expect both 3 & 4 to present more jitter than well-implemented
VCO solutions. If jitter is critical to the application, this needs to be
indicated.

1385. Re: Frequency Division

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 12:49:11 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <bbJYb.33404$M8.13845@nwrdny02.gnilink.net>
Source record: 28471

Take a look at Analog Devices' line of DDS chips. Pretty much a one-chip (needs ucontroller to drive it) digital solution to turn your 10MHz clock into virtually any frequency below 5 MHz (in theory; below 4MHz in easy practicality). The AD9834 only consumes 20mw at 3.3 VDC. There are many other devices in the product line. Many have built-in comparators to produce square-wave output.

Joe
W3JDR

"Mike W" <mike@corn2.freeserve.co.uk> wrote in message
news:40332bc4.168810339@news.freeserve.net...
> I have a need to produce an accurate 4Mhz 50% dutycycle TTL squarewave
> to use as a timebase.
>
> I have a 10Mhz IQD frequency standard of suitable accuracy. How can I
> divide this to produce the 50% duty cycle 4Mhz signal?. Is it even
> possible with logic alone?. I can see how to mix with either 6Mhz or
> 14Mhz, but this then detracts from the required accuracy.
>
> atb Mikw

1386. FT707 ALC problem...help!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 13:06:44 UTC
From: ablight@alphalink.com.au
Message-ID: <1fc7b362.0402180506.2409a431@posting.google.com>
Source record: 28473
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

Hopefully someone has seen this before, or can offer a starting point to trace it down. (or a plausible theory - I'm getting that pissed off)

Problem - on some bands but not all, on TX SSB the front panel ALC meter doesnt work - the TX still has output, but very distorted and splattery EXCEPT if you go to the very top of the band via the VFO when it miraculously works. Looking at the ALC control line on the cro, when working a variable (speech rate) almost DC voltage is applied to the relevant ALC inputs to the RF and AF and IF boards. In the fault condition there is a modulation patttern on the ALC signal, in step with speech peaks.

What gives - my theory falls over on this one, I suspect the LPF on the output of the PA amp has gone faulty (as evidenced by VFO settings) but to pull it to pieces to check is going to be a real pain - this thing was designed by evil minded dwarfs who were determined to make life difficult in servicing - try and do ANYTHING with the front panel parts, or the rear PA module, and wires come loose and generate more faults - this it has done a few times now, so its getting very frustrating and time consuming!

As I said, on some bands it works, but on 80 and 15 (from memory, its 5 past midnight here at the end of a long day...) and the "where it is in the band" symptoms dont help either.

Any helpful suggestions, feel free to chuckle and be glad its not sitting on YOUR bench....

73 de VK3BFA Andrew

1387. Re: Frequency Division

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 13:07:48 UTC
From: Hans Summers <Hans.Summers@Tudor.Com>
Message-ID: <c0vo34$1bisdu$1@ID-61331.news.uni-berlin.de>
Source record: 28474

"budgie" <me@privacy.net> wrote in message
news:e1m630tegq7srmacv7i1os22infs65m3a8@4ax.com...
> On Wed, 18 Feb 2004 09:17:11 GMT, mike@corn2.freeserve.co.uk (Mike W)
wrote:
>
> >I have a need to produce an accurate 4Mhz 50% dutycycle TTL squarewave
> >to use as a timebase.
> >
> >I have a 10Mhz IQD frequency standard of suitable accuracy. How can I
> >divide this to produce the 50% duty cycle 4Mhz signal?. Is it even
> >possible with logic alone?. I can see how to mix with either 6Mhz or
> >14Mhz, but this then detracts from the required accuracy.
>
> Several approaches spring to mind. You stated "accurate" - they all
provide
> that, but jitter is introduced in all of them:
>
> 1. VCO at 4MHz, divide by 4 and lock to Fref = 1MHz from your 10 Meg
source
> divided by ten.
>
> 2. VCO at a multiple of 10M - say 40 MHz - locked to your 10M ref and
> divided down (by in this case 10) to give 4 MHz output.
>

I would suggest using a 4MHz crystal oscillator as your VCO. Small varicap
to alter the VXO frequency (or use an ordinary diode or LED as the varicap,
see http://www.hanssummers.com/radio/varicap/varicap.htm). The inherent
stability of the VXO will allow you to use a very slow PLL, which will
result in minimal jitter.

Hans G0UPL
http://www.HansSummers.com

1388. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 13:33:18 UTC
From: Active8 <mTHISREMOVEcolasono@earthlink.net>, invalid
Message-ID: <MPG.1a9d33aca65e7d5f98998d@news.east.earthlink.net>
Source record: 28475
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 18 Feb 2004 11:51:42 +0000, pb@osiris1.notthisbit.co.uk
said...
> On Wed, 18 Feb 2004 10:05:58 GMT, Active8
> <mTHISREMOVEcolasono@earthlink.net,invalid> wrote:
>
>
> >Gee. I could have sworn Jim was hinting at the math approach.
> >Wouldn'tcha just love to predict that roll-off on paper and *then*
> >see it in real life? Starts with an "F", looks like a number,
> >sounds like a frog.
>
> Fourier? I wouldn't trust it. Sounds French. :->
>
>
Then do a wavelet.
--
Best Regards,
Mike

1389. Re: HELP with finding ARRL Handbook Filter circuit please

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 13:40:01 UTC
From: nospam_ronayling@hotmail.com
Message-ID: <40336ade.16325064@news.freeserve.co.uk>
Source record: 28476

Hi, Well it was over 20yrs ago hi!! but I seem to remember
it was a twin triode setup
from Ron......

On Wed, 18 Feb 2004 06:57:27 -0500, "Edward A. Feustel"
<edward.feustel@dartmouth.edu> wrote:

>
>"Ron" <nospam_ronayling@hotmail.com> wrote in message
>news:403332e8.1997173@news.freeserve.co.uk...
>> Hi, I'm building a small valve communication receiver in an
>> effort to recapture some of the fun of my youth :)))
>> And I am trying to find a circuit of a simple valve CW Audio filter
>> Years ago I built one from a circuit that was in the ARRL handbook
>> about 60's vintage, that was superb, anyone got an old Handbook
>> of that vintage that could have a look and possibly scan the
>> info, or possibly have a good one of their own using standard
>> valve componants!! long shot I know :))
>> Thanks from Ron G3YUH ronayling@hotmail.com
>>
>>
>Do you recall if it was a twin-T filter? I might be able to find a tube
>implementation. As I recall it took a twin
>triode and used feedback.
>
>Was your filter tunable?
>N5EI
>

1390. Re: HELP with finding ARRL Handbook Filter circuit please

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 14:26:37 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.0000005a.0010d7fb@btinternet.com>
Source record: 28477

Hi,

That was perhaps the "Selectoject" which used a pair of
12AX7 (ECC83) valves in a phase-shifting audio peak or
notch filter. It was designed to go between the detector
and the first audio amp but could, I suppose, be used
equally well externally. If you will let me have an
address, I'll copy it for you from the 1956 Handbook or
from the appropriate QST CD.

73 de Joe, G3LLV

1391. high quality graph of nice 0-100 analog scale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 14:58:50 UTC
From: n1jpr@hotmail.com
Message-ID: <95a201e0.0402180658.39ff0e71@posting.google.com>
Source record: 28478

I have a few slow-motion drives with pointers that I'd like to equip with simple log scales. I have tried to split a half-circle scale by means of a compass, and found it to be quite doable, but 1) time-consuming, 2) messy, 2) leading to power-of-two end-of scale values (obviously) that are anything but intuitive. I am not an binary / octal / hex / kind of guy, and have no affinity for scales that end at 64 or 128 or G_d forbid 256. I also tried making a 0-100 scale by means of Excel / PowerPoint / Openoffice, but their rendering hits very soon an unsightly rough degree of approximation.

Is there any place on the web whence I can download some high-definition graph for a 0-100 or 0-180 scale? I'd print it out in large format and then reduce it to the size I need by means of an ANALOG photocopier.

TIA

Spammy

1392. FS: Nice Homebrew HV Supply With PICS... $40+UPS!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 15:24:22 UTC
From: rlucch2098@aol.com
Message-ID: <20040218102422.13501.00001945@mb-m24.aol.com>
Source record: 28479

Hi All;
Tonight I have a handy item>>
19" rack mount HomeBrew HV Power supply using 6336 rectifier tube,
5-20mfd@450volt FP Cans, Triad Xformer & Reactor.
Looks like it was almost finish but never completed. Complete with connectors
on back, see pics.
The chassis might have been used before this as there are a few extree holes
but the rest is nice, looks like a New panel & knobs. Meter is a Westinghouse
CX, 600V full scale. I suspect it can be used for HB receivers & Xmitters. If
you SS the Supply(pull the tube), you got 6.3 & 5 vdc filiments for other
things.
Untested & I have no idea where he got the schematic, I have none!
Someone has gotta need this.
Price is $40 + 20 lbs UPS from 11758.
Pics>>
http://www.myradioroom.com/hbsupply1.jpg
http://www.myradioroom.com/hbsupply2.jpg
http://www.myradioroom.com/hbsupply3.jpg
http://www.myradioroom.com/hbsupply4.jpg
http://www.myradioroom.com/hbsupply5.jpg
http://www.myradioroom.com/hbsupply6.jpg

Thanks es 73.....RICH-WA2RQY RLUCCH2098@aol.com
Cheep Manuals for sale @>>
http://www.myradioroom.com/manualsales.html
Web-Page URL>
HTTP://members.aol.com/rlucch2098/index.html

1393. Re: FT707 ALC problem...help!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 17:51:18 UTC
From: Bob <balbert@access1.net>
Message-ID: <FYmdnfn5H6RoOK7dRVn2gA@ecrii.com>
Source record: 28480
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

I would guess the PLL is going out of lock. Do a careful alignment.

When the PLL is on the verge, the signal gets distorted and unstable.

If there is no ALC, it's probably because there isn't enough power output to overcome its threshold.

Just a guess; I've never worked on one of those rigs.

Bob

1394. Re: Frequency Division

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 17:55:13 UTC
From: k7itm@aol.com
Message-ID: <3200347.0402180955.6d3624d9@posting.google.com>
Source record: 28481

Multiply by four, then divide by five and by two. Or divide by five, then multiply by four and divide by two. For the best symmetry, you should expect to use a divide-by-two in the last stage, though you can get close to 50% with triggering off both rising and falling edges. There are other possible trick ways but the mpy/div are straightforward. You could, for example, divide the ref by five and a 4MHz VCO by two and build a PLL to control the 4MHz VCO.

Cheers,
Tom

mike@corn2.freeserve.co.uk (Mike W) wrote in message news:<40332bc4.168810339@news.freeserve.net>...
> I have a need to produce an accurate 4Mhz 50% dutycycle TTL squarewave
> to use as a timebase.
>
> I have a 10Mhz IQD frequency standard of suitable accuracy. How can I
> divide this to produce the 50% duty cycle 4Mhz signal?. Is it even
> possible with logic alone?. I can see how to mix with either 6Mhz or
> 14Mhz, but this then detracts from the required accuracy.
>
> atb Mikw

1395. Re: high quality graph of nice 0-100 analog scale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 19:07:01 UTC
From: averyfineman@aol.com
Message-ID: <20040218140701.15923.00003830@mb-m12.aol.com>
Source record: 28483

In article <95a201e0.0402180658.39ff0e71@posting.google.com>, n1jpr@hotmail.com (SpamLover) writes:

>Is there any place on the web whence I can download some
>high-definition graph for a 0-100 or 0-180 scale? I'd print it out in
>large format and then reduce it to the size I need by means of an
>ANALOG photocopier.

Here's some alternates -

Office Depot and Office Max chains have "graph paper" with
many kinds of scales...1, 2, 3, and 5 decade log scales by
linear or log on the opposing axis.

Analog-copy an old slide rule's C or D scales...themselves
fairly accurate single-log. [not many slide rules in common use
nowadays, heh heh, would be a fitting sayonara for them]

To actually draw one's own scale, get access to an old T-Square
(ancient drafting implement) and lay out a right triangle. Let a
large log scale be the hypotenuse (that side of the triangle on a
slant). Use the T-Square to get parallel vertical lines intersecting
marks on the log-scale hypotenuse to the horizontal (or vertical)
axis. The size reduction from original log scale to the new one
depends on the angle of the hypotenuse...very easy to "calibrate"
to start the marking.

Digital copying will depend on the quantization error of the number of
available pixels in the image. Most pronounced in absolute black-
and-white mode. Greyscale and color will show up in gradations and
one has to guess at the exact point of the log markings.

For very fancy dials, most industrial-strength photo shops can handle
up to 4x original art (perhaps to 11" x 14"), shoot it, reduce it to
very-close-to-desired dimension, and even opaque any clear spots on
the negative. That method can be the basis for a chemical etching of a
metal dial. Cost varies so it is best to inquire first on that method.

Len Anderson
retired (from regular hours) electronic engineer person

Yes, I've done a few things like the above, including round back-lighted
circular tuning dials. :-)

1396. Re: Frequency Division

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 19:07:02 UTC
From: averyfineman@aol.com
Message-ID: <20040218140702.15923.00003831@mb-m12.aol.com>
Source record: 28482

In article <40332bc4.168810339@news.freeserve.net>, mike@corn2.freeserve.co.uk
(Mike W) writes:

>I have a need to produce an accurate 4Mhz 50% dutycycle TTL squarewave
>to use as a timebase.
>
>I have a 10Mhz IQD frequency standard of suitable accuracy. How can I
>divide this to produce the 50% duty cycle 4Mhz signal?. Is it even
>possible with logic alone?. I can see how to mix with either 6Mhz or
>14Mhz, but this then detracts from the required accuracy.

A more direct way, with very little jitter, is to double the 10 MHz
reference with a dual diode arrangment, output tuned to 20 MHz,
then into amplification (if needed), through a Schmitt inverter,
another (!) dual diode doubler with output tuned to 40 MHz. Again
amplification (if needed) and another Schmitt inverter to square
up the 40 MHz. Divide the 40 MHz by 10 in a Johnson counter to
achieve the 50% duty cycle. Broad tuning, no real problems there.
Very direct. Minimal jitter.

Johnson counters aren't common but they aren't made from
unobtainium either. The CD4017 is an example and still available
although it isn't fast enough for this application. Dividing by 10 via
a Johnson counter needs a 5-stage shift register arrangement
which can be done from 74LS or 74F or 74AC components (a
4-bit SR IC plus a flip-flop to complete the 5 stages).

If operating at slower rates, the 50% duty cycle would appear at
the "Carry Out" pin of a CD4017.

A good simple explanation of Johnson counters is at:

http://www.play-hookey.com/digital/johnson_counter.html

Some other suggestions might suggest themselves if you explain
the "timebase" in more detail.

Len Anderson
retired (from regular hours) electronic engineer person

1397. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 20:25:55 UTC
From: kensmith@violet.rahul.net
Message-ID: <c10hoj$n5r$1@blue.rahul.net>
Source record: 28484
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

In article <ea0030pj96jdunmhsmelfvimqm1tstp5qf@4ax.com>,
Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote:
>What's the maximum multiplication factor it's practical and sensible
>to attempt to achieve in one single stage of multiplication? (Say from
>a 7Mhz square wave source with 5nS rise/fall times.)

Depends on what you call "practical".

I know that one type of atomic clock uses a one stage frequency multiplier
to go from about 10MHz to about 9.1GHz.

A slow edged square wave follows the 1/N rule to about the point where the
rise or fall time is equal to half a cycle of the harmonic frequency.
From that point up, the spectrum falls off at a rate of at least 1/n^2.
Usually it is faster than that.

If we assume that the 5nS rise time is the input to a stage, we can use a
fast transistor to effectively speed the edge up.
--
--
kensmith@rahul.net forging knowledge

1398. ICs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-18 21:57:48 UTC
From: The Genie <the_genie@btopenworld.com>
Message-ID: <c10n4sdah1@titan.btinternet.com>
Source record: 28485

Hi,
Does anyone know what the following ICs are
Plessey SL901B
Plessey SL917B
STC XK75NK
STC XK87PX
Motorola 12CE1518(04/PABD)
TNX in anticipation,
Mike

1399. Re: ICs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-19 00:58:46 UTC
From: bunnydawg <r.heenan@sympatico.ca>
Message-ID: <zVTYb.10496$d34.1140983@news20.bellglobal.com>
Source record: 28486

SL901B IC SL..901B TVDEMODCOL24

SL917B IC SL..917B TVDEMODCHROMIN24

"The Genie" <the_genie@btopenworld.com> wrote in message
news:c10n4sdah1@titan.btinternet.com...
> Hi,
> Does anyone know what the following ICs are
> Plessey SL901B
> Plessey SL917B
> STC XK75NK
> STC XK87PX
> Motorola 12CE1518(04/PABD)
> TNX in anticipation,
> Mike
>
>

1400. Re: Frequency Division

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-19 01:33:17 UTC
From: budgie <me@privacy.net>
Message-ID: <v9483050sdjhfonej00iuohf94k13146sd@4ax.com>
Source record: 28487

On Wed, 18 Feb 2004 13:07:48 -0000, "Hans Summers" <Hans.Summers@Tudor.Com>
wrote:

>
>"budgie" <me@privacy.net> wrote in message
>news:e1m630tegq7srmacv7i1os22infs65m3a8@4ax.com...
>> On Wed, 18 Feb 2004 09:17:11 GMT, mike@corn2.freeserve.co.uk (Mike W)
>wrote:
>>
>> >I have a need to produce an accurate 4Mhz 50% dutycycle TTL squarewave
>> >to use as a timebase.
>> >
>> >I have a 10Mhz IQD frequency standard of suitable accuracy. How can I
>> >divide this to produce the 50% duty cycle 4Mhz signal?. Is it even
>> >possible with logic alone?. I can see how to mix with either 6Mhz or
>> >14Mhz, but this then detracts from the required accuracy.
>>
>> Several approaches spring to mind. You stated "accurate" - they all
>provide
>> that, but jitter is introduced in all of them:
>>
>> 1. VCO at 4MHz, divide by 4 and lock to Fref = 1MHz from your 10 Meg
>source
>> divided by ten.
>>
>> 2. VCO at a multiple of 10M - say 40 MHz - locked to your 10M ref and
>> divided down (by in this case 10) to give 4 MHz output.
>>
>
>I would suggest using a 4MHz crystal oscillator as your VCO. Small varicap
>to alter the VXO frequency (or use an ordinary diode or LED as the varicap,
>see http://www.hanssummers.com/radio/varicap/varicap.htm). The inherent
>stability of the VXO will allow you to use a very slow PLL, which will
>result in minimal jitter.

Agreed, a VCXO is a good way to go if you do need a VCO.

Remember, the o/p didn't reference any jitter sensitivity in the task, which may
be simple timing or gated counting of a pulse train. Neither is
jitter-sensitive.

If jitter isn't an issue, I'd personally KISS and go with #3. Small footprint,
small dissipation, no tuned circuits, no PLL parameters to calculate, no VCO's
to build, no VCXO's or xtals to buy. Only one RC time constant to calculate (or
optimise by SOT) to minimise jitter if inclined to bother.

1401. Re: high quality graph of nice 0-100 analog scale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-19 03:13:42 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <1038astmmn8nabc@corp.supernews.com>
Source record: 28488

go to:
http://hfradio.org/wb8rcr

On the lower left is a link to "Panel (not QSLmaker)"

..

"SpamLover" <n1jpr@hotmail.com> wrote in message
news:95a201e0.0402180658.39ff0e71@posting.google.com...
> I have a few slow-motion drives with pointers that I'd like to equip
> with simple log scales. I have tried to split a half-circle scale by
> means of a compass, and found it to be quite doable, but 1)
> time-consuming, 2) messy, 2) leading to power-of-two end-of scale
> values (obviously) that are anything but intuitive. I am not an
> binary / octal / hex / kind of guy, and have no affinity for scales
> that end at 64 or 128 or G_d forbid 256. I also tried making a 0-100
> scale by means of Excel / PowerPoint / Openoffice, but their rendering
> hits very soon an unsightly rough degree of approximation.
>
> Is there any place on the web whence I can download some
> high-definition graph for a 0-100 or 0-180 scale? I'd print it out in
> large format and then reduce it to the size I need by means of an
> ANALOG photocopier.
>
> TIA
>
> Spammy

1402. Re: FT707 ALC problem...help!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-19 09:06:30 UTC
From: ablight@alphalink.com.au
Message-ID: <1fc7b362.0402190106.6c7f6490@posting.google.com>
Source record: 28489
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

"Bob" <balbert@access1.net> wrote in message news:<FYmdnfn5H6RoOK7dRVn2gA@ecrii.com>...
> I would guess the PLL is going out of lock. Do a careful alignment.
>
> When the PLL is on the verge, the signal gets distorted and unstable.
>
> If there is no ALC, it's probably because there isn't enough power output to
> overcome its threshold.
>
> Just a guess; I've never worked on one of those rigs.
>
> Bob

Hi Bob,
a good theory and got me going - but then I realised it is an analog
superhet, ie no horrible nasty almost digital things. But a valid
point - will look at the o/p of the mixer on the affected bands - the
vfo runs a constant 5-5.5Mhz, so possibly the heterodyne osc. is
playing up - although, a rough check has shown the drive levels to the
PA board are constant irrespective of fault condition.
de VK3BFA Andrew

1403. Re: Frequency Division

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-19 09:22:24 UTC
From: mike@corn2.freeserve.co.uk
Message-ID: <40347faa.255837559@news.freeserve.net>
Source record: 28490

Thankyou everyone for your ideas.
I think I'll go with the VCXO phase locked to the 10Mhz reference.
Why did'nt I think of that ;-(
atb Mike W
--

1404. Designing Frequency-Dependent Impedances?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-19 10:29:02 UTC
From: abcdstutzer@evard.ch
Message-ID: <aca3ec4c.0402190229.7977e8c6@posting.google.com>
Source record: 28491
Cross-posted to: aus.electronics,de.sci.electronics,rec.radio.amateur.homebrew,rec.radio.amateur.misc,sci.electronics.basics

Hi,
Every one knows, that e.g. a simple RC-parallel circuit has a frequency-dependent impedance-characteristic (Absolute Value) - the impedance (Abs) raises as the Frequency approaches zero. As a formula: Zin = 1/(1/R + i w C) , where i ist the imaginary number and w the frequency.

Now the hard part. How does one create an Impedance, which decreases "slower", for frequencies close to zero but then decreases "faster" for higher frequencies, than the simple parallel RC-Circuit?
Is there some kind of procedure like the one for syntesizeing LC-Filters (Butterworth, Chebychev,..)?

Simply increasing C does not really help, because this equals a factoring of the frequency.
Increasing R does not help as well, as it seems.

I hope one of you cracks can help me out.
So far, thanks for reading.
Diego Stutzer

1405. Re: Designing Frequency-Dependent Impedances?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-19 14:19:55 UTC
From: NoSpam@daqarta.com
Message-ID: <4034c3f0.3049913@news.itd.umich.edu>
Source record: 28492
Cross-posted to: aus.electronics,de.sci.electronics,rec.radio.amateur.homebrew,rec.radio.amateur.misc,sci.electronics.basics

On 19 Feb 2004 02:29:02 -0800, abcdstutzer@evard.ch (Diego Stutzer)
wrote:

>Hi,
>Every one knows, that e.g. a simple RC-parallel circuit has a
>frequency-dependent impedance-characteristic (Absolute Value) - the
>impedance (Abs) raises as the Frequency approaches zero. As a formula: Zin
>= 1/(1/R + i w C) , where i ist the imaginary number and w the frequency.
>
>Now the hard part. How does one create an Impedance, which decreases
>"slower", for frequencies close to zero but then decreases "faster" for
>higher frequencies, than the simple parallel RC-Circuit?
>Is there some kind of procedure like the one for syntesizeing LC-Filters
>(Butterworth, Chebychev,..)?
>
>Simply increasing C does not really help, because this equals a factoring of
>the frequency.
>Increasing R does not help as well, as it seems.
>
>
>I hope one of you cracks can help me out.
>So far, thanks for reading.
>Diego Stutzer

I've never looked into changing the slope of impedances,
but depending on what you are doing you might be
interested in how to control the slope of filter
transfer functions to get something other than 6*N
dB/octave. A common requirement is to get 3 dB/octave,
which is done by cascading normal low-pass and high-pass
stages in a piecewise-linear approximation. The slope
starts down at -6 dB/oct then it hits a +6 stage which
flattens it out, then another -6 stage, etc. You can get
closer to the desired slope by having more stages with
closer spacing. If you are going to build a one-off version,
you might want to use buffered stages so they don't
interact and you can design your network from the Bode
plots. If you are in mass production, you may want to
skip the buffers and spend a lot more time dealing
with the interactions. Without buffers, you probably won't
be able to get a very wide frequency range, but I have
seen this approach used for generating pink noise
from white noise over a useful portion of the audio
range.

Hope this helps!

Bob Masta
dqatechATdaqartaDOTcom

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www.daqarta.com

1406. Re: Frequency Division

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-19 16:34:32 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1039pcjfvhtr700@corp.supernews.com>
Source record: 28493

Do you need the accuracy of the frequency standard? Why not just buy a
little 4MHz CMOS crystal oscillator?

If jitter and accuracy were important I'd either (hobby use) build a VXCO
with an 8MHz crystal referenced to 2MHz from the standard or (for a customer
design) buy an integrated 4MHz VXCO and reference it to 2MHz from the
standard. In either case I'd use the phase comparator from a 74HC4046 or an
exclusive OR gate. You'll be using a divide-by 5 which can be had from a
74HC390 if they're still available, and a divide-by 2 or 4, which can be had
from just about anything -- including the same 74HC390 if your hookup is a
little perverse. All the logic _could_ be done on a PAL, of course.

Come to think of it if absolute accuracy is important but jitter isn't you
can just use the oscillator from the '4046 as well, with the same division
scheme.

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

"Mike W" <mike@corn2.freeserve.co.uk> wrote in message
news:40332bc4.168810339@news.freeserve.net...
> I have a need to produce an accurate 4Mhz 50% dutycycle TTL squarewave
> to use as a timebase.
>
> I have a 10Mhz IQD frequency standard of suitable accuracy. How can I
> divide this to produce the 50% duty cycle 4Mhz signal?. Is it even
> possible with logic alone?. I can see how to mix with either 6Mhz or
> 14Mhz, but this then detracts from the required accuracy.
>
> atb Mikw

1407. Re: Best antenna (preferrably wire)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-19 19:18:22 UTC
From: Len <len2004@theuminas.com>
Message-ID: <40350bfd$1_2@corp.newsgroups.com>
Source record: 28494
Cross-posted to: rec.radio.amateur.antenna,alt.radio.amateur,rec.radio.amateur.homebrew,rec.radio.amateur.misc

The best antenna is not the longest thing you can put up, unless one of the many minor lobes you create will point exactly where you want to go at a radiation angle you need, and this is highly unlikely, but it does sometimes happen.

The best thing to do is decide where you'd like to reach, for example, which continent. Are you a DXer or do you do mostly local rag chews? What frequency bands would you like to operate, and what size constraints do you have to live with? Are there any natural supports you'd like to take advantage of? Do you need multiband operation? Do you have an deed restrictions on what you can put up?

Study the radiation patterns of dipoles, verticals and if you have the space, long wires.

Do you have a tuner?

Remember, no antenna creates RF to get "gain", they only focus it. The ideal RF antenna would radiate equally well in all directions. Since you live on earth, the effect of height is an issue, as is the ground effect on the pattern.

The best antenna to start with for a newbie is a windom cut for the lowest band that will fit on your lot. With this kind of antenna you can run all harmonic bands (ie 80M will cover 40M,20M,10M while 40M will cover 40M, 20M, 10M) quite well and not require a tuner. Several of the WARC bands will work ok too but the SWR may be a little higher. I regularly use my 80M windom on all bands here, most of them without a tuner, and the rigs tuner is good enough on the one or two where the SWR is just over 2:1 which isn't an issue, it just causes the radio to reduce power.

The second best antenna is a vertical, but most newbies screw up the installation. You either need 4 elevated radials or you need lots of radials on the ground. Lots means 16 or more. Again, the literature is full of information on these topics, and there was even an article a few months ago in QST I think where someone did a study on the best use of the wire for a vertical ground plan - ie more or longer radials for a given length of wire to optimize results.

The vertical is a good newbie antenna because it radiates equally well (some say equally poorly) in all directions. Although some of that will go to places where no one lives, if you have a good ground plane the low angle of radiation will be to your advantage. One caution, if you live with a lot of neighbors around verticals pick up noise more than horizontal antennas and this can be a big issue. In that case stick with a windom.

If you have the money and the time and a computer, try purchasing an antenna modeling software packet. I use NEC4WIN but there are many. With this, you can model various wire configurations quickly and see EXACTLY what they will do in terms of gain/loss/pattern etc. This will save you a lot of time and money building things that don't work.

Finally, if your interest is local ragchewing, a low horizontal antenna may be just fine.

I have an extensive antenna farm here, quads, yagis, dipoles, verticals, etc. and over the past 35 years I've tried everything. The best overall antenna, the one that I keep coming back to as a standard or default for comparison is the windom. This off center fed device is fed at a point where the SWR is tolerable on harmonically related bands using a matching balun. My favorite was made by Fritzel, but I don't think they make them anymore, but an internet search will turn up several suppliers and/or plans for your own. The biggest issue in a windom is just the balun, and I recommend CWS Bytemark products if you can get them.

Again though, remember that once the lengh of the wire is greater than 1/2 wavelengh the pattern starts to form lobes that can give you a great signal - somewhere - and an equally poor signal in other places. This is true for a windom too, on its harmonic bands. That is why 40 meter windoms exist (besides the fact that they are shorter).

One of the best ways to solve your problem is by reading. Fortunately these days you can read about antennas for hours on the internet at no cost, but the best books I've found over the years are the ARRL Anthology series and of course the ARRL antenna book.

73,
WT6G
PS Do not waste your time and reply to this email address. It won't work.

"ary" <send.mail@dev.null.net> wrote in message
news:pan.2004.01.19.17.46.17.807190@dev.null.net...
> Vaughn,
>
> It's quite easy: your best bet is the maximum length of wire you can keep
> in your backyard AND as high up in the air as you can afford (trees,
> towers, chimneys etc.)
>
> To prevent RFI and TVI, make your antenna symmetrical. Feed it with an
> open line, and connect the open line with your TX with an appropriate
> coupler (the ARRL Handbook is a good source for information).
>
> Please note you do not need to use a thick gauge of copper wire. Even a
> thin gauge of stainless steel wire will do.
>
> You will be pleased very much by the results !!
>
> 73 de PA0ARY
>

> On Sat, 03 Jan 2004 18:38:59 +0000, Vaughn Combs wrote:
>
> > I have a few questions and I thought that this may be the group that
could
> > help. I have a nice sized backyard and would like to construct an
antenna
> > that would give me good performance on 80-10m bands.
> >
> > The convenient dimensions would put a support (far end) at either 92
feet
> > from the back of the house (support exists that is about 15-20 feet up)
or
> > 120 feet from the back of the house (mast anchored to the other side of
a
> > shed could easily be installed. Or a more inconvenient support could be
> > erected up to 300 feet out (no support buildings) at the absolute far
end of
> > the property. The width of the property as seen looking out the back
window
> > is about 65 feet (no supports existing on either side).
> >
> > Special circumstances and constraints:
> >
> > -- No tall trees on the property.
> >
> > -- Attic shack (attic window is probably about 25 feet up). Need to keep
to
> > the attic.
> >
> > -- Cable run from back of house to operating position within the attic
would
> > be approximately 25 feet
> >
> > -- MUST eliminate RFI in the shack and house.
> >
> > My current setup is an end-fed longwire that works well on all bands
except
> > 40m (rig shuts down as I am dipping the SWR to almost 1:1 ;-). I threw
up
> > the wire as winter was upon me. I have been off the air for almost 10
years
> > and REALLY wanted to get on the air again.
> >
> > While the longwire is performing quite well with the exception of 40m I
am
> > getting a ton of RF in the shack and it is blanking out TVs and creating
> > loud humming in speakers with 100W from the XMTR. I realize that this is
> > most likely due to the fact that I have inefficient RF ground and I have
cut
> > and run radial at 1/4 wave for each band and ran them under the eaves up

> > here in the attic. This has not solved the problem. I am friendly with
all
> > of my neighbors and have visited them and did testing on the bands with
them
> > on the phone. They are not experiencing any problems. My wife, while
> > understanding, would REALLY like the problem to go away ;-)
> >
> > My main goal is to build an antenna that will solve the aforementioned
RFI
> > problem and that will provide good performance given my constraints.
> >
> > Any ideas would be GREATLY appreciated.
> >
> > Many Thanks and 73,
> > Vaughn
> > N2BHA
>

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

1408. Re: high quality graph of nice 0-100 analog scale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-19 20:53:43 UTC
From: k7itm@aol.com
Message-ID: <3200347.0402191253.2404c076@posting.google.com>
Source record: 28495

Nice and very useful, but appears to not do log scales as I believe
the OP wants. I hacked a simple Excel spreadsheet that would do fine,
except for the fact that Excel plots INCORRECT size segments
sometimes! Grrrr. Otherwise seems like it would be fine; it prints
just fine, to whatever your printer resolution is.

If the OP wants to try it in Excel perhaps a different way than he
first tried, here's what I did...
o One cell for degrees span, referenced in
next-to-last step.
o Make a column with the values where you want tics
(e.g., 1, 2, 4, 6, 8, 10, 20, 40, 60, 80, 100).
There can be any number of them, at any values
(in sequence, of course).
o Next column over, take the log of the tic values
o Next column over, take the differences between
adjacent values in previous (log) column.
There will be n-1 of them.
o Just below last cell of differences column, create
a cell with
sum(column_above)*(360-degrees_span)/degrees_span
in it.
o Create a "donut" plot of the n values in the last
column. Adjust the colors to be all the same (or
not, as you please) and the inner circle to be
the radius you want. This doesn't label the tics,
but you should be able to do that in other progs
if you want. And the tics are all the same
length, which is suboptimal.

Should be easy to do in Scilab, too, and use Ghostscript to print
(like Panel and Dial do). That gives the ability to make different
size tics and to label them.

Cheers,
Tom

"xpyttl" <xpyttl_nospam@earthling.net> wrote in message
news:<1038astmmn8nabc@corp.supernews.com>...
> go to:
> http://hfradio.org/wb8rcr
>
> On the lower left is a link to "Panel (not QSLmaker)"
>
> ..

>
> "SpamLover" <n1jpr@hotmail.com> wrote in message
> news:95a201e0.0402180658.39ff0e71@posting.google.com...
> > I have a few slow-motion drives with pointers that I'd like to equip
> > with simple log scales. I have tried to split a half-circle scale by
> > means of a compass, and found it to be quite doable, but 1)
> > time-consuming, 2) messy, 2) leading to power-of-two end-of scale
> > values (obviously) that are anything but intuitive. I am not an
> > binary / octal / hex / kind of guy, and have no affinity for scales
> > that end at 64 or 128 or G_d forbid 256. I also tried making a 0-100
> > scale by means of Excel / PowerPoint / Openoffice, but their rendering
> > hits very soon an unsightly rough degree of approximation.
> >
> > Is there any place on the web whence I can download some
> > high-definition graph for a 0-100 or 0-180 scale? I'd print it out in
> > large format and then reduce it to the size I need by means of an
> > ANALOG photocopier.
> >
> > TIA
> >
> > Spammy

1409. Re: high quality graph of nice 0-100 analog scale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-19 22:08:45 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c13c8q$1q4$1@newshost.mot.com>
Source record: 28397

Hey! Another swell use for Excel. I just did my meter faces with a drawing program. I do all kinds of graphing in Excel.
--
Steve N, K,9;d, c. i My email has no u's.

"Tom Bruhns" <k7itm@aol.com> wrote in message news:3200347.0402191253.2404c076@posting.google.com...
> Nice and very useful, but appears to not do log scales as I believe
> the OP wants. I hacked a simple Excel spreadsheet that would do fine,
> except for the fact that Excel plots INCORRECT size segments
> sometimes! Grrrr. Otherwise seems like it would be fine; it prints
> just fine, to whatever your printer resolution is.
>
> If the OP wants to try it in Excel perhaps a different way than he
> first tried, here's what I did...
> o One cell for degrees span, referenced in
> next-to-last step.
> o Make a column with the values where you want tics
> (e.g., 1, 2, 4, 6, 8, 10, 20, 40, 60, 80, 100).
> There can be any number of them, at any values
> (in sequence, of course).
> o Next column over, take the log of the tic values
> o Next column over, take the differences between
> adjacent values in previous (log) column.
> There will be n-1 of them.
> o Just below last cell of differences column, create
> a cell with
> sum(column_above)*(360-degrees_span)/degrees_span
> in it.
> o Create a "donut" plot of the n values in the last
> column. Adjust the colors to be all the same (or
> not, as you please) and the inner circle to be
> the radius you want. This doesn't label the tics,
> but you should be able to do that in other progs
> if you want. And the tics are all the same
> length, which is suboptimal.
>
> Should be easy to do in Scilab, too, and use Ghostscript to print
> (like Panel and Dial do). That gives the ability to make different
> size tics and to label them.
>
> Cheers,
> Tom
>

>
>
> "xpyttl" <xpyttl_nospam@earthling.net> wrote in message
news:<1038astmmn8nabc@corp.supernews.com>...
> > go to:
> > http://hfradio.org/wb8rcr
> >
> > On the lower left is a link to "Panel (not QSLmaker)"
> >
> > ..
> >
> > "SpamLover" <n1jpr@hotmail.com> wrote in message
> > news:95a201e0.0402180658.39ff0e71@posting.google.com...
> > > I have a few slow-motion drives with pointers that I'd like to equip
> > > with simple log scales. I have tried to split a half-circle scale by
> > > means of a compass, and found it to be quite doable, but 1)
> > > time-consuming, 2) messy, 2) leading to power-of-two end-of scale
> > > values (obviously) that are anything but intuitive. I am not an
> > > binary / octal / hex / kind of guy, and have no affinity for scales
> > > that end at 64 or 128 or G_d forbid 256. I also tried making a 0-100
> > > scale by means of Excel / PowerPoint / Openoffice, but their rendering
> > > hits very soon an unsightly rough degree of approximation.
> > >
> > > Is there any place on the web whence I can download some
> > > high-definition graph for a 0-100 or 0-180 scale? I'd print it out in
> > > large format and then reduce it to the size I need by means of an
> > > ANALOG photocopier.
> > >
> > > TIA
> > >
> > > Spammy

1410. Re: BPL WILL KILL HF HOMEBREWING IN TWO YEARS!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-20 00:11:36 UTC
From: Tom Sevart <n2uhc.spam@yahoo.com>
Message-ID: <c13c83$1dnq06$1@ID-52518.news.uni-berlin.de>
Source record: 28496

"The Eternal Squire" <eternalsquire@comcast.net> wrote in message
news:6Z6dna9eYLmaELDdRVn-hA@comcast.com...

>
> And, as you well know, FCC Chairman Powell is a thirty-something Bush
> political
> appointee and an ideologue of the first order. He has sold the soul of
> Amateur Radio
> down the river, all in the name of business above all other things. He is
> an examplar
> of all that is presently wrong with the Bush administration.

I really don't think it matters if it's a democrat or republican in the
White House... Powell it just a political appointee who really has no clue
as to how radio works. Doesn't matter if the head of the FCC was appointed
by a democrat or republican president... whoever they appoint is most likely
totally ignorant of the department they head. They are all politicians and
bureaucrats first, and knowlegable about radio second. He will do whatever
helps him, not what benefits HF radio. However, he has no idea what kind of
quagmire he is going to get into when BPL causes such massive interference
that the FCC will surely have to put an end to it.

--
Tom Sevart N2UHC
Frontenac, KS
http://www.geocities.com/n2uhc

1411. Re: BPL WILL KILL HF HOMEBREWING IN TWO YEARS!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-20 00:36:08 UTC
From: Harry George <hgg9140@seanet.com>
Message-ID: <m34qtm4mfb.fsf@wilma.local>
Source record: 28399

"Tom Sevart" <n2uhc.spam@yahoo.com> writes:

> "The Eternal Squire" <eternalsquire@comcast.net> wrote in message
> news:6Z6dna9eYLmaELDdRVn-hA@comcast.com...
>
> >
> > And, as you well know, FCC Chairman Powell is a thirty-something Bush
> > political
> > appointee and an ideologue of the first order. He has sold the soul of
> > Amateur Radio
> > down the river, all in the name of business above all other things. He is
> > an examplar
> > of all that is presently wrong with the Bush administration.
>
> I really don't think it matters if it's a democrat or republican in the
> White House... Powell it just a political appointee who really has no clue
> as to how radio works. Doesn't matter if the head of the FCC was appointed
> by a democrat or republican president... whoever they appoint is most likely
> totally ignorant of the department they head. They are all politicians and
> bureaucrats first, and knowlegable about radio second. He will do whatever
> helps him, not what benefits HF radio. However, he has no idea what kind of
> quagmire he is going to get into when BPL causes such massive interference
> that the FCC will surely have to put an end to it.
>
>
> --
> Tom Sevart N2UHC
> Frontenac, KS
> http://www.geocities.com/n2uhc

<off topic>
I disagree emphatically.

I got a ham license precisely *because* of Powell and the nbeocon
corruption/coercion of the mass media communications channels. I was
impressed that the regulations (so far) allow political discussions
over the airwaves.

Bush may personally not understand facts-and-data, but I don't think
his appointees can skate by with that excuse. Powell is corrupt, not
dumb.

In the olden days (say Goldwater's era) we had Democrats and
Republicans with honorable intentions but a difference of opinion on
how to do things. But these days, the neocons are just corporations
hijacking our country. Media consolidation, IRAQ for the oil, stall

on global warming, PATRIOT Act as corporate-managed KGB, bankrupt the nation so regulators and auditors cannot do their jobs, etc.

</off topic>

1412. Re: Designing Frequency-Dependent Impedances?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-20 00:43:07 UTC
From: Cliff Curry <cliffcurry323@comcast.net>
Message-ID: <vKcZb.223113$U%5.1356394@attbi_s03>
Source record: 28398
Cross-posted to: aus.electronics,de.sci.electronics,rec.radio.amateur.homebrew,rec.radio.amateur.misc,sci.electronics.basics

Diego: if you want to make an impedance out of regular parts, I'm afraid you don't have too much to work with. Impedances made of R, L , and C's have certain rerqirements: for example, the numberof poles and zeros cannot differ by more than 1.

If you can use active parts, though, you can get all sorts of impedances. You have to be careful with this, though, because these impedances likely will oscillate unless you put them in a circuit that dampens out their activity.

What did you have in mind?

If you want a big impedance in some frequency ranges, then a small impedance in others, one way to do that is to use a passive filter design. For example, the input of a bandpass filter looks a lot like the terminating resistance in the passband, and is much higher or lower out of the passband. So, the input impedance of a high pass filter made with several L's and C's will be large at low frequencies, and resistive (and smaller), at high frequencies.

Cliff

"Diego Stutzer" <abcdstutzer@evard.ch> wrote in message
news:aca3ec4c.0402190229.7977e8c6@posting.google.com...
> > Now the hard part. How does one create an Impedance, which decreases
> "slower", for frequencies close to zero but then decreases "faster" for
> higher frequencies, than the simple parallel RC-Circuit?
> Is there some kind of procedure like the one for syntesizeing LC-Filters
> (Butterworth, Chebychev,..)?
>
> > Diego Stutzer

1413. Re: Frequency Division

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-20 03:08:14 UTC
From: Jim Pennell <Nospam@killspam.com>
Message-ID: <ySeZb.1088$aT1.251@newsread1.news.pas.earthlink.net>
Source record: 28400

"Mike W" <mike@corn2.freeserve.co.uk> wrote in message
news:40332bc4.168810339@news.freeserve.net...
> I have a need to produce an accurate 4Mhz 50% dutycycle
> TTL squarewave to use as a timebase.
>
> I have a 10Mhz IQD frequency standard of suitable accuracy.
> How can I divide this to produce the 50% duty cycle 4Mhz
> signal?. Is it even possible with logic alone?. I can
> see how to mix with either 6Mhz or 14Mhz, but this then
> detracts from the required accuracy.

I'd be tempted to use a PAL chip. It is possible to make a multiply by 4 and then divide by 10 in the same chip, which would make the total parts required to get the 4 MHz 50% Sq Wave your original 10 MHz input and a single chip.

Jim Pennell
N6BIU

1414. Re: Designing Frequency-Dependent Impedances?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-20 09:31:13 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <103bkv4e6h64t28@corp.supernews.com>
Source record: 28401
Cross-posted to: aus.electronics,de.sci.electronics,rec.radio.amateur.homebrew,rec.radio.amateur.misc,sci.electronics.basics

I think you'll find that the impedance looking into a properly terminated highpass filter has this characteristic, provided that the filter is realized with a series C as the input component.

LC filters accomplish their attenuation by means of mismatch to a fixed source impedance, since they don't have any (intentionally) dissipative elements. This mismatch can go in either direction, that is, the impedance can get either higher or lower with frequency, depending on how you've chosen to realize the filter. One starting with a series C will have an infinite impedance at DC, and will approach the impedance of the load at frequencies substantially higher than the transition ("break") frequency. You can get increasingly fast impedance changes with increasing filter order.

Roy Lewallen, W7EL

Diego Stutzer wrote:
> Hi,
> Every one knows, that e.g. a simple RC-parallel circuit has a
> frequency-dependent impedance-characteristic (Absolute Value) - the
> impedance (Abs) raises as the Frequency approaches zero. As a formula: Zin
> = 1/(1/R + i w C) , where i ist the imaginary number and w the frequency.
>
> Now the hard part. How does one create an Impedance, which decreases
> "slower", for frequencies close to zero but then decreases "faster" for
> higher frequencies, than the simple parallel RC-Circuit?
> Is there some kind of procedure like the one for syntesizeing LC-Filters
> (Butterworth, Chebychev,..)?
>
> Simply increasing C does not really help, because this equals a factoring of
> the frequency.
> Increasing R does not help as well, as it seems.
>
>
> I hope one of you cracks can help me out.
> So far, thanks for reading.
> Diego Stutzer

1415. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-20 09:46:00 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <103blqs2abf9k5f@corp.supernews.com>
Source record: 28402

Avery Fineman wrote:
> . . .
> Making practical, reproducible active multipliers in the home shop
> is, practically, a trial-and-error process involving playing with cut-
> off bias of the active device input, energy and harmonic content of
> the source, and Q of the multiplier's output stage. In the past I've
> made tripling-in-the-plate pentode crystal oscillators using
> fundamental frequency quartz but those were highly dependent on
> getting the highest impedance tuned plate circuit and needed
> scope viewing to check output waveforms. Not very reproducible.
> There's no "easy" way to do it that will "work every time" despite
> the claims of many. :-)
> . . .

While that's certainly true of multipliers in general, I've certainly found it very easy to make repeatable doublers with a two transistor push-push stage. Driving it with about zero bias and a large enough signal to get it to conduct on at least a good fraction of each cycle gives plenty of harmonic energy. A collector circuit with decent Q will take care of most higher harmonics, although a simple filter following the stage is usually adequate for more demanding applications. The fundamental can be nulled out reasonably well with a pot between emitters with a grounded center tap. I'd think a push-pull tripler would be nearly as easy, but I haven't had occasion to make one.

Several simple diode and transistor multipliers are described in Chapter 5 of _Experimental Methods in RF Design_, which I heartily recommend for the homebrewer and experimenter.

Roy Lewallen, W7EL

1416. Re: Frequency Division

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-20 09:56:22 UTC
From: mike@corn2.freeserve.co.uk
Message-ID: <4035d89b.344155799@news.freeserve.net>
Source record: 28403

On Fri, 20 Feb 2004 03:08:14 GMT, "Jim Pennell" <Nospam@killspam.com>
wrote:

>
> I'd be tempted to use a PAL chip. It is possible to make a multiply by 4
>and then divide by 10 in the same chip, which would make the total parts
>required to get the 4 MHz 50% Sq Wave your original 10 MHz input and a
>single chip.
>
>
Mice one Jim.
1. buy your PAL programmer
2. buy your PAL
3. learn how to obtain the required function
4. burn the PAL and discover it does'nt work
5. while patience lasts go to 2. wend
6. revert to PLL

1417. Re: Frequency Division

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-20 12:45:07 UTC
From: budgie <me@privacy.net>
Message-ID: <h70c30hh6c25eqmsvf5f3ikoqs86ofisj7@4ax.com>
Source record: 28404

On Fri, 20 Feb 2004 09:56:22 GMT, mike@corn2.freeserve.co.uk (Mike W) wrote:

>On Fri, 20 Feb 2004 03:08:14 GMT, "Jim Pennell" <Nospam@killspam.com>
>wrote:
>
>
>>
>> I'd be tempted to use a PAL chip. It is possible to make a multiply by 4
>>and then divide by 10 in the same chip, which would make the total parts
>>required to get the 4 MHz 50% Sq Wave your original 10 MHz input and a
>>single chip.
>>
>>
>Mice one Jim.
>1. buy your PAL programmer
>2. buy your PAL
>3. learn how to obtain the required function
>4. burn the PAL and discover it does'nt work
>5. while patience lasts go to 2. wend
>6. revert to PLL

I could do the same analysis for a PLL - it isn't a two minute job.

Do you have a problem with an XOR chip and a 74(xx)90?

1418. Re: Designing Frequency-Dependent Impedances?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-20 13:28:29 UTC
From: "Peter O. Brackett" <no_such_address@ix.netcom.com>
Message-ID: <1YnZb.12877$hm4.11839@newsread3.news.atl.earthlink.net>
Source record: 28405
Cross-posted to: aus.electronics,de.sci.electronics,rec.radio.amateur.homebrew,rec.radio.amateur.misc,sci.electronics.basics

Diego:

You cannot do exactly what you want, but you can get arbitrarily close to it. The "closeness" being a function of cost. The closer you want to get to the desired curve of impedance versus frequency, the more the cost [cost = total number of elements in the design].

Basically what you need to do is very well known in the network synthesis literature as driving point impedance [DPI] synthesis. [e.g. Darlington's method and other similar techniques. Darlngton's technique approaches the problem of DPI as the synthesis of a lossless two port terminated in an appropriate single resistance.] Network synthesis was widely studied and taught back in the 1940 - 1970 era but... today it is seldom seen, used, or taught. There are however lots of older textbooks which cover this field. I'll post a few such references here below.

Before you can actually perform the DPI synthesis you will first have to find an appropriate rational polynomial which approximates the impedance curve you desire to match. To obtain such a rational polynomial you will first
have to solve an appropriate approximation problem. Approximation theory and the techniques for doing this are a whole 'nother problem, and other than a few simple graphical straight line segment tricks, will usually require the use of a computer with an appropriate algorithm which you may have to write yourself! :-)

Check out the following classic texts on network synthesis for a complete run down on what you need to do:

1.) Ernst A. Guillemin, "Synthesis of Passive Networks", John Wiley & Sons, NY, 1957. [LC# 57-8886. On technical library shelves at LCShelf Call # K3226.G84. See Chapters 3, 4, 9, 10 which cover DPI synthesis in detail, and Chapter 14 which covers the approximation problem.]

2.) Norman Balabanian, "Network Syntheis" Prentice-Hall, Englewood Cliffs, NJ 1958. [LC# 58-11650. On technical library shelves at LCC Shelf Call # TK3226.B26. See Chapters 2 & 3 for DPI and Chapter 9 for the approximation problem.]

3.) Louis Weinberg, "Network Analysis and Synthesis", McGraw-Hill, New York, 1962. [LC# 61-16969. On technical library shelves at LC Shelf Call # TK3226.W395. See Chapter's 9 & 10 for DPI synthesis and Chapter 11 for the approximation problem]

One does not have to realize such designs with purely passive RLC
networks and they can often be synthesized with active RC networks
[R, C and Op-Amps] by appropriate transformations of the passive
synthesis. See for instance...

4.) Adel S. Sedra and Peter O. Brackett, "Filter Theory and Design:
Active and Passive", Matrix Publishers, Portland, OR, 1978. [LC #
76-39745. On technical library shelves at LCC Shelf Call #
TK7872.F5S42.]

Also, and I have done this a couple of times for special low frequency
applications, one can match the analog driving point impedance through
an appropriate Op-Amp reflectometer circuit to a combination analog
to digital A/D and digital to analog converter D/A and perform/emulate
the DPI synthesis in real time using digital signal procssing [DSP]
techniques.
Basically to use the A/D - D/A digital technique to emulate the desired
DPI you will have to solve the same synthesis and approximation
problems.

Hope that all helps... good luck

:-)

--
Peter K1PO
Consultant - Signal Processing and Analog Electronics
Indialantic By-the-Sea, FL

"Diego Stutzer" <abcdstutzer@evard.ch> wrote in message
news:aca3ec4c.0402190229.7977e8c6@posting.google.com...
> Hi,
> Every one knows, that e.g. a simple RC-parallel circuit has a
> frequency-dependent impedance-characteristic (Absolute Value) - the
> impedance (Abs) raises as the Frequency approaches zero. As a formula:
Zin
> = 1/(1/R + i w C) , where i ist the imaginary number and w the frequency.
>
> Now the hard part. How does one create an Impedance, which decreases
> "slower", for frequencies close to zero but then decreases "faster" for
> higher frequencies, than the simple parallel RC-Circuit?
> Is there some kind of procedure like the one for syntesizeing LC-Filters
> (Butterworth, Chebychev,..)?
>
> Simply increasing C does not really help, because this equals a factoring
of
> the frequency.
> Increasing R does not help as well, as it seems.
>
>
> I hope one of you cracks can help me out.
> So far, thanks for reading.
> Diego Stutzer

1419. Source for Polyvaricon Caps

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-20 16:21:30 UTC
From: Bob Schreibmaier <k3ph@ptd.net>
Message-ID: <d4adnb8t8ouUqavdUSdV9g@ptd.net>
Source record: 28406

I am looking for a source for polyvaricon capacitors.
It seems to me that Mouser stocked them at one time,
but I can't find them in the catalog now.

Thanks in advance.

--
+---+
| Bob Schreibmaier K3PH | E-mail: k3ph@ptd.net |
| Kresgeville, PA 18333 | http://www.dxis.org |
+---+

1420. Re: high quality graph of nice 0-100 analog scale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-20 20:04:25 UTC
From: Duncan Clark <news0000001@ntlworld.com>
Message-ID: <tbYWRHBJhmNAFwWn@ntlworld.com>
Source record: 28407

In message <95a201e0.0402180658.39ff0e71@posting.google.com>, SpamLover
<n1jpr@hotmail.com> writes
>Is there any place on the web whence I can download some
>high-definition graph for a 0-100 or 0-180 scale? I'd print it out in
>large format and then reduce it to the size I need by means of an
>ANALOG photocopier.

http://www.qsl.net/wb6bld/meter.html

Duncan
--
Support bacteria. They are the only culture some people have.

Duncan Clark

1421. Re: Damping Higher Harmonics on a parallel LC-Oscillator? (1 port Low-, High-, Bandpasses?)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-20 20:20:05 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <103cqvpiefe5q95@corp.supernews.com>
Source record: 28408

Unfortunately, the question is something like how to convert a VW to a Mercedes -- you pull the radiator cap from the VW, drive it off, drive the Mercedes under, and put the radiator cap onto the Mercedes.

Harmonics are caused by distortion of the generated wave. This distortion is caused by overdriving the oscillator, which is necessary unless some other method of limiting is employed. An oscillator is an amplifier with gain greater than one whose output signal is fed back to the input. When it starts, the signal amplitude increases until something limits it. In a simple oscillator like this one, the limiting factor is the smashing of the waveform as the transistor gets overdriven each cycle. Distortion is inevitable and necessary. So, you can either reduce the distortion or you can try to filter it.

Filtering presents a couple of problems. One is that you're apparently radiating enough signal (and harmonics) without an antenna. That means that even if you had a perfect filter someplace, you still have enough energy being radiated from the portion of the circuit that's ahead of the filter. If you simply try to trap or reduce the harmonics at the collector, you might stifle the oscillation by cleaning up the waveform and eliminating the smashing.

In general, less feedback will reduce the waveform distortion. The tradeoff is that the oscillator will start more slowly, and if the feedback becomes too little at some temperature or battery voltage, it'll stop altogether. But it you'd like to try this, fiddle with the values of C1, C2, and C4. I believe that decreasing C1 or C2, or increasing C4, will reduce the feedback.

If you want try improving the collector waveform, increase the Q of the tank by decreasing L1 and increasing C6 to compensate. Or you can try putting a series LC network (with fairly high L/C ratio) from the collector to ground, tuned to the second or third harmonic, to act as a trap for one particular harmonic. Any of these schemes could make the oscillator stop, though.

A professional approach would be to add a buffer stage, and build the oscillator and buffer in a shielded box, with good filtering on any lines going in or out except the output signal conductor. Then, a filter at the output would be effective, so one could be designed to take care of the harmonics to any extent desired.

Roy Lewallen, W7EL

Diego Stutzer wrote:
> Hi,
>
> I built a small FM Radio as shown on
> http://members.aol.com/torkraemer/ukwsender/ukwsender.html.
> As it is it works pretty well, allthough I operate it without any
> adition antenna.
>
> Of course there are pretty high (unwanted) peaks in the frequency-band
> at multiples of the operating frequency.
> Because I don't want to use an additional antenna, I can't filter the
> signal on its way from L1 to the antenna with a common "2-port
> Bandpass".
> Putting such a Bandpass (or Lowpass) between the DC-Source and the
> LC-Circuit did not seem to work well.
>
> So how can I damp those harmonics on L1 Coil? I thought of some kind
> of frequency dependent impedance in parallel with the Coil.
>
> I tried this with another LC-prallel Circuit which has an impedance of
> approx. 0 Ohms at 200 Mhz. This works as expected but seems a bit
> unsophisticated and the Impedance falls too slow as the frequency
> approaches the 200Mhz.
>
> Unfortunately I have no Idea how to design a "higher order
> 1-port-Bandpass", or even more likeably a Highpass.
>
> What would you recommend?
> What shoud I read?
> Any suggestions are welcome.
>
> Thanks to all, and sorry for the lenght of the message.
>
> Diego S.

1422. Re: Designing Frequency-Dependent Impedances?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-20 21:17:28 UTC
From: Kristine Hyvang <kristine.hyvang@chello.no>
Message-ID: <UNuZb.1000$EV2.7348@amstwist00>
Source record: 28409
Cross-posted to: aus.electronics,de.sci.electronics,rec.radio.amateur.homebrew,rec.radio.amateur.misc,sci.electronics.basics

"Diego Stutzer" <abcdstutzer@evard.ch> wrote in message
news:aca3ec4c.0402190229.7977e8c6@posting.google.com...
> Hi,
> Every one knows, that e.g. a simple RC-parallel circuit has a
> frequency-dependent impedance-characteristic (Absolute Value) - the
> impedance (Abs) raises as the Frequency approaches zero. As a formula:
Zin
> = 1/(1/R + i w C) , where i ist the imaginary number and w the frequency.
>
> Now the hard part. How does one create an Impedance, which decreases
> "slower", for frequencies close to zero but then decreases "faster" for
> higher frequencies, than the simple parallel RC-Circuit?
> Is there some kind of procedure like the one for syntesizeing LC-Filters
> (Butterworth, Chebychev,..)?
>
> Simply increasing C does not really help, because this equals a factoring
of
> the frequency.
> Increasing R does not help as well, as it seems.
>
>
> I hope one of you cracks can help me out.
> So far, thanks for reading.
> Diego Stutzer

I'm not sure if I understood your question. You want a filter " which
decreases
"slower", for frequencies close to zero but then decreases "faster" for
higher frequencies.
I take it you want a transmission (starting from DC) a curve that "slowly"
decreases until a top point (the resonant freq.), and then falls quickly !?

A second order (or higher polynomial) Butterworth filter will do that for
you.
It has a transmission of Vout/Vin = k/(s^2 +bs+c)

where b is the ratio of the steepness Q (decrease of impedance) to the
resonant frequency.
c is the reciproc of the squared resonant frequency [1/ (w^2)] w-
radians.
k is a scalar - the DC amplification

Now what is the resonant frequency in your question ?
-It is the point where the transmission "decreases" in both direction (the

top point).

You would find a well suited circuit description in textbooks explaining about the "Sallen Key" set up. It uses one op-amp, two capcitors (one in the positive feedback !) and three resistors. It even works !

(^ - means squared)

1423. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-20 21:37:21 UTC
From: averyfineman@aol.com
Message-ID: <20040220163721.25815.00006814@mb-m07.aol.com>
Source record: 28410

In article <103blqs2abf9k5f@corp.supernews.com>, Roy Lewallen <w7el@eznec.com>
writes:

>Avery Fineman wrote:
>> . . .
>> Making practical, reproducible active multipliers in the home shop
>> is, practically, a trial-and-error process involving playing with cut-
>> off bias of the active device input, energy and harmonic content of
>> the source, and Q of the multiplier's output stage. In the past I've
>> made tripling-in-the-plate pentode crystal oscillators using
>> fundamental frequency quartz but those were highly dependent on
>> getting the highest impedance tuned plate circuit and needed
>> scope viewing to check output waveforms. Not very reproducible.
>> There's no "easy" way to do it that will "work every time" despite
>> the claims of many. :-)
> > . . .
>
>While that's certainly true of multipliers in general, I've certainly
>found it very easy to make repeatable doublers with a two transistor
>push-push stage. Driving it with about zero bias and a large enough
>signal to get it to conduct on at least a good fraction of each cycle
>gives plenty of harmonic energy. A collector circuit with decent Q will
>take care of most higher harmonics, although a simple filter following
>the stage is usually adequate for more demanding applications. The
>fundamental can be nulled out reasonably well with a pot between
>emitters with a grounded center tap. I'd think a push-pull tripler would
>be nearly as easy, but I haven't had occasion to make one.

Okay. I can't agree that they are "easy" after having enough
occasions to make several. :-)

Your mileage, of course, varies.

>Several simple diode and transistor multipliers are described in Chapter
>5 of _Experimental Methods in RF Design_, which I heartily recommend for
>the homebrewer and experimenter.

A diode doubler using a toroid transformer, pair of diodes and a tuned
circuit in the output works fine right off the paper pad and slide-rule (or
calculator) numbers. Typically the source is a distorted sinewave
from either another multiplier or an oscillator. Rocket science it ain't.

BREADBOARD. A most handy part of the bench tools. Recommended
first. Especially for those purist hobbyists who think that digital
circuits
aren't "real radio." :-)

Playing with bias on a transistor multiplier stage is fine for optimizing a multiplication but all it is is play when there's nothing to compare one bias setting with another as to power output at the desired multiple. A spectrum analyzer isn't an absolute need, by the way, there's other ways to measure the harmonic content. Is that in "Experimental Methods..." published by the ARRL? [I'm pushing work-on-the-bench, not books, pardon my attitude that has resulted from years of having to produce hardware results, not paper reports]

Len Anderson
retired (from regular hours) electronic engineering person

1424. Re: Designing Frequency-Dependent Impedances?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-20 21:37:25 UTC
From: averyfineman@aol.com
Message-ID: <20040220163725.25815.00006815@mb-m07.aol.com>
Source record: 28411

In article <aca3ec4c.0402190229.7977e8c6@posting.google.com>,
abcdstutzer@evard.ch (Diego Stutzer) writes:

>Every one knows, that e.g. a simple RC-parallel circuit has a
>frequency-dependent impedance-characteristic (Absolute Value) - the
>impedance (Abs) raises as the Frequency approaches zero. As a formula: Zin
>= 1/(1/R + i w C) , where i ist the imaginary number and w the frequency.

"Everyone" doesn't know that. You have the basic formula for
ADMITTANCE, not impedance. Let's clarify some terms first. The
admittance of a simple parallel R-C is more commonly written:

Y = (1 / R) + j (omega x C)

Where: Omega = 2 x pi x frequency in Hz, the whole quantity
often referred to as "radian frequency"

The "j" is used in electronics in place of the lower-case "i"
for the imaginary part of a complex quantity. Electronics
folks do that to avoid confusion with AC current normally
written as "i".

To find the impedance, take the COMPLEX INVERSE of admittance
to get impedance from the identity:

Z = 1 / Y = [a / d] - j [b / d] where:

a = real part b = imaginary part

d = denominator = a^2 + b^2 [sum of the squares]

For the final equation the impedance of the parallel R-C is:

a = (1 / R) b = (1 / (omega x C)) and

d = [R^2 + (omega x C)^2] / [omega^2 x R^2 x C^2]

or, in final form:

Z = [(omega^2 x C^2 x R) / (R^2 + (omega^2 x C^2))]

- j [(omega x C x R^2) / (R^2 + (omega^2 x C^2))]

Like it or not, the above is what tens of thousands of electronikers work
with every day worldwide. Obviously one can do some approximations
for real-world applications where the errors are allowed to be kind of
gross, but that depends on the (unspecified) application.

>Now the hard part. How does one create an Impedance, which decreases
>"slower", for frequencies close to zero but then decreases "faster" for
>higher frequencies, than the simple parallel RC-Circuit?

At very near DC, the impedance is governed by R since the reactance
of C is going to be so high that it becomes one with the dielectric
material all around.

The "rate of decrease" of impedance is governed by the value of C.
Graphed, it begins at pure R and then decreases at a slope
governed only by C..

>Is there some kind of procedure like the one for syntesizeing LC-Filters
>(Butterworth, Chebychev,..)?

First of all, the procedure should be to get the terms correct. From
there on, it is some grunt work with a scientific calculator.

Suggestion: For those who use an HP 32S II programmable with
long-term power-off storage of program and constants, I keep 2 x Pi
in constant storage in register T for handiness in getting radian
frequency values. A recall and multiply by frequency yields "omega"
which can be stored in register W. Easy to punch through the
numbers that way.

>Simply increasing C does not really help, because this equals a factoring of
>the frequency.Increasing R does not help as well, as it seems.

Simply increasing C most definitely sets the higher frequency impedance.
There's nothing else in there in a two-component circuit that is frequency
sensitive...except for the Q or quality factor of the capacitor and lead
lengths of components. If one needs to get very fussy, there's always
a SPICE analysis where everything can be modeled, lead lengths, stray
capacity, everything.

Yes, modern network theory can make all kinds of impedance-varying
circuits with many parts and there are many, many textbooks on the
subject, all costing much money. In order to use all that material, one
has to know the difference between impedance and admittance and how
to convert from one to the other.

Len Anderson
retired (from regular hours) electronic engineer person

1425. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-20 21:53:26 UTC
From: averyfineman@aol.com
Message-ID: <20040220165326.07984.00000715@mb-m22.aol.com>
Source record: 28413

In article <103blqs2abf9k5f@corp.supernews.com>, Roy Lewallen <w7el@eznec.com>
writes:

>Avery Fineman wrote:
>> . . .
>> Making practical, reproducible active multipliers in the home shop
>> is, practically, a trial-and-error process involving playing with cut-
>> off bias of the active device input, energy and harmonic content of
>> the source, and Q of the multiplier's output stage. In the past I've
>> made tripling-in-the-plate pentode crystal oscillators using
>> fundamental frequency quartz but those were highly dependent on
>> getting the highest impedance tuned plate circuit and needed
>> scope viewing to check output waveforms. Not very reproducible.
>> There's no "easy" way to do it that will "work every time" despite
>> the claims of many. :-)
> > . . .
>
>While that's certainly true of multipliers in general, I've certainly
>found it very easy to make repeatable doublers with a two transistor
>push-push stage. Driving it with about zero bias and a large enough
>signal to get it to conduct on at least a good fraction of each cycle
>gives plenty of harmonic energy. A collector circuit with decent Q will
>take care of most higher harmonics, although a simple filter following
>the stage is usually adequate for more demanding applications. The
>fundamental can be nulled out reasonably well with a pot between
>emitters with a grounded center tap. I'd think a push-pull tripler would
>be nearly as easy, but I haven't had occasion to make one.

Okay. I can't agree that they are "easy" after having enough
occasions to make several. :-)

Your mileage, of course, varies.

>Several simple diode and transistor multipliers are described in Chapter
>5 of _Experimental Methods in RF Design_, which I heartily recommend for
>the homebrewer and experimenter.

A diode doubler using a toroid transformer, pair of diodes and a tuned
circuit in the output works fine right off the paper pad and slide-rule (or
calculator) numbers. Typically the source is a distorted sinewave
from either another multiplier or an oscillator. Rocket science it ain't.

BREADBOARD. A most handy part of the bench tools. Recommended
first. Especially for those purist hobbyists who think that digital
circuits
aren't "real radio." :-)

Playing with bias on a transistor multiplier stage is fine for optimizing a multiplication but all it is is play when there's nothing to compare one bias setting with another as to power output at the desired multiple. A spectrum analyzer isn't an absolute need, by the way, there's other ways to measure the harmonic content. Is that in "Experimental Methods..." published by the ARRL? [I'm pushing work-on-the-bench, not books, pardon my attitude that has resulted from years of having to produce hardware results, not paper reports]

Len Anderson
retired (from regular hours) electronic engineering person

1426. Re: Designing Frequency-Dependent Impedances?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-20 21:53:32 UTC
From: averyfineman@aol.com
Message-ID: <20040220165332.07984.00000716@mb-m22.aol.com>
Source record: 28412

In article <aca3ec4c.0402190229.7977e8c6@posting.google.com>,
abcdstutzer@evard.ch (Diego Stutzer) writes:

>Every one knows, that e.g. a simple RC-parallel circuit has a
>frequency-dependent impedance-characteristic (Absolute Value) - the
>impedance (Abs) raises as the Frequency approaches zero. As a formula: Zin
>= 1/(1/R + i w C) , where i ist the imaginary number and w the frequency.

"Everyone" doesn't know that. You have the basic formula for
ADMITTANCE, not impedance. Let's clarify some terms first. The
admittance of a simple parallel R-C is more commonly written:

Y = (1 / R) + j (omega x C)

Where: Omega = 2 x pi x frequency in Hz, the whole quantity
often referred to as "radian frequency"

The "j" is used in electronics in place of the lower-case "i"
for the imaginary part of a complex quantity. Electronics
folks do that to avoid confusion with AC current normally
written as "i".

To find the impedance, take the COMPLEX INVERSE of admittance
to get impedance from the identity:

Z = 1 / Y = [a / d] - j [b / d] where:

a = real part b = imaginary part

d = denominator = a^2 + b^2 [sum of the squares]

For the final equation the impedance of the parallel R-C is:

a = (1 / R) b = (1 / (omega x C)) and

d = [R^2 + (omega x C)^2] / [omega^2 x R^2 x C^2]

or, in final form:

Z = [(omega^2 x C^2 x R) / (R^2 + (omega^2 x C^2))]

- j [(omega x C x R^2) / (R^2 + (omega^2 x C^2))]

Like it or not, the above is what tens of thousands of electronikers work
with every day worldwide. Obviously one can do some approximations
for real-world applications where the errors are allowed to be kind of
gross, but that depends on the (unspecified) application.

>Now the hard part. How does one create an Impedance, which decreases
>"slower", for frequencies close to zero but then decreases "faster" for
>higher frequencies, than the simple parallel RC-Circuit?

At very near DC, the impedance is governed by R since the reactance
of C is going to be so high that it becomes one with the dielectric
material all around.

The "rate of decrease" of impedance is governed by the value of C.
Graphed, it begins at pure R and then decreases at a slope
governed only by C..

>Is there some kind of procedure like the one for syntesizeing LC-Filters
>(Butterworth, Chebychev,..)?

First of all, the procedure should be to get the terms correct. From
there on, it is some grunt work with a scientific calculator.

Suggestion: For those who use an HP 32S II programmable with
long-term power-off storage of program and constants, I keep 2 x Pi
in constant storage in register T for handiness in getting radian
frequency values. A recall and multiply by frequency yields "omega"
which can be stored in register W. Easy to punch through the
numbers that way.

>Simply increasing C does not really help, because this equals a factoring of
>the frequency.Increasing R does not help as well, as it seems.

Simply increasing C most definitely sets the higher frequency impedance.
There's nothing else in there in a two-component circuit that is frequency
sensitive...except for the Q or quality factor of the capacitor and lead
lengths of components. If one needs to get very fussy, there's always
a SPICE analysis where everything can be modeled, lead lengths, stray
capacity, everything.

Yes, modern network theory can make all kinds of impedance-varying
circuits with many parts and there are many, many textbooks on the
subject, all costing much money. In order to use all that material, one
has to know the difference between impedance and admittance and how
to convert from one to the other.

Len Anderson
retired (from regular hours) electronic engineer person

1427. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-20 23:22:38 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <103d5m3bnncu0cb@corp.supernews.com>
Source record: 28414

Avery Fineman wrote:
> . . .
> Playing with bias on a transistor multiplier stage is fine for optimizing a
> multiplication but all it is is play when there's nothing to compare one
> bias setting with another as to power output at the desired multiple.
> A spectrum analyzer isn't an absolute need, by the way, there's other
> ways to measure the harmonic content. Is that in "Experimental
> Methods..." published by the ARRL? [I'm pushing work-on-the-bench,
> not books, pardon my attitude that has resulted from years of having
> to produce hardware results, not paper reports]
>
> Len Anderson
> retired (from regular hours) electronic engineering person

Yes, that book is published by the ARRL. Its authors, Wes Hayward, W7ZOI; Rick Campbell, KK7B; and Bob Larkin, W7PUA have, unlike so many authors, spent careers doing just what you and I have had to do -- produce hardware results. Of them, I know Wes the best, having been friends with him for about 30 years. After a stint at Boeing long ago, Wes was a design engineer in the spectrum analyzer group at Tektronix for a number of years, where his designs were incorporated in a number of state-of-the-art spectrum analyzers. He went from there to TriQuint semiconductor, where he designed many RF components which are in daily use in probably millions of cell phones and other wireless products. He recently retired and has been doing some consulting. His publications in amateur journals, spanning decades, are legendary and many are seminal. I don't know Rick quite as well, but he's also a very capable and accomplished engineer (in spite, one might say, of his Ph.D. and period in academia). For years now, he's also worked as a design engineer at TriQuint. To get a feel for his approach to solving real problems, check out the articles he's published over the years in QST on phasing type direct conversion receivers. Bob I don't know at all, but Wes speaks very highly of him, and I have absolute confidence in Wes' judgement of skill.

There's nothing in that book that hasn't been built and tested, and designed to be repeatable. And everything has been designed by people who really know what they're doing. This isn't a book of kluged-it-up-on-the-bench-and-made-one-work-once projects as so many are. I'm sure that if you'd take a few minutes to look over the book, you'd immediately recognize that.

To answer your specific question, I don't, in a brief scan, see details in the book about optimizing the bias for maximum harmonic content of the multipliers. Most are diode multipliers anyway, with no bias

adjustment. The book covers a very wide range of topics, and the section on multipliers consists of only a couple of pages of text. There is, however, a chapter on simple test equipment a homebrewer can build, including a brief description of a practical spectrum analyzer. Wes did, incidentally, design and publish such a thing some years ago. I think it's still available in kit form from Kanga US.

I've also spent a career having to produce real results. But apparently our approaches differed, because I've found that good paper designs, often aided by fundamental knowledge gleaned from books, lead to good hardware results, rather than being an opposing and somehow inferior method. And they have the advantage of being well understood, predictable, and repeatable.

Roy Lewallen, W7EL

1428. Avantek YIG osc data?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 00:21:04 UTC
From: k7itm@aol.com
Message-ID: <3200347.0402201621.a234912@posting.google.com>
Source record: 28415

Hi all,

An Avantek AV-7036 YIG oscillator has just fallen out of the sky and landed in my vicinity. Anyone happen to have specs on it? Like, what power does it take, and what drive to the tune and FM ports?

Cheers,
Tom

1429. FS

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 00:34:55 UTC
From: Carl Domanico <vze2686b@verizon.net>
Message-ID: <PIxZb.64368$IF1.57369@nwrdny03.gnilink.net>
Source record: 28416

Motorola UHF JT-1000 Radio..... Paid $800.00

Motorola NMN6193B Premium Speaker Mic... Paid $95.00

Motorola Drop In Quick Charger, Used for Nicd Batteries (NTN7212B) Paid...$ 70.00

Motorola Heavy Duty Leather, Swival, Belt Case...Paid..$ 45.00

Program Key

W & W Battery Eliminator...Allows Plug-in to cigerette lighter...New...Paid..$ 55.00 (WCE-060M5-7144A)

Rubber Contack cover, For side of radio, when no speaker mic is used

Polaris PA-2 Programming Adapter (Ribb Box) w/ Built in Nicd Battery, can be charged and used in the field , if necessary....Paid..$ 159.95

Polaris Radio Interface Cable, used for HT-1000, MT-2000, MTX838, MTX8000, MTX9000, and JEDI- Series....Paid...$ 135.95

Itech iq-pac, Professional Commercial Duty , Charger / Analyzer / Conditioner.....Paid $ 199.95

JABRO 2100 ma 7.5 vdc NiMi Batteries...(2) Paid $ 45.00 ea....Total $ 90.00

Battery Belt Clips...Paid $ 29.00

Bondwell SuperSlim B-310 High Speed 286 Laptop / w AC Power Supply... Paid Used $ 100.00

Laptop is complete w / RSS Software for JT-1000 and Jedi-Series.....Also supplied Hacked RSS Software..To allow JT-1000 To be field Programmed without the Programming Key....Speaker Mic can be left in place when Programming The radio...(Government Mod)

Note : All Equipment Purchased New...Except Laptop...Mint Condition...Complete w /Original Manuals

Included w/ Package Complete Portfolio w / Many Types of Tricks and things that can be done to Radio

Make Offer......For complete package

1430. Re: Frequency Division

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 04:20:02 UTC
From: Jim Pennell <Nospam@killspam.com>
Message-ID: <S%AZb.3265$aT1.243@newsread1.news.pas.earthlink.net>
Source record: 28417

On Fri, 20 Feb 2004 09:56:22 GMT, mike@corn2.freeserve.co.uk (Mike W) wrote:

>
>Mice one Jim.
>1. buy your PAL programmer
>2. buy your PAL
>3. learn how to obtain the required function
>4. burn the PAL and discover it does'nt work
>5. while patience lasts go to 2. wend
>6. revert to PLL

Well, true... Happens I have access to that sort of thing, but I do see your point.

Another approach might be to divide by 5 and then you can double twice with a couple of chips, and then divide by 2 to get the 50% duty cycle.

A PLL system works, but for something this simple a couple of generic glue logic IC's will serve the purpose.

Let me see, it'd require a 7490, a hex inverter for some delay in the multiplier, and a 7400 nand. If memory serves, that ought to do it.

Jim Pennell
N6BIU

1431. looking for rf design book

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 07:20:40 UTC
From: gobo20@lycos.com
Message-ID: <f6a54aa0.0402202320.5bd55668@posting.google.com>
Source record: 28418

Does anyone have any book recommendations of a "cookbook" for RF design? Cookbook might not be the best word. Something that covers network design, S-parameters, filters, Smith charts, etc. Something without the calculus! I had all this in school (oof, 25 years ago) and didn't retain it because I've not used it. Now I have an amateur license and want to just play with vhf and uhf circuits. I want to do things right, but don't want to have to go back and audit three calculus courses to remember how to do LaPlace transforms. (Yeah, someone's going to say "you gotta" and I know that, but I want to play with the electronics and not spend months on the math.)

Thanks.

1432. Re: looking for rf design book

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 09:06:56 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <QcFZb.33361$D_5.5916@edtnps84>
Source record: 28419

The Motorola RF Data Handbook can't be beat for this.

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

1433. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 09:25:40 UTC
From: k7itm@aol.com
Message-ID: <3200347.0402210125.7f3308f1@posting.google.com>
Source record: 28420

Roy Lewallen <w7el@eznec.com> wrote in message
news:<103d5m3bnncu0cb@corp.supernews.com>...
> ... I've found that good paper designs,
> often aided by fundamental knowledge gleaned from books, lead to good
> hardware results, rather than being an opposing and somehow inferior
> method. And they have the advantage of being well understood,
> predictable, and repeatable.

Indeed. Occasionaly new not-yet-understood phenomena are discovered
on the bench, but the art benefits greatly from a detailed
understanding of the underlying mechanisms. Coincidently, I was
browsing "Inventions of Opportunity" this afternoon and stumbled
across an article about how in the late 1950's a newly-developed high
speed sampling scope aided in understanding harmonic-generation
mechanisms in diodes, which apparently helped a lot in the development
of step recovery diodes. Before that, apparently there wasn't good
understanding about why some diodes generated lots of harmonics and
others didn't. Step recovery diodes are optimized for fast turn-off
of the reverse recovery, and are used in generating a "comb" of
harmonics. It's not uncommon to pick off the desired harmonic with an
appropriate filter, up to beyond the tenth harmonic. Seems like step
recovery diodes are not in as great favor as they once were, since
there are generally better ways to generate higher order harmonics.

With a little understanding of the spectrum of a non-symmetrical
square (or trapezoid) wave, it's not hard to come very close to an
optimum bias and drive for a given harmonic output in an amplifier
stage. If you do it just by experimentation, you're liable to find a
local optimum that's quite a bit worse than the global optimum. Same
with the output coupling/filtering network.

Cheers,
Tom

1434. Re: looking for rf design book

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 09:35:36 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <nS4ZXPEoZyNAFAm1@ifwtech.co.uk>
Source record: 28421

gobo wrote:
>Does anyone have any book recommendations of a "cookbook" for RF
>design? Cookbook might not be the best word. Something that covers
>network design, S-parameters, filters, Smith charts, etc. Something
>without the calculus! I had all this in school (oof, 25 years ago)
>and didn't retain it because I've not used it. Now I have an amateur
>license and want to just play with vhf and uhf circuits. I want to do
>things right, but don't want to have to go back and audit three
>calculus courses to remember how to do LaPlace transforms. (Yeah,
>someone's going to say "you gotta" and I know that, but I want to play
>with the electronics and not spend months on the math.)

Good news: to "do things right", you don't actually "needta" revisit those courses. Their uses in RF design would be far too specialized for what you need right now.

What you need much more is the basic knowledge that qualified you to take those higher courses... and even after 25 years, I bet that knowledge is still with you. Simply being prepared to plug numbers into formulae, and maybe transpose a few variables, will take you a long, long way into RF design.

So... just explore, follow your instincts, and the math you need will come back to you.

Although not an RF design text, 'The Art of Electronics' by Horowitz and Hill is an excellent example to how to use math when you need it, while always avoiding unnecessary 'math for math's sake'.

Some areas do require math because they're fundamentally math-driven, for example complex modulation and DSP techniques - but even there you can understand a lot from an *appreciation* of the math (by which I mean the ability to understand where it's going, as distinct from the ability to do it yourself).

The huge advantage of being an amateur is that you don't need to go into areas that require knowledge you don't possess. The *other* huge advantage of being an amateur is that, if you decide that's where you want to go, then nothing is off-limits!

RF design, now... to get yourself started, try Bowick (sorry, I can't remember the exact title, but the name will find it) and also Hayward's 'Introduction to RF Design' (now published by ARRL).

The other growing-point in RF design is the use of computer-aided design and analysis. Gradually, radio amateurs are moving towards this approach, where you spend quite a lot of time designing, but don't

switch the soldering iron on until quite late in the process. Seek out books that use this approach (but avoid books that are too closely tied to any specific brand of software). There are lots of free 'student version' software downloads on the web, but that's a separate large topic.

Finally, pick up an old copy of Terman's 'Radio Engineering', to keep yourself in touch with the days when it all had to be done using algebra on the bare metal. That demanded a very fundamental level of understanding, which is in danger of becoming lost.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

1435. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 11:20:07 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <103efnbpjtna3da@corp.supernews.com>
Source record: 28422

Tom Bruhns wrote:
> . . .
> . . . Seems like step
> recovery diodes are not in as great favor as they once were, since
> there are generally better ways to generate higher order harmonics.
> . . .

Getting a bit off-topic here, but as of a few years ago, we were using step recovery diodes to generate the step in high speed TDR systems, and to generate the strobe for the sampling gate in high speed sampling scopes. Rise times were on the order of 7 - 15 ps (bandwidth up to 50 GHz or so), limited primarily by circuitry external to the diodes. SRDs replaced tunnel diodes in earlier generations of instruments. I've been out of touch with that class of instruments for a few years now -- do you know if something has replaced the SRD for generating fast steps, or just for harmonic generation?

Roy Lewallen, W7EL

1436. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 12:28:11 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <p0je30ta6l47nv05utaiir1j6fjhmovn2b@4ax.com>
Source record: 28424

On Sat, 21 Feb 2004 03:20:07 -0800, Roy Lewallen <w7el@eznec.com>
wrote:

>Tom Bruhns wrote:
>> . . .
>> . . . Seems like step
>> recovery diodes are not in as great favor as they once were, since
>> there are generally better ways to generate higher order harmonics.
>> . . .
>
>Getting a bit off-topic here, but as of a few years ago, we were using
>step recovery diodes to generate the step in high speed TDR systems, and
>to generate the strobe for the sampling gate in high speed sampling
>scopes. Rise times were on the order of 7 - 15 ps (bandwidth up to 50
>GHz or so), limited primarily by circuitry external to the diodes. SRDs
>replaced tunnel diodes in earlier generations of instruments. I've been
>out of touch with that class of instruments for a few years now -- do
>you know if something has replaced the SRD for generating fast steps, or
>just for harmonic generation?

What's a doubler based on the good old 1N4148 good for, top end
frequency-wise?
--

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1437. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 12:28:12 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <h4je30p8prnjpnqmfo6ngph9h24niviaqk@4ax.com>
Source record: 28423

On 20 Feb 2004 21:53:26 GMT, averyfineman@aol.com (Avery Fineman)
wrote:

> A diode doubler using a toroid transformer, pair of diodes and a tuned
> circuit in the output works fine right off the paper pad and slide-rule (or
> calculator) numbers. Typically the source is a distorted sinewave

Is the type of distortion critical? How about a clipped/clamped
sinewave?
--

The BBC: Licensed at public expense to spread lies.

1438. RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 12:28:13 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <79je305q3vgfg1eklubha2u9ecsap68pa1@4ax.com>
Source record: 28425
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Anyone care to nominate an RF mixer chip for <100Mhz that's readily
available in the UK?
--

The BBC: Licensed at public expense to spread lies.

1439. Re: looking for rf design book

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 12:28:14 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <0fje30h39ngbbkde1m07v8c0u2h4inq5oc@4ax.com>
Source record: 28426

On 20 Feb 2004 23:20:40 -0800, gobo20@lycos.com (gobo) wrote:

>Does anyone have any book recommendations of a "cookbook" for RF
>design? Cookbook might not be the best word. Something that covers
>network design, S-parameters, filters, Smith charts, etc. Something
>without the calculus!

Sounds like a perfect description of 'RF Circuit Design' by Chris
Bowick (Newnes). Check it out.
--

The BBC: Licensed at public expense to spread lies.

1440. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 14:05:20 UTC
From: John Jardine <john@jjdesigns.fsnet.co.uk>
Message-ID: <c17o7e$2v2$1@news5.svr.pol.co.uk>
Source record: 28427
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:79je305q3vgfg1eklubha2u9ecsap68pa1@4ax.com...
>
> Anyone care to nominate an RF mixer chip for <100Mhz that's readily
> available in the UK?
> --
>
> The BBC: Licensed at public expense to spread lies.

LM1496

1441. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 15:51:50 UTC
From: maxfoo <maxfooHeadFromButt@punkass.com>
Message-ID: <b9ve30lopgl8bt9d0e8ca78q355vr7beef@4ax.com>
Source record: 28428
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 21 Feb 2004 12:28:13 +0000, Paul Burridge <pb@osiris1.notthisbit.co.uk>
wrote:

>
>Anyone care to nominate an RF mixer chip for <100Mhz that's readily
>available in the UK?

give 'em a call for free samples...

EUROPE
Hittite Microwave Europe Ltd
Sales and Applications
4.1 Intec Wade Road,
Basingstoke Hampshire,
RG24 8NE,
United Kingdom

E-Mail: europe@hittite.com
Phone: +44 1-256-817-000
Fax: +44 1-256-817-111

[]

Remove "HeadFromButt", before replying by email.

1442. Storbe light when phone rings

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 17:34:34 UTC
From: Keith <salmo@nf.sympatico.ca>
Message-ID: <KEMZb.101943$IF6.2999441@ursa-nb00s0.nbnet.nb.ca>
Source record: 28429

Does anyone have a schematic for once of those strobe circuits that will flash when the phone rings. I want to make one for my workshop where it's very noisy at times and I don't hear the phone.

Thanks

Keith

1443. Re: Storbe light when phone rings

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 17:52:50 UTC
From: k9sqg@aol.com
Message-ID: <20040221125250.06623.00000123@mb-m05.aol.com>
Source record: 28430

Keith,

I have a commercial (AT&T?) device in a sealed package that turns an outlet/lamp on when the phone rings. Don't believe it has a schematic though.

Evan

1444. Re: Storbe light when phone rings

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 18:04:26 UTC
From: Al <no.spam@here.com>
Message-ID: <no.spam-86D279.13042721022004@news.verizon.net>
Source record: 28431

In article <KEMZb.101943$IF6.2999441@ursa-nb00s0.nbnet.nb.ca>,
"Keith" <salmo@nf.sympatico.ca> wrote:

> Does anyone have a schematic for once of those strobe circuits that will
> flash when the phone rings. I want to make one for my workshop where it's
> very noisy at times and I don't hear the phone.
>

Buy one at Radio Shack for about $10. I got one for my very hard of
hearing M-I-L who really loved it. I rigged a light next to her TV. When
it flashed, she answered the phone. Her hearing aid was designed to
receive signals from an inductive ear piece in the phone.

Al

--
There's never enough time to do it right the first time.....

1445. Re: Storbe light when phone rings

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 18:09:27 UTC
From: Keith <salmo@nf.sympatico.ca>
Message-ID: <r9NZb.101953$IF6.3000565@ursa-nb00s0.nbnet.nb.ca>
Source record: 28432

Radio Shack here in Canada is charging almost 50 bucks for it!!!!!

de Keith VO1AE

1446. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 18:22:44 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <4037a1f4$0$40$cc9e4d1f@news.dial.pipex.com>
Source record: 28433
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge wrote:
> Anyone care to nominate an RF mixer chip for <100Mhz that's readily
> available in the UK?

What sort of performance is required? Diode mixers are easy to obtain
and have good IMD characteristics. The impedances on the ports need to
be properly matched.

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

1447. Want to buy - 20 feet of #12 or #10 Teflon coated wire.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 18:31:08 UTC
From: "T.E.O" <rfmscpa@earthlink.net>
Message-ID: <MtNZb.3650$aT1.1276@newsread1.news.pas.earthlink.net>
Source record: 28434

Want to buy - 20 feet of #12 or #10 Teflon coated wire.

For big link coupled tuner.

Pse e-mail replies

Tnx

1448. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 19:22:15 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <dfaf30lvt87qnc6fh7odvon0gf6jm7gd5j@4ax.com>
Source record: 28435
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 21 Feb 2004 18:22:44 +0000, Leon Heller <aqzf13@dsl.pipex.com>
wrote:

>
>
>Paul Burridge wrote:
>> Anyone care to nominate an RF mixer chip for <100Mhz that's readily
>> available in the UK?
>
>What sort of performance is required?

"Good." :-)

>Diode mixers are easy to obtain
>and have good IMD characteristics. The impedances on the ports need to
>be properly matched.

What - the sort of crossed diode config one often sees in the ham
design books? Do you think I might as well just make one up from
discretes? I'm basically just trying to combine 60Mhz with 20Mhz to
end up with the difference frequency in this case. JJ suggested a
chip, but looking at the data sheet, it seemed to be designed more as
a modulator than a mixer. Let's not get into an argument over
semantics but y'all know what I mean, I'm sure.

BTW, thanks for a good steer with the Pulsonix suggestion, Leon. I'm
making good progress getting to grips with it.
--

The BBC: Licensed at public expense to spread lies.

1449. Re: looking for rf design book

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 19:38:54 UTC
From: Greysky <greyskynospam@sbcglobal.net>
Message-ID: <itOZb.15793$N55.6557@newssvr29.news.prodigy.com>
Source record: 28436

"gobo" <gobo20@lycos.com> wrote in message
news:f6a54aa0.0402202320.5bd55668@posting.google.com...
> Does anyone have any book recommendations of a "cookbook" for RF
> design? Cookbook might not be the best word. Something that covers
> network design, S-parameters, filters, Smith charts, etc. Something
> without the calculus! I had all this in school (oof, 25 years ago)
> and didn't retain it because I've not used it. Now I have an amateur
> license and want to just play with vhf and uhf circuits. I want to do
> things right, but don't want to have to go back and audit three
> calculus courses to remember how to do LaPlace transforms. (Yeah,
> someone's going to say "you gotta" and I know that, but I want to play
> with the electronics and not spend months on the math.)
>
> Thanks.

Sounds like "Experimental Methods in RF Design", published by the ARRL is
what you are looking for. Its a pretty useful book, without going much over
algebra (but is useful even if you don't want to use much math).

1450. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 19:47:23 UTC
From: averyfineman@aol.com
Message-ID: <20040221144723.07155.00000858@mb-m06.aol.com>
Source record: 28437

In article <h4je30p8prnjpnqmfo6ngph9h24niviaqk@4ax.com>, Paul Burridge
<pb@osiris1.notthisbit.co.uk> writes:

>On 20 Feb 2004 21:53:26 GMT, averyfineman@aol.com (Avery Fineman)
>wrote:
>
>> A diode doubler using a toroid transformer, pair of diodes and a tuned
>> circuit in the output works fine right off the paper pad and slide-rule
(or
>> calculator) numbers. Typically the source is a distorted sinewave
>
>Is the type of distortion critical? How about a clipped/clamped
>sinewave?

Yes and no. :-) A quantitative answer isn't possible since the
waveform must be described accurately in shape (or spectrum
analyzed) in order to determine the harmonic content. Suffice to say
that a square wave cannot be used with a passive diode doubler; all
the energy is contained in the short transition times and that is rarely
enough to be worth it.

If an untuned oscillator output is to be doubled, that scoped waveform
will quite probably look distorted. Such is quite likely to be a good
harmonic content source for a passive diode doubler. The obvious
alternate is to tune the oscillator output to the second (or third)
harmonic right off... :-) I mentioned diode doublers because (1) they
are passive; (2) they are relatively broadband; (3) common legacy
fast diodes such as 1N914 and 1N4148 can work in that application
beyond 20 MHz; (4) they work with cylindrical-shape coils also but
toroidals forms make the whole circuit physically smaller.

If the source's impedance is too high to handle a passive diode
multiplier, then an active-device multiplier is a better choice. [at this
point it is a promotional insert time to publicize ARRL publications
of "tried and proven circuits" provided one copies ALL the parts of the
circuit exactly as shown to be tried and proven...:-)]

The original thread question was general enough that the number of
variables would fill a shopping cart. Quantitative answers to such
questions aren't possible. At best, only suggestions of a general
nature can be the answers.

Digital logic off-the-shelf is excellent for making things right off the
paper design because they work with two stable states with very high
transition times; stay within the rise, fall, and propagation times and
fan-out rules and it should work right off the scratchpad. Analog

circuits are a whole new game with different rules and a large number of unknowns even if some detailed specs are available.

For one-of-a-kind homebrew applications of analog multipliers, I'd say it was time for experimental bench cut-and-try work first. A paper analysis is going to take TIME even if the smarts are there. Empirical data derivation (cut-and-try) is quick, much quicker than the paper chase. I say empirical since the supply voltages may be different than some book example, few have instruments for measuring source and load impedances or spectral content and power level of the source.

The simpler the prototype-idea circuit, the easier it is to make a stock kind of circuit on the bench and probably characterize it over a wide frequency range and, possibly, with varying supply rail voltages and power levels. Heh...a LOT of production circuits were engineered that way even though the companies who made it came along after and made them look like seven wonders of the world in PR literature later. They were after _reproducible_ circuits in _their_ systems, not as shining textbook examples. Some passive component values may have been selected to reduce the overall type-of-parts count by using "common" values needed in other circuits. That's perfectly acceptible as long as a circuit works and can be reproduced...at a profit. :-)

Can I answer your original question? Not really. Think of a passive diode doubler as a full-wave rectifier. Those take a fundamental sine and "double it over" (negative swing made positive through trans-former) to make two half-sine pulses of the same polarity for each full AC cycle. There's a lot of "second harmonic" in that rectifier output...which makes for easier filtering since the ripple voltage frequency is twice what it would be for a half-wave rectifier. Using fast legacy diodes at a much higher frequency turns out to be the same sort of thing. Unlike a rectifier circuit, the output of the doubler can be tuned to that second harmonic (a no-no for most power supply rectifiers) to get the most output. You could use a clipped sinewave input, but why and where is the clipping done and what extra circuits or components are needed to justify that?

I've only outlined SOME of the mental questions each brewer has to make for themselves. Concentration is needed for application.

Len Anderson
retired (from regular hours) electronic engineer person

1451. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 20:50:27 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <8xPZb.551$396.61@newsfe3-win.server.ntli.net>
Source record: 28438
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

> Anyone care to nominate an RF mixer chip for <100Mhz that's readily
> available in the UK?
==========
SA602AN as well as SA612AN each costing GBP 2.50
Both have on-board LO circuit.
www.modecomponents.co.uk ,probably also from www.jabdog.com
Both companies are in the Birmingham area.
If you are a member of G-QRP Club the SA602AN is somewhat cheaper from Club
Sales.

Frank GM0CSZ / KN6WH

1452. Re: Storbe light when phone rings

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 20:57:00 UTC
From: Gavin Jacobs <notasnoball@inhell.com>
Message-ID: <wCPZb.33161$n17.28994@clgrps13>
Source record: 28439

If you really want to build something (why not? this is a HomeBrew newsgroup!) there are several choices here:
http://www.ee.washington.edu/circuit_archive/circuits/F_ASCII_Schem_Tel.html

Gavin

"Keith" <salmo@nf.sympatico.ca> wrote in message
news:KEMZb.101943$IF6.2999441@ursa-nb00s0.nbnet.nb.ca...
> Does anyone have a schematic for once of those strobe circuits that will
> flash when the phone rings. I want to make one for my workshop where it's
> very noisy at times and I don't hear the phone.
>
> Thanks
>
> Keith
>

1453. Re: looking for rf design book

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 21:03:42 UTC
From: gobo20@lycos.com
Message-ID: <f6a54aa0.0402211303.2bc7f6a9@posting.google.com>
Source record: 28440

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:<nS4ZXPEoZyNAFAm1@ifwtech.co.uk>...

> Good news: to "do things right", you don't actually "needta" revisit
> those courses. Their uses in RF design would be far too specialized for
> what you need right now.
<<snip>>
>
> Although not an RF design text, 'The Art of Electronics' by Horowitz and
> Hill is an excellent example to how to use math when you need it, while
> always avoiding unnecessary 'math for math's sake'.
>
I wholeheartedly agree about Horowitz and Hill, mine is never very far
away. In teaching basic circuits to coworkers (I'm in data processing
now) I tell them that if they must get only one book ï¿½ that's the one.
I wish the guys would do a third edition.

> Some areas do require math because they're fundamentally math-driven,
> for example complex modulation and DSP techniques - but even there you
> can understand a lot from an *appreciation* of the math (by which I mean
> the ability to understand where it's going, as distinct from the ability
> to do it yourself).
>
Yes, but when you read some of the high-brow white papers written by
folks a HP or Motorola, those guys only language is calculus! I read
through the stuff and know I'm missing part of the picture and that's
frustrating for me.

> The huge advantage of being an amateur is that you don't need to go into
> areas that require knowledge you don't possess. The *other* huge
> advantage of being an amateur is that, if you decide that's where you
> want to go, then nothing is off-limits!
>
That's true. And with some time I'll pick it up again along the road.

> RF design, now... to get yourself started, try Bowick (sorry, I can't
> remember the exact title, but the name will find it) and also Hayward's
> 'Introduction to RF Design' (now published by ARRL).
>
> The other growing-point in RF design is the use of computer-aided design
> and analysis. Gradually, radio amateurs are moving towards this
> approach, where you spend quite a lot of time designing, but don't
> switch the soldering iron on until quite late in the process. Seek out
> books that use this approach (but avoid books that are too closely tied
> to any specific brand of software). There are lots of free 'student

> version' software downloads on the web, but that's a separate large
> topic.
>
> Finally, pick up an old copy of Terman's 'Radio Engineering', to keep
> yourself in touch with the days when it all had to be done using algebra
> on the bare metal. That demanded a very fundamental level of
> understanding, which is in danger of becoming lost.

I will look for the titles.
thanks,
gobo

1454. Sky-wave Trigonometry - New program

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 21:27:39 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c18igb$gm1$1@hercules.btinternet.com>
Source record: 28441

For given ground path distance and height of reflecting layer this program
calculates elevation angle, angle of incidence with the layer and the
radio-path distances for one and two hops.

The program then gives an insight into how the various losses are
proportioned along the radio path. A 100-watt transmitter is used at one
end of the path with a receiver + S-meter at the other.

Download in a few seconds program TWOHOPS from website below and run
immdediately.

....
Regards from Reg, G4FGQ
For Free Radio Design Software go to
http://www.btinternet.com/~g4fgq.regp
....

1455. Re: Storbe light when phone rings

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 21:58:26 UTC
From: "Joe Bramblett, KD5NRH" <kd5nrh@yahoo.com>
Message-ID: <btQ3QMNpZupAsvKiLKxKk3wtgn7S@4ax.com>
Source record: 28442

On Sat, 21 Feb 2004 18:09:27 GMT, "Keith" <salmo@nf.sympatico.ca>
wrote:

>Radio Shack here in Canada is charging almost 50 bucks for it!!!!!

That's what, $3.95US?

Joe Bramblett, KD5NRH
kd5nrh@myway.com

1456. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 22:32:56 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <103fn4e8shgjedf@corp.supernews.com>
Source record: 28443
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

The Philips SA602 or SA612 ought to be available in the UK. Don't overload the RF port though, the gain folds back over 200mV RF input -- confuses the hell out of an AGC loop.

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message news:79je305q3vgfg1eklubha2u9ecsap68pa1@4ax.com...
>
> Anyone care to nominate an RF mixer chip for <100Mhz that's readily
> available in the UK?
> --
>
> The BBC: Licensed at public expense to spread lies.

1457. Re: HELP with finding ARRL Handbook Filter circuit please

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 22:34:47 UTC
From: me <null@null.net>
Message-ID: <b2RZb.12989$PY.3391@newssvr26.news.prodigy.com>
Source record: 28444

The 1967 ARRL handbook has one on page 148. It uses a 12AU7 and two 88 mH
toroids. Might that be what you were thinking of?
Bill N9BT

"Ron" <nospam_ronayling@hotmail.com> wrote in message
news:403332e8.1997173@news.freeserve.co.uk...
> Hi, I'm building a small valve communication receiver in an
> effort to recapture some of the fun of my youth :)))
> And I am trying to find a circuit of a simple valve CW Audio filter
> Years ago I built one from a circuit that was in the ARRL handbook
> about 60's vintage, that was superb, anyone got an old Handbook
> of that vintage that could have a look and possibly scan the
> info, or possibly have a good one of their own using standard
> valve componants!! long shot I know :))
> Thanks from Ron G3YUH ronayling@hotmail.com
>
>

1458. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-21 23:03:48 UTC
From: Jan Panteltje <pNaonStpealmtje@yahoo.com>
Message-ID: <1077404619.270948@news-01.evisp.enertel.nl>
Source record: 28445
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On a sunny day (Sat, 21 Feb 2004 19:22:15 +0000) it happened Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote in
<dfaf30lvt87qnc6fh7odvon0gf6jm7gd5j@4ax.com>:

>On Sat, 21 Feb 2004 18:22:44 +0000, Leon Heller <aqzf13@dsl.pipex.com>
>wrote:
>
>>
>>
>>Paul Burridge wrote:
>>> Anyone care to nominate an RF mixer chip for <100Mhz that's readily
>>> available in the UK?
>>
>>What sort of performance is required?
>
>"Good." :-)
>
>>Diode mixers are easy to obtain
>>and have good IMD characteristics. The impedances on the ports need to
>>be properly matched.
>
>What - the sort of crossed diode config one often sees in the ham
>design books? Do you think I might as well just make one up from
>discretes? I'm basically just trying to combine 60Mhz with 20Mhz to
>end up with the difference frequency in this case. JJ suggested a
>chip, but looking at the data sheet, it seemed to be designed more as
>a modulator than a mixer. Let's not get into an argument over
>semantics but y'all know what I mean, I'm sure.
>
>BTW, thanks for a good steer with the Pulsonix suggestion, Leon. I'm
>making good progress getting to grips with it.
I do this with a dual gate MOSFET, osc on second gate, signal on first.
A voltage divider on gate 2 to set it in teh non-linear part.
This works very well, is not critical, very cheap and extremely reliable.
Also the noise figure is good.
So tuned 40MHz in drain
I did one some weeks agao, but cant remember what that was for?
Anyway that sceme works up to a GHz , from kHz up.
If you need diagram and part example I could draw up one here.
Copyright Jan Panteltje 2004 All Right Reserved
By reading this you agree to pay me 1 fc.

1459. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 00:34:24 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <otsf305ontq90v02ssrnrtbnfsggkguvvh@4ax.com>
Source record: 28446

On 21 Feb 2004 19:47:23 GMT, averyfineman@aol.com (Avery Fineman)
wrote:

>In article <h4je30p8prnjpnqmfo6ngph9h24niviaqk@4ax.com>, Paul Burridge
><pb@osiris1.notthisbit.co.uk> writes:
>
>>On 20 Feb 2004 21:53:26 GMT, averyfineman@aol.com (Avery Fineman)
>>wrote:
>>
>>> A diode doubler using a toroid transformer, pair of diodes and a tuned
>>> circuit in the output works fine right off the paper pad and slide-rule
>(or
>>> calculator) numbers. Typically the source is a distorted sinewave
>>
>>Is the type of distortion critical? How about a clipped/clamped
>>sinewave?
>
> Yes and no. :-) A quantitative answer isn't possible since the
> waveform must be described accurately in shape (or spectrum
> analyzed) in order to determine the harmonic content. Suffice to say
> that a square wave cannot be used with a passive diode doubler; all
> the energy is contained in the short transition times and that is rarely
> enough to be worth it.

[snip...]

Thanks, Len. A lot of good stuff to be considered here so I'll save it
for now and go through it later.....

p.
--

The BBC: Licensed at public expense to spread lies.

1460. Re: Avantek YIG osc data?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 02:16:38 UTC
From: hexter@blazenet.net
Message-ID: <103g486mgob4402@corp.supernews.com>
Source record: 28297

In article <3200347.0402201621.a234912@posting.google.com>, k7itm@aol.com says...
>
>Hi all,
>
>An Avantek AV-7036 YIG oscillator has just fallen out of the sky and
>landed in my vicinity. Anyone happen to have specs on it? Like, what
>power does it take, and what drive to the tune and FM ports?
>
>Cheers,
>Tom

Hey Tom, There was a question exactly the same as yours within the last 6 mnths to perhaps 1 year ago. I do remember that the thing won't even oscillate at all with out one of the currents present (Tune/FM), It is a coil, and needed about 10 mils I think, plus the normal B+/GND voltages.

1461. FA:25K 200W BLEEDERS + Other stuff

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 02:32:55 UTC
From: Heytubeguy <heytubeguy@worldnet.att.net>
Message-ID: <rxUZb.67156$hR.1420961@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28298

See at
http://cgi6.ebay.com/ws/eBayISAPI.dll?ViewSellersOtherItems&userid=heytubeguy&completed=0&sort=3&since=-1&include=0&page=1&rows=25

Joe

1462. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 03:39:24 UTC
From: k7itm@aol.com
Message-ID: <3200347.0402211939.5e87da08@posting.google.com>
Source record: 28299

averyfineman@aol.com (Avery Fineman) wrote in message
news:<20040221144723.07155.00000858@mb-m06.aol.com>...
> ... Suffice to say
> that a square wave cannot be used with a passive diode doubler; all
> the energy is contained in the short transition times and that is rarely
> enough to be worth it.

?? Lots of energy in the fundamental; filter to extract the
fundamental and feed it to your full-wave rectifier doubler.
Efficiency can be high if the filter does not cause dissipation in the
source at the harmonics.

1463. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 03:58:50 UTC
From: "Jim L." <jfladd@flash.net>
Message-ID: <_NVZb.43973$sh3.10559@newssvr33.news.prodigy.com>
Source record: 28300
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

Greetings- I have one in a high level transmitting mixer I built in about 1960. The mixer took about ten watts in on 14 mhz from my HT-32B, mixed it with the output of a crystal oscillator, drove the grids of the 829B ,and the output was 144 mhz ssb, enough to drive a 4X-150A amp. The circuit was designed by Don Stoner, W6TNS, and published in CQ mag., as I recall. The tube was used in VHF military gear . It has a little brother, the 832A.
Jim, K8JL .
Dave <Devarim@hotmail.com> wrote in
message news:c88722f99e070f0dd405ad9e6fc50f36@news.meganetnews.com...
> Hi all,
>
> I just found several 829B tubes - believe it or not in my garage - I
> must have got them in a box of stuff at a ham fest at one time.
> A check on Ebay shows they're pretty much worthless for the sake
> of dollars, but they're so COOL! With the two plate caps that are
> actually just stiff pins, they look like little Martians.
>
> I put a pair on my office credenza just to look geeky cool. Fresh
> out of the box as NOS they look amazing - just like they were made
> yesterday. It's a pity they have no value - maybe as a homebrew
> project??
>
> So can someone tell me what they would have been used for?
> Something tells me they're a VHF power tube.
>
> Any application as a one-tube QRP rig of any sort? Any stories
> about using them in the past? I've built a lot of little rigs over the
> years, but never knew about the 829
>
> Thanks,
>
> Dave
>
>

1464. Power Inductor Optimization...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 05:11:22 UTC
From: nospam@nowhere.nil
Message-ID: <hobg30hjjt4rr4c29b251ittavjgpus4rj@4ax.com>
Source record: 28301

This is not directly HAM releated,
but Ham radio is used in the project.

I'm building a Solar powered RC plane.

In that plane I have 6 different solar cell planes.
For each plane I'm building a maximum power point tracker.
The heavest component of the MPP is the inductor.

I need the lighetest most efficient inductor possible.

Specifications

30uH min, 50uH prefered.
6 amps DC current max.
7 amps peak current max.
50 to 150Khz switching freq.

(The current ripple has to be low in releation to the DC current to
keep the solar cell in the "Sweet" spot.

Inductor can not be bigger than 100mm in diameter and 25 mm thick.

I'm thinking I want a Aluminium wire air core toriod, but I'm not
sure.

The weight trade off:

At the point of marginal flight. (About 3 amps in the inductor)
Weight is at an absolute premium. I can trade one watt of inductor
loss (at 3 amps) for 190 gm of mass.

Assuming 12 Ga wire in a cylindrical core 4" in diameter:
12 Ga two layers of 10 turns each gives about 45uH.
251 inches of wire for a wt of: 57gm
and a DC loss of: 1/2 W at 3 A and 2 W at 6 A

I'm a bit lost here .... any suggestions on how to proceede?
Should I consider using a toroid core?
Adds weight, and switching losses, but reduces the total feet of wire
and thus the weight.

It would be a lot easier of solar cells were not low voltage high
current devices... alas they are.

Paul (Kl7JG/6)

1465. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 05:14:43 UTC
From: Jim Pennell <Nospam@killspam.com>
Message-ID: <7VWZb.4464$aT1.3086@newsread1.news.pas.earthlink.net>
Source record: 28302

"Tom Bruhns" <k7itm@aol.com> Wrote:

> averyfineman@aol.com (Avery Fineman) wrote in message
news:<20040221144723.07155.00000858@mb-m06.aol.com>...
> >
> > ... Suffice to say
> > that a square wave cannot be used with a passive
> > diode doubler; all the energy is contained in
> > the short transition times and that is rarely
> > enough to be worth it.
>
> ?? Lots of energy in the fundamental; filter to
> extract the fundamental and feed it to your
> full-wave rectifier doubler.
> Efficiency can be high if the filter does
> not cause dissipation in the
> source at the harmonics.

Tom, look at it this way... Draw the square wave, assuming capacitive coupling so it has a zero crossing. Then draw the same signal but invert the negative going half to positive, which is what the full wave diode doubler would do.

You wind up with a positive voltage, but with VERY narrow negative spikes.

So, a square wave into a diode doubler will produce only a small amount of the second harmonic. You'd be better off running the input square wave through a lowpass of some sort and then doubling it.

Given a sine wave input, there is a fair amount of negative going signal and that is what produces the high energy content of the second harmonic.

Jim Pennell
N6BIU

1466. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 06:41:10 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <40384f07$0$6840$cc9e4d1f@news.dial.pipex.com>
Source record: 28303
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge wrote:
> On Sat, 21 Feb 2004 18:22:44 +0000, Leon Heller <aqzf13@dsl.pipex.com>
> wrote:
>
>
>>
>>Paul Burridge wrote:
>>
>>>Anyone care to nominate an RF mixer chip for <100Mhz that's readily
>>>available in the UK?
>>
>>What sort of performance is required?
>
>
> "Good." :-)
>
>
>>Diode mixers are easy to obtain
>>and have good IMD characteristics. The impedances on the ports need to
>>be properly matched.
>
>
> What - the sort of crossed diode config one often sees in the ham
> design books? Do you think I might as well just make one up from
> discretes? I'm basically just trying to combine 60Mhz with 20Mhz to
> end up with the difference frequency in this case. JJ suggested a
> chip, but looking at the data sheet, it seemed to be designed more as
> a modulator than a mixer. Let's not get into an argument over
> semantics but y'all know what I mean, I'm sure.

You could make your own, but an MCL TUF-1 or SBL-1 won't be all that
expensive. They do need a 7 dBm local oscillator drive level.

>
> BTW, thanks for a good steer with the Pulsonix suggestion, Leon. I'm
> making good progress getting to grips with it.

You could join the Pulsonix UG:

http://groups.yahoo.com/group/PulsonixUG/

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com

My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

1467. Re: Power Inductor Optimization...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 07:41:10 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <40385D16.7CE3C8FF@rica.net>
Source record: 28304

nospam@nowhere.nil wrote:
>
> This is not directly HAM releated,
> but Ham radio is used in the project.
>
> I'm building a Solar powered RC plane.
>
> In that plane I have 6 different solar cell planes.
> For each plane I'm building a maximum power point tracker.
> The heavest component of the MPP is the inductor.
>
> I need the lighetest most efficient inductor possible.
>
> Specifications
>
> 30uH min, 50uH prefered.
> 6 amps DC current max.
> 7 amps peak current max.
> 50 to 150Khz switching freq.
>
> (The current ripple has to be low in releation to the DC current to
> keep the solar cell in the "Sweet" spot.
>
> Inductor can not be bigger than 100mm in diameter and 25 mm thick.
>
> I'm thinking I want a Aluminium wire air core toriod, but I'm not
> sure.
>
> The weight trade off:
>
> At the point of marginal flight. (About 3 amps in the inductor)
> Weight is at an absolute premium. I can trade one watt of inductor
> loss (at 3 amps) for 190 gm of mass.
>
> Assuming 12 Ga wire in a cylindrical core 4" in diameter:
> 12 Ga two layers of 10 turns each gives about 45uH.
> 251 inches of wire for a wt of: 57gm
> and a DC loss of: 1/2 W at 3 A and 2 W at 6 A
>
> I'm a bit lost here .... any suggestions on how to proceede?
> Should I consider using a toroid core?
> Adds weight, and switching losses, but reduces the total feet of wire
> and thus the weight.
>

> It would be a lot easier of solar cells were not low voltage high
> current devices... alas they are.
>
> Paul (Kl7JG/6)

A powdered iron toroid inductor may be close to optimum from a weight standpoint. Check out these part numbers from Digikey:
125 uHy @ 7.77 ADC, .032 ohms, 46 mm dia, 19 mm high, M5716 (the data sheet may have the weight)
34 uh @ 6.4 ADC, .026 ohms, 22 mm dia, 14 mm high, M9797
63 uHy @ 7 ADC, .037 ohms, 29 mm dia, 17 mm high, M9823

--
John Popelish

1468. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 10:21:40 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <10pf3051dmlb6hhumgjpdja984t162tgv5@4ax.com>
Source record: 28305

On Sat, 21 Feb 2004 12:28:11 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>On Sat, 21 Feb 2004 03:20:07 -0800, Roy Lewallen <w7el@eznec.com>
>wrote:
>
>>Tom Bruhns wrote:
>>> . . .
>>> . . . Seems like step
>>> recovery diodes are not in as great favor as they once were, since
>>> there are generally better ways to generate higher order harmonics.
>>> . . .
>>
>>Getting a bit off-topic here, but as of a few years ago, we were using
>>step recovery diodes to generate the step in high speed TDR systems, and
>>to generate the strobe for the sampling gate in high speed sampling
>>scopes. Rise times were on the order of 7 - 15 ps (bandwidth up to 50
>>GHz or so), limited primarily by circuitry external to the diodes. SRDs
>>replaced tunnel diodes in earlier generations of instruments. I've been
>>out of touch with that class of instruments for a few years now -- do
>>you know if something has replaced the SRD for generating fast steps, or
>>just for harmonic generation?
>
>What's a doubler based on the good old 1N4148 good for, top end
>frequency-wise?

made some experiments 10-15 years ago with doublers to 144Mc/s, and
they probably would work on at least 200Mc. Best experience with a
BFR90 amplifier following the 'rectifier', see
http://home.online.no/~la8ak/c13.htm
It was important with certain dc load following the diodes and some
bias current

Another interesting multiplier used for 100kc calibrator - on vhf -
described in UKW Berichte uses quad nand schmidt trigger, where the
input signal is splitted - one part to a nand input and the other to
3x nand gates connected as inverters and connected to the second input
of the nand-gate such that the truth table said constant logic high
output, but a very thin spike occured because of the transition time
delay

73
JM

Jan-Martin, LA8AK, N-4623 Kristiansand

http://home.online.no/~la8ak/

1469. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 10:21:41 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <mopf309e922st4vejdn1978knijccen0p0@4ax.com>
Source record: 28306
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 21 Feb 2004 12:28:13 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>
>Anyone care to nominate an RF mixer chip for <100Mhz that's readily
>available in the UK?

Since you don't specify anything important like IP3, my recommendation
is Siemens S042P. Earlier, when Motorola was easy to buy from, I would
have used MC1496P, but none of them have high IP3 and I suppose NE602
isn't any better. If balance isn't important, I would use BF905 or
BF199

73, LA8AK
http://home.online.no/~la8ak/

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

1470. TS-118A/AP, RF Wattmeter/Dummy load

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 13:35:55 UTC
From: "owen.home" <owen.home@ntlworld.com>
Message-ID: <Ee2_b.18085$ft.16663@newsfe1-win>
Source record: 28307

Hello
I recently went to buy an RF sweep generator and ended up bringing home a TS-118A/AP (Bird) RF wattmeter, as one does! I have some questions:-
1. Given that the RF power sensors for the various bands/power ratings are added external to the meter with only the coax connecting through to the unit,how does it work? I assume the sensors are thermocouple types but there's no separate DC circuit and I can only see a narrow constriction in the sensor with the centre core being a very fine wire.
2. I'm missing the calibration/multiplication factor graph for the MX-1784/U sensor, would anyone have one they'd be prepared to scan and email for me? Any pointers to a full manual on the net would be good also.
3. Although the unit is marked 20-1400MHz at 500W, the MX-1783/U graph shows power levels up to 1200W at 40MHz, I guess the unit is very conservatively rated but does anyone have true figures (not that I intend to work at that sort of power levels).
4. Is it OK to use as a straight dummy load without the sensor, I've tested it at 2m and it seems fine but why the 20MHz lower limit? also it doesn't measure 50 ohms at DC so I guess it can't be a straight resistor so what's the load?

I'd appreciate all and any information you can give about the wattmeter, it's not something I'd have planned on buying but it looks like it'll serve all the needs I'd ever have for a high power dummy load/wattmeter other than for the lower HF bands.
Thanks in advance
John

1471. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 14:19:47 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <gnch30hfprt6k0qdphaageo9hk5hnuj3km@4ax.com>
Source record: 28308
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 22 Feb 2004 06:41:10 +0000, Leon Heller <aqzf13@dsl.pipex.com>
wrote:

>You could make your own, but an MCL TUF-1 or SBL-1 won't be all that
>expensive. They do need a 7 dBm local oscillator drive level.

Thanks. I'll check 'em out.

>You could join the Pulsonix UG:
>
>http://groups.yahoo.com/group/PulsonixUG/

Will do. There are a couple of minor queries that have arisen.
--

The BBC: Licensed at public expense to spread lies.

1472. Re: TS-118A/AP, RF Wattmeter/Dummy load

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 15:11:34 UTC
From: Gene Tomlinson <genet@flash.net>
Message-ID: <c5gh309bm1a1oiht283jt389fb2slpbqj0@4ax.com>
Source record: 28309

On Sun, 22 Feb 2004 13:35:55 -0000, "owen.home"
<owen.home@ntlworld.com> wrote:
I have two of these units both measure 50 ohms.
Also found the manual for it. It will be a while before I could copy
it for you.

>Hello
>I recently went to buy an RF sweep generator and ended up bringing home a
>TS-118A/AP (Bird) RF wattmeter, as one does! I have some questions:-
>1. Given that the RF power sensors for the various bands/power ratings are
>added external to the meter with only the coax connecting through to the
>unit,how does it work? I assume the sensors are thermocouple types but
>there's no separate DC circuit and I can only see a narrow constriction in
>the sensor with the centre core being a very fine wire.
>2. I'm missing the calibration/multiplication factor graph for the MX-1784/U
>sensor, would anyone have one they'd be prepared to scan and email for me?
>Any pointers to a full manual on the net would be good also.

The MX-1784 is a tuning shunt used for safety reasons
on transmitters with capacitively coupled outputs.
>3. Although the unit is marked 20-1400MHz at 500W, the MX-1783/U graph shows
>power levels up to 1200W at 40MHz, I guess the unit is very conservatively
>rated but does anyone have true figures (not that I intend to work at that
>sort of power levels).
The manual speced power levels are.

Range 20- 1400mhz
power 20-100mhz 2-300watts
100-300mhz 2-500watts
300-750mhz 2-125watts
750-1400mhz 2-125 watts
>4. Is it OK to use as a straight dummy load without the sensor, I've tested
>it at 2m and it seems fine but why the 20MHz lower limit? also it doesn't
>measure 50 ohms at DC so I guess it can't be a straight resistor so what's
>the load?
The lower 20 mhz limit is to prevent damage to the metering circuits.
It can be used to DC if you disconnect the metering circuit.
I learned the hard way!!!!!

It is a straight 50 ohm resistor in the oil. If you measure anything
much differnet the resistor is defective.
>
>I'd appreciate all and any information you can give about the wattmeter,
>it's not something I'd have planned on buying but it looks like it'll serve
>all the needs I'd ever have for a high power dummy load/wattmeter other than

>for the lower HF bands.
>Thanks in advance
>John
>
>

1473. Looking for source for surplus teflon hookup wire.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 15:16:51 UTC
From: James W <change-to-jw22-at-trlp-dot-com@trlp.com>
Message-ID: <103hhv3r58ke8d2@corp.supernews.com>
Source record: 28310

Anyone know of a source for teflon hookup wire? 26 and 30 gauge. Small quantities.

thanks
- jim

1474. Re: Storbe light when phone rings

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 16:00:50 UTC
From: Keith <salmo@nf.sympatico.ca>
Message-ID: <Sm4_b.102350$IF6.3024325@ursa-nb00s0.nbnet.nb.ca>
Source record: 28311

$3.95 US...You wish!! :O)

1475. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 18:09:03 UTC
From: SWbeginner <SWbeginner@nowhere.com>
Message-ID: <103hs1vjlvrebc0@corp.supernews.com>
Source record: 28312
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Do the dual gate mosfets outperform the NE602 with regards to IP3?

For some reason the NE602 refuses to oscillate with crystals but LC's are OK.

> Since you don't specify anything important like IP3, my recommendation
> is Siemens S042P. Earlier, when Motorola was easy to buy from, I would
> have used MC1496P, but none of them have high IP3 and I suppose NE602
> isn't any better. If balance isn't important, I would use BF905 or
> BF199
>
> 73, LA8AK
> http://home.online.no/~la8ak/
> ----
> Jan-Martin, LA8AK, N-4623 Kristiansand
> http://home.online.no/~la8ak/

1476. Re: TS-118A/AP, RF Wattmeter/Dummy load

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 18:24:46 UTC
From: "owen.home" <owen.home@ntlworld.com>
Message-ID: <Du6_b.101$U27.8@newsfe1-win>
Source record: 28313

Gene
Many thanks for the reply, I understand now - the meter is across the line
but isolated at RF with an inductor so that at DC I'm seeing the meter and
load in parallel, mine measures fine with the meter disconnected.
Thanks for the warning about damaging the meter below 20MHz and the info on
the MX-1784/U, I opened it up and can see the inductor to ground.
I'd still like to know how the sensors are made up though and I would
appreciate a copy of the manual sometime if you get a chance, I'm missing
one of the sensors - are they easily available these days?
Thanks again
John

"Gene Tomlinson" <genet@flash.net> wrote in message
news:c5gh309bm1a1oiht283jt389fb2slpbqj0@4ax.com...
> On Sun, 22 Feb 2004 13:35:55 -0000, "owen.home"
> <owen.home@ntlworld.com> wrote:
> I have two of these units both measure 50 ohms.
> Also found the manual for it. It will be a while before I could copy
> it for you.
>
> >Hello
> >I recently went to buy an RF sweep generator and ended up bringing home a
> >TS-118A/AP (Bird) RF wattmeter, as one does! I have some questions:-
> >1. Given that the RF power sensors for the various bands/power ratings
are
> >added external to the meter with only the coax connecting through to the
> >unit,how does it work? I assume the sensors are thermocouple types but
> >there's no separate DC circuit and I can only see a narrow constriction
in
> >the sensor with the centre core being a very fine wire.
> >2. I'm missing the calibration/multiplication factor graph for the
MX-1784/U
> >sensor, would anyone have one they'd be prepared to scan and email for
me?
> >Any pointers to a full manual on the net would be good also.
>
> The MX-1784 is a tuning shunt used for safety reasons
> on transmitters with capacitively coupled outputs.
> >3. Although the unit is marked 20-1400MHz at 500W, the MX-1783/U graph
shows
> >power levels up to 1200W at 40MHz, I guess the unit is very
conservatively
> >rated but does anyone have true figures (not that I intend to work at
that

> >sort of power levels).
> The manual speced power levels are.
>
> Range 20- 1400mhz
> power 20-100mhz 2-300watts
> 100-300mhz 2-500watts
> 300-750mhz 2-125watts
> 750-1400mhz 2-125 watts
> >4. Is it OK to use as a straight dummy load without the sensor, I've
tested
> >it at 2m and it seems fine but why the 20MHz lower limit? also it doesn't
> >measure 50 ohms at DC so I guess it can't be a straight resistor so
what's
> >the load?
> The lower 20 mhz limit is to prevent damage to the metering circuits.
> It can be used to DC if you disconnect the metering circuit.
> I learned the hard way!!!!!
>
> It is a straight 50 ohm resistor in the oil. If you measure anything
> much differnet the resistor is defective.
> >
> >I'd appreciate all and any information you can give about the wattmeter,
> >it's not something I'd have planned on buying but it looks like it'll
serve
> >all the needs I'd ever have for a high power dummy load/wattmeter other
than
> >for the lower HF bands.
> >Thanks in advance
> >John
> >
> >
>

1477. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 19:11:58 UTC
From: Jim Thompson <thegreatone@example.com>
Message-ID: <okvh30leud3h1fku8sg9v6f79tjpsvafev@4ax.com>
Source record: 28314
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 22 Feb 2004 18:09:03 -0000, SWbeginner
<SWbeginner@nowhere.com> wrote:

>Do the dual gate mosfets outperform the NE602 with regards to IP3?
>
>For some reason the NE602 refuses to oscillate with crystals but LC's are
>OK.
>
>>
[snip]

The NE602 only supports Colpitts and Butler crystal oscillator
configurations. It is *not* an inverter-style oscillator.

See:

http://www.semiconductors.com/acrobat/applicationnotes/AN1983.pdf

...Jim Thompson
--
James E.Thompson, P.E.	mens
Analog Innovations, Inc.	et
Analog/Mixed-Signal ASIC's and Discrete Systems	manus
Phoenix, Arizona Voice:(480)460-2350	
E-mail Address at Website Fax:(480)460-2142	Brass Rat
http://www.analog-innovations.com	1962

I love to cook with wine. Sometimes I even put it in the food.

1478. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 20:00:37 UTC
From: averyfineman@aol.com
Message-ID: <20040222150037.00545.00004480@mb-m02.aol.com>
Source record: 28315

In article <3200347.0402211939.5e87da08@posting.google.com>, k7itm@aol.com (Tom Bruhns) writes:

>averyfineman@aol.com (Avery Fineman) wrote in message
>news:<20040221144723.07155.00000858@mb-m06.aol.com>...
>> ... Suffice to say
>> that a square wave cannot be used with a passive diode doubler; all
>> the energy is contained in the short transition times and that is rarely
>> enough to be worth it.
>
>?? Lots of energy in the fundamental; filter to extract the
>fundamental and feed it to your full-wave rectifier doubler.
>Efficiency can be high if the filter does not cause dissipation in the
>source at the harmonics.

1479. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 20:39:33 UTC
From: averyfineman@aol.com
Message-ID: <20040222153933.22081.00004204@mb-m17.aol.com>
Source record: 28316

In article <3200347.0402211939.5e87da08@posting.google.com>, k7itm@aol.com (Tom Bruhns) writes:

>averyfineman@aol.com (Avery Fineman) wrote in message
>news:<20040221144723.07155.00000858@mb-m06.aol.com>...
>> ... Suffice to say
>> that a square wave cannot be used with a passive diode doubler; all
>> the energy is contained in the short transition times and that is rarely
>> enough to be worth it.
>
>?? Lots of energy in the fundamental; filter to extract the
>fundamental and feed it to your full-wave rectifier doubler.
>Efficiency can be high if the filter does not cause dissipation in the
>source at the harmonics.

Sorry. If you are using the passive diode doubler looking like a
full-wave rectifier circuit, and you have a symmetric square wave,
the only harmonics you get are from the transition edges.

Symmetric square waves have very low even harmonic energy
content; harmonics are in the odd harmonic frequencies.

A non-symmetric rectangular (not a 'square') waveform has more
even-harmonic energy content.

Len Anderson
retired (from regular hours) electronic engineer person

Apologies tendered for inappropriate, incomplete prior posting. Bell's
machine rang for a talk about another subject thread and I forgot to
complete this one. :-(LHA

1480. Re: Looking for source for surplus teflon hookup wire.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 21:22:21 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <h49_b.50141$Hy3.39022@edtnps89>
Source record: 28317

Behold, James W signalled from keyed 4-1000A filament:

> Anyone know of a source for teflon hookup wire? 26 and 30 gauge. Small
> quantities.
>
> thanks
> - jim

Hi Jim,

Toronto Surplus might have what you need.

http://www.torontosurplus.com

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

1481. e

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 22:52:07 UTC
From: sucker <sucker@mail.subrec.org>
Message-ID: <roa_b.3767$Hg4.772@chiapp18.algx.net>
Source record: 28318

sucker@mail.subrec.org

1482. Re: Looking for source for surplus teflon hookup wire.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 23:10:17 UTC
From: Brian <brianNADA@NOiquestSPAM.net>
Message-ID: <tFa_b.4092$yZ1.1492@newsread2.news.pas.earthlink.net>
Source record: 28319

There was a guy on the QRP-L list offering a great deal on teflon wire, many colors and sizes for cheap. You might go to the archives and see if you can find it.

73

"James W" <change-to-jw22-at-trlp-dot-com@trlp.com> wrote in message news:103hhv3r58ke8d2@corp.supernews.com...
> Anyone know of a source for teflon hookup wire? 26 and 30 gauge. Small
> quantities.
>
> thanks
> - jim
>

1483. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 23:38:36 UTC
From: k7itm@aol.com
Message-ID: <3200347.0402221538.718600aa@posting.google.com>
Source record: 28322

"Jim Pennell" <Nospam@killspam.com> wrote in message
news:<7VWZb.4464$aT1.3086@newsread1.news.pas.earthlink.net>...
> "Tom Bruhns" <k7itm@aol.com> Wrote:
...
> > ?? Lots of energy in the fundamental; filter to
> > extract the fundamental and feed it to your
> > full-wave rectifier doubler.
...
> So, a square wave into a diode doubler will produce only a small amount of
> the second harmonic. You'd be better off running the input square wave
> through a lowpass of some sort and then doubling it.

Right on, Jim. "Filter to extract the fundamental and feed it [the
fundamental] to your full-wave rectifier doubler." Of course, third
harmonic mixed with fundamental gives you second and fourth, etc., so
there's a hint that the harmonics could be useful if the phases were
right. What do you get if you feed a mixer a square wave in one port,
and the same square wave delayed by 1/4 period into the other port?

Cheers,
Tom

1484. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-22 23:50:35 UTC
From: k7itm@aol.com
Message-ID: <3200347.0402221550.6ea64dc0@posting.google.com>
Source record: 28323

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message news:<p0je30ta6l47nv05utaiir1j6fjhmovn2b@4ax.com>...

> What's a doubler based on the good old 1N4148 good for, top end
> frequency-wise?

Thanks to Jan-Martin for his reference to some actual experiments.

But in reply to Paul, I'd ask: Do you understand how the "full-wave rectifier doubler" works, basically? (Ideal waveforms and all that.) Do you have a data sheet for the 1N4148? What items from the data sheet do you suppose might limit the useful frequency? Can you make an estimate, based on the data sheet numbers? What would you do in a design to extend the frequency range for a given diode characteristic? For example, what does diode capacitance do to circuit operation? What does reverse recovery do? In the full-wave frequency doubler circuit, what does the input impedance look like, assuming an ideal transformer, when one diode is forward biased and the other is reverse-recovering? Can you think of parts to add to cause that to not be so much of a problem (assuming it is a problem)?

Thinking about this sort of thing is useful not only in figuring out what to expect, at least ball-park, but also in getting better performance out of someone else's circuit and/or understanding its limitations.

Cheers,
Tom

1485. Re: Looking for source for surplus teflon hookup wire.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 01:25:29 UTC
From: Michael Melland <w9wis@charter.net>
Message-ID: <103ieibd84eqj3c@corp.supernews.com>
Source record: 28320

That is Jim Skalski, N2GO with the teflon wire.... jskalski@bellatlantic.net

I buy all kinds of 22 and 24 ga from Jim.... don't know if he has access to
the larger stuff or not.... I suspect he may.

Mike, W9WIS

1486. Re: Looking for source for surplus teflon hookup wire.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 01:25:40 UTC
From: Michael Melland <w9wis@charter.net>
Message-ID: <103ieic1ol3oa3d@corp.supernews.com>
Source record: 28321

That is Jim Skalski, N2GO with the teflon wire.... jskalski@bellatlantic.net

I buy all kinds of 22 and 24 ga from Jim.... don't know if he has access to
the larger stuff or not.... I suspect he may.

Mike, W9WIS

1487. AGC - why delayed? good properties?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 03:21:44 UTC
From: Tom Holden <holden_family@sympatico.ca>
Message-ID: <dle_b.3267$Mo4.118176@news20.bellglobal.com>
Source record: 28325

In researching desirable AGC characteristics that might be applied to the RS DX-394 over a year ago, I came across the terms 'delayed' and 'hang'. Thought they were interchangeable but on reading the ARRL 2004 Handbook, it seems that 'delayed' means that the attack speed on the RF stages is slower than on the IF stages or is relatively delayed. According to the HB, "This prevents a premature increase in the receiver noise figure". On the DX-394, I found and removed an electrolytic capacitor in the AGC line of the RF stages that has the effect of slowing the attack relative to that of the IF. Can't say I hear any difference with it out. I would have thought that we would want the AGC attack to be fast on all stages in order to avoid momentary overload.

I concluded the following to be good targets for AGC behaviour after surveying a number of radios - corroboration or otherwise appreciated.

Attack: 1-13ms
Release:
- fast: <25ms
- medium: ~300ms
- slow: 1.8-3 seconds

I thought the fast release to be too fatiguing for human listening to SSB speech and ICW code but desirable for machine decoded data formats to minimise loss of data. Also, with audio derived AGC, the distortion on heavy bass modulation of all AM modes would be excessive.

In applying mods to the DX-394 by others and some designed by myself, stretching the release time towards the 'slow' target has the side effect of lengthening the attack time to potentially a few hundred milliseconds. My version is the fastest so far with an attack of about 100 ms on a release of 2 seconds. I'm wondering if there is much to be gained by struggling to bring that down to the target of 1-13 ms.

Comments on my assumptions, logic, conclusions and questions most welcome!

TIA,

Tom

1488. Re: high quality graph of nice 0-100 analog scale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 03:35:31 UTC
From: Wim Lewis <wiml@underhill.hhhh.org>
Message-ID: <c1bse3$q8k$0@216.39.137.58>
Source record: 28324

```
In article <3200347.0402191253.2404c076@posting.google.com>,
Tom Bruhns <k7itm@aol.com> wrote:
>Nice and very useful, but appears to not do log scales as I believe
>the OP wants. [...]
....
>Should be easy to do in Scilab, too, and use Ghostscript to print
>(like Panel and Dial do). That gives the ability to make different
>size tics and to label them.

If you have Ghostscript or some other PostScript viewer/printer, it should
be pretty easy to produce the scales in PostScript. PS is really adept
at drawing simple geometrical objects (draw an arc here; draw a line
at 203.5 degrees from the vertical here; etc.) and it should be easy to
put together a scale. Something like...

/radius 100 def % radius of the dial
/startscale 100 def % "zero" (leftmost) reading
/fullscale 1000 def % full-scale reading
/deflection -270 def % full-scale deflection, in degrees counterclockwise
0.1 setlinewidth % draw lines 0.1 point wide
150 150 translate % move the center out to where it's visible
[ 100 200 300 400 500 600 700 800 900 1000 ] % values to draw
% for each tic value: take the logarithm, rotate, and draw a line at that angle
{ gsave
startscale div log % take the log of the value wrt. zero reading
fullscale startscale div log div % scale full scale to 0...1
deflection mul % scale full scale to 0...deflection degrees
rotate 0 0 moveto radius 0 lineto stroke % rotate and draw
grestore } forall
showpage % finish the sheet

Of course, you might want to fiddle with that to get a particular look.
You could put the labels on in PS also, but it might be easier to
import it into some other program and apply them there.

--
Wim Lewis <wiml@hhhh.org>, Seattle, WA, USA. PGP keyID 27F772C1
```

1489. Re: Storbe light when phone rings

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 05:31:18 UTC
From: Chris Boone <nospam@earthlink.net>
Message-ID: <40399025.2060306@earthlink.net>
Source record: 28326

RS used to sell such an item...plugs in and strobes when the line rings...
use them a lot in broadcast use.....

Chris
WB5ITT
at arrl.net

Keith wrote:

> Does anyone have a schematic for once of those strobe circuits that will
> flash when the phone rings. I want to make one for my workshop where it's
> very noisy at times and I don't hear the phone.
>
> Thanks
>
> Keith
>

1490. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 09:45:24 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <dpgj301f2fsstek0prhl4asjvm4bb8l99p@4ax.com>
Source record: 28327

On 22 Feb 2004 15:50:35 -0800, k7itm@aol.com (Tom Bruhns) wrote:

>But in reply to Paul, I'd ask: Do you understand how the "full-wave
>rectifier doubler" works, basically? (Ideal waveforms and all that.)

IFAIA, pretty much the same as a full-wave rectifier in a PSU. All the negative going half-cycles are converted to postitive going half-cycles that 'slot in' between the unmodified positive half cycles. The resulting waveform is twice the original frequency and subsequent signal processing can restore this half-wave signal back to a full sine wave of the desired output frequency.

>Do you have a data sheet for the 1N4148?

I could get one off the good old 'net. Aw, fuck it; I'll get one. Hang on a minute..... Got it!

>What items from the data
>sheet do you suppose might limit the useful frequency?

Primarily junction capacitance, I guess. In this instance, 4pF. There's also something called transit time, IIRC, which is relevant, but for some reason it's not mentioned on the DS.

>Can you make
>an estimate, based on the data sheet numbers?

Nope. Maybe from the graphs, though...

>What would you do in a
>design to extend the frequency range for a given diode characteristic?
> For example, what does diode capacitance do to circuit operation?

More slows it down.

>What does reverse recovery do?

Slower recovery the same, I guess. I'm not totally familiar with this parameter but it would make sense.

>In the full-wave frequency doubler
>circuit, what does the input impedance look like, assuming an ideal
>transformer, when one diode is forward biased and the other is
>reverse-recovering? Can you think of parts to add to cause that to
>not be so much of a problem (assuming it is a problem)?

Totally beyond me at this stage, I'm afraid!

--

The BBC: Licensed at public expense to spread lies.

1491. Re: AGC - why delayed? good properties?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 10:28:19 UTC
From: Doug Smith W9WI <w9wi@invalid.invalid>
Message-ID: <4039D5C1.3040800@invalid.invalid>
Source record: 28328

Tom Holden wrote:
> In researching desirable AGC characteristics that might be applied to the RS
> DX-394 over a year ago, I came across the terms 'delayed' and 'hang'.
> Thought they were interchangeable but on reading the ARRL 2004 Handbook, it
> seems that 'delayed' means that the attack speed on the RF stages is slower
> than on the IF stages or is relatively delayed. According to the HB, "This
> prevents a premature increase in the receiver noise figure".

I always thought "delayed AGC" means that there's no gain reduction
unless the strength of the incoming signal reaches a certain threshold.
It's not a delay in time, but in amplitude.

--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com

1492. Re: Power Inductor Optimization...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 13:37:30 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <X_SdnbGpXKXwnKfdRVn-jQ@comcast.com>
Source record: 28329

Consider using a faster switching chip -- this reduces the amount of inductance you need to store energy.

Don't try to minimize the ripple -- optimize it. This will also allow you to use smaller parts. Also, carefully select the ESR and inductance of the filter cap for the application -- at a high frequency the filter cap will also look like an inductor. All trace lengths add inductance = impedance = loss of energy.

You can get 1 MHz chips from TI, National, Linear Tech etc. I myself haven't used a chip above 100 kHz, so would suggest that you peruse the manufacturer's data sheets for an appropriate PCB layout.

Jack

<nospam@nowhere.nil> wrote in message
news:hobg30hjjt4rr4c29b251ittavjgpus4rj@4ax.com...
> This is not directly HAM releated,
> but Ham radio is used in the project.
>
> I'm building a Solar powered RC plane.
>
> In that plane I have 6 different solar cell planes.
> For each plane I'm building a maximum power point tracker.
> The heavest component of the MPP is the inductor.
>
> I need the lighetest most efficient inductor possible.
>
> Specifications
>
> 30uH min, 50uH prefered.
> 6 amps DC current max.
> 7 amps peak current max.
> 50 to 150Khz switching freq.
>
> (The current ripple has to be low in releation to the DC current to
> keep the solar cell in the "Sweet" spot.
>
> Inductor can not be bigger than 100mm in diameter and 25 mm thick.
>
> I'm thinking I want a Aluminium wire air core toriod, but I'm not
> sure.
>
> The weight trade off:
>

> At the point of marginal flight. (About 3 amps in the inductor)
> Weight is at an absolute premium. I can trade one watt of inductor
> loss (at 3 amps) for 190 gm of mass.
>
> Assuming 12 Ga wire in a cylindrical core 4" in diameter:
> 12 Ga two layers of 10 turns each gives about 45uH.
> 251 inches of wire for a wt of: 57gm
> and a DC loss of: 1/2 W at 3 A and 2 W at 6 A
>
> I'm a bit lost here .... any suggestions on how to proceede?
> Should I consider using a toroid core?
> Adds weight, and switching losses, but reduces the total feet of wire
> and thus the weight.
>
> It would be a lot easier of solar cells were not low voltage high
> current devices... alas they are.
>
>
>
> Paul (Kl7JG/6)
>
>
>
>
>
>
>
>
>
>
>

1493. Sample-and-hold product detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 14:31:35 UTC
From: Heikki Ahola <heikki.ahola@vtt.fi>
Message-ID: <403A0EC6.E5AC7A8A@vtt.fi>
Source record: 28330

Dr. Ulrich Rohde described in one of his articles (QST ?) a novel
product
detector based on CD4066 MOS-switch, which is supposed to have a
superior
performance compared to other types. I have tried the schematic and
found the distortion quite unacceptable.

I have not found any other reference to this type of product detector
and may have misunderstood the cocept somehow. Therefore I would like to
know if this idea is still alive and/or if somebody has any experience
of it. Otherwise I will rely on either DMB or MOSFET in my homebrew
receiver which is intended to be an advanced .
project.

I have already successfully constucted the front end with Fairchild
FST3125
switching mixer followed by a strong postmix amp, 12-pole xtal filter
and the following if-stages. It would a shame to destroy the whole thing
with an inferior detector/af-portion when I am trying accomplish
something better than my previous
design which is heavily based on the W7ZOI Progressive receiver.

73 de Heikki

1494. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 15:01:50 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <0v7i30dj2j7bu626auoe3qaut0e9q61mb9@4ax.com>
Source record: 28332
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 22 Feb 2004 18:09:03 -0000, SWbeginner
<SWbeginner@nowhere.com> wrote:

>Do the dual gate mosfets outperform the NE602 with regards to IP3?
>
>For some reason the NE602 refuses to oscillate with crystals but LC's are
>OK.
>
>>
>> Since you don't specify anything important like IP3, my recommendation
>> is Siemens S042P. Earlier, when Motorola was easy to buy from, I would
>> have used MC1496P, but none of them have high IP3 and I suppose NE602
>> isn't any better. If balance isn't important, I would use BF905 or
>> BF199
>>
>> ----
>> Jan-Martin, LA8AK, N-4623 Kristiansand
>> technical topics http://home.online.no/~la8ak/c.htm

here is the first mention of IP3 in the thread, I've asked whether it
is important or not, but have not received any confirmation and will
therefore not comment. If IP3 was said to be important I am aware of
other mixers, and have used some douzens SBL1, SBL-1X, CM-1, SRA1 and
other since 1977. A very easy mixer to use is TBA120=SN76660N.

I usually construct to requirement, not what somebody else think is
fine

73

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

1495. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 15:01:51 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <ic9i301417lpnbg8pt2gbut0634t3da819@4ax.com>
Source record: 28333

On 22 Feb 2004 20:39:33 GMT, averyfineman@aol.com (Avery Fineman)
wrote:

> Sorry. If you are using the passive diode doubler looking like a
> full-wave rectifier circuit, and you have a symmetric square wave,
> the only harmonics you get are from the transition edges.
>
> Symmetric square waves have very low even harmonic energy
> content; harmonics are in the odd harmonic frequencies.
>
> A non-symmetric rectangular (not a 'square') waveform has more
> even-harmonic energy content.
>
with some experience you might say something else. Even harmonics are
'harmonics' too

and for many purposes it is an advantage when the odd harmonic content
is low

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

1496. Re: Power Inductor Optimization...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 15:03:03 UTC
From: nospam@nowhere.nil
Message-ID: <n35k30dbdass37112fh2pjraqet078l330@4ax.com>
Source record: 28331

>Consider using a faster switching chip -- this reduces the amount of
>inductance you need to store energy.

There are multiple losses here.
MY nominal array voltage is about 7V my converter is boosting to
10 to 20 V (Depends on the amount of solar power availible and the
loading conditions on the prop/motor)

So if I run a normal boost converter with a good Shotkey diode I get a
drop of 0.4V or 4% (at 10V) of my total power goes into the diode
drop. So I am using syncronous rectification.
I can't find a highside fet driver that will efficently run much
faster than 100Khz.

I've thought about (mis) using one of the low voltage syncronous
buck converters and running it backwards, but the the chips are
generally too smart about startup and the error conditions and current
sense choices are wrong.

>> Paul (Kl7JG/6)

1497. Re: Storbe light when phone rings

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 17:02:36 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c1dbqp$q1o$1@newshost.mot.com>
Source record: 28359

The easiest is a neon bulb NE-2 [don't use an NE-2H] and the largest resistor to get it to light. Probably in the 10's to 100k. This isn't bright, but needs no power. This was used for many years in many circuits.

If it is not bright enough, then one of the other circuits with a high resistance sense and external power to light a bright light is needed. That link has one

http://www.ee.washington.edu/circuit_archive/circuits/F_ASCII_Schem_Tel.html

"Keith" <salmo@nf.sympatico.ca> wrote in message news:KEMZb.101943$IF6.2999441@ursa-nb00s0.nbnet.nb.ca...
> Does anyone have a schematic for once of those strobe circuits that will
> flash when the phone rings. I want to make one for my workshop where it's
> very noisy at times and I don't hear the phone.
>
> Thanks
>
> Keith
>

1498. FA: Something for everyone - LAST DAY!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 17:09:18 UTC
From: Philip de Cadenet <Philstheboss@thebbc.fslife.co.uk>
Message-ID: <HYosmKb+OjOAFw6e@philstheboss.freeserve.co.uk>
Source record: 28336

Full description and photo's at:

http://tinyurl.com/mg8j

Good luck should you decide to bid.

--
Philip de Cadenet G4ZOW
Transmitters 'R' Us
http://www.transmittersrus.com

1499. Re: Sample-and-hold product detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 17:10:00 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <ltq_b.80259$IF1.63819@nwrdny03.gnilink.net>
Source record: 28335

Heikki,
I'm not sure exactly what this particular circuit looks like, but I strongly suspect it's just a balanced mixer made from 4066 analog switches. I have used this technique and it is quite good at low IF frequencies (a few MHz or less). Are you sure you have the switches biased properly? The thru-path should be biased at about 1/2 of the 4066 DC supply voltage in order to avoid severe signal clipping. Can you point to a link where the circuit is shown??

Joe
W3JDR

"Heikki Ahola" <heikki.ahola@vtt.fi> wrote in message
news:403A0EC6.E5AC7A8A@vtt.fi...
> Dr. Ulrich Rohde described in one of his articles (QST ?) a novel
> product
> detector based on CD4066 MOS-switch, which is supposed to have a
> superior
> performance compared to other types. I have tried the schematic and
> found the distortion quite unacceptable.
>
> I have not found any other reference to this type of product detector
> and may have misunderstood the cocept somehow. Therefore I would like to
> know if this idea is still alive and/or if somebody has any experience
> of it. Otherwise I will rely on either DMB or MOSFET in my homebrew
> receiver which is intended to be an advanced .
> project.
>
> I have already successfully constucted the front end with Fairchild
> FST3125
> switching mixer followed by a strong postmix amp, 12-pole xtal filter
> and the following if-stages. It would a shame to destroy the whole thing
> with an inferior detector/af-portion when I am trying accomplish
> something better than my previous
> design which is heavily based on the W7ZOI Progressive receiver.
>
> 73 de Heikki
>

1500. Re: AGC - why delayed? good properties?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 17:21:57 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c1dcv0$ro9$1@newshost.mot.com>
Source record: 28360

Tom,

The term "Delayed AGC" originally referred to the fact that the AGC
action (reduction of gain) does not occur until the received signal reaches
some signal level and NOT to a time delay. I believe this is to allow the
signal to get up to a desirable level at the detector before any gain
reduction occurs, otherwise it won't get to "maximum" level at the detector.
AGC time constant is quite a personal preference and also depends on
different conditions. I prefer slow AGC to prevent pumping and the annoying
bursts of noise between SSB syllables, but if QSB is fast, this can loose
syllables.

--
Steve N, K,9;d, c. i My email has no u's.

"Tom Holden" <holden_family@sympatico.ca> wrote in message
news:dle_b.3267$Mo4.118176@news20.bellglobal.com...
> In researching desirable AGC characteristics that might be applied to the
RS
> DX-394 over a year ago, I came across the terms 'delayed' and 'hang'.
> Thought they were interchangeable but on reading the ARRL 2004 Handbook,
it
> seems that 'delayed' means that the attack speed on the RF stages is
slower
> than on the IF stages or is relatively delayed. According to the HB, "This
> prevents a premature increase in the receiver noise figure". On the
DX-394,
> I found and removed an electrolytic capacitor in the AGC line of the RF
> stages that has the effect of slowing the attack relative to that of the
IF.
> Can't say I hear any difference with it out. I would have thought that we
> would want the AGC attack to be fast on all stages in order to avoid
> momentary overload.
>
> I concluded the following to be good targets for AGC behaviour after
> surveying a number of radios - corroboration or otherwise appreciated.
>
> Attack: 1-13ms
> Release:
> - fast: <25ms
> - medium: ~300ms
> - slow: 1.8-3 seconds
>
> I thought the fast release to be too fatiguing for human listening to SSB
> speech and ICW code but desirable for machine decoded data formats to

> minimise loss of data. Also, with audio derived AGC, the distortion on
heavy
> bass modulation of all AM modes would be excessive.
>
> In applying mods to the DX-394 by others and some designed by myself,
> stretching the release time towards the 'slow' target has the side effect
of
> lengthening the attack time to potentially a few hundred milliseconds. My
> version is the fastest so far with an attack of about 100 ms on a release
of
> 2 seconds. I'm wondering if there is much to be gained by struggling to
> bring that down to the target of 1-13 ms.
>
> Comments on my assumptions, logic, conclusions and questions most welcome!
>
> TIA,
>
> Tom
>
>

1501. Collins 30L1 Round

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 17:49:07 UTC
From: Carl Domanico <vze2686b@verizon.net>
Message-ID: <n2r_b.72483$KV5.25552@nwrdny01.gnilink.net>
Source record: 28337

Hi I'm looking for a Collins 30L1 Round Emblem, Linear
Amplifer...Condition...Mint to Excellent..or will accept very good
condition...Reasonably priced...

Thanks
Carl

1502. Re: AGC - why delayed? good properties?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 18:13:46 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <103kgmum37i8m4a@corp.supernews.com>
Source record: 28338

That's the meaning I know -- and it's probably more appropriate for the purposes of keeping the receiver noise figure up.

"Doug Smith W9WI" <w9wi@invalid.invalid> wrote in message news:4039D5C1.3040800@invalid.invalid...
> Tom Holden wrote:
> > In researching desirable AGC characteristics that might be applied to the RS
> > DX-394 over a year ago, I came across the terms 'delayed' and 'hang'.
> > Thought they were interchangeable but on reading the ARRL 2004 Handbook, it
> > seems that 'delayed' means that the attack speed on the RF stages is slower
> > than on the IF stages or is relatively delayed. According to the HB, "This
> > prevents a premature increase in the receiver noise figure".
>
> I always thought "delayed AGC" means that there's no gain reduction
> unless the strength of the incoming signal reaches a certain threshold.
> It's not a delay in time, but in amplitude.
>
> --
> Doug Smith W9WI
> Pleasant View (Nashville), TN EM66
> http://www.w9wi.com
>

1503. Re: Storbe light when phone rings

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 18:35:41 UTC
From: Tom Sevart <n2uhc.spam@yahoo.com>
Message-ID: <c1da1f$1gqcru$1@ID-52518.news.uni-berlin.de>
Source record: 28334

"Keith" <salmo@nf.sympatico.ca> wrote in message
news:KEMZb.101943$IF6.2999441@ursa-nb00s0.nbnet.nb.ca...
> Does anyone have a schematic for once of those strobe circuits that will
> flash when the phone rings. I want to make one for my workshop where it's
> very noisy at times and I don't hear the phone.

All Electronics has boards that will do this, 5 for $1.00.

http://www.allelectronics.com/cgi-bin/category.cgi?category=search&item=EX-70&type=store

Tom

1504. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 19:12:44 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <3hjk30pqda5svrln9r87ne88q4d2gohlgi@4ax.com>
Source record: 28339
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 23 Feb 2004 16:01:50 +0100, "Jan-Martin Noeding, LA8AK"
<la8ak@online.no> wrote:

>here is the first mention of IP3 in the thread, I've asked whether it
>is important or not, but have not received any confirmation and will
>therefore not comment. If IP3 was said to be important I am aware of
>other mixers, and have used some douzens SBL1, SBL-1X, CM-1, SRA1 and
>other since 1977. A very easy mixer to use is TBA120=SN76660N.

If you have a very high-Q tunable front end filter, you usually get
away with a mediocre IP3. However, if wide open (1 octave) front end
filters are used, you would benefit from a high IP3 if you are using a
decent antenna.

If you try to receive the 7000 .. 7100 kHz amateur band in Europe,
with 100-500 kW broadcast transmitters every 5 kHz starting at 7105
kHz, the input IP3 number would have to be at least 20 dB higher than
the strongest broadcast signals or even 30 dB higher if you try to
receive QRP stations.

Attenuating the whole antenna signal with a passive attenuator will
also rapidly drop the IP3 products, but sooner or later the weak
desired signal will be lost in attenuator thermal noise.

Paul OH3LWR

1505. FS:HB cases de W7ZFB

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 19:26:14 UTC
From: msix@oldplato.nmia.com
Message-ID: <a9a45$403a53d6$402a8028$27856@nmia.allthenewsgroups.com>
Source record: 28340

2 each NIB Bud SB-2143 steel shadow cabinet, panel recessed 1 inch,
15.5Wx9Dx6H, medium blue/gray hammertone, back and bottom
removeable, alum front panel primed gray for painting a
contrasting color. Takes Bud AC-409 13x7x2 chassis. $25 each

New unused alum LMB CO-1 cabinet with matching LMB chassis.
Contoured perforated case, recessed front panel, hinged top.
Gray with ivory trim, dark gray front panel.
case 14.5Wx13Dx6.5H, chassis 13x11x2. $75

New unused alum LMB CO-2. Style as above, 12Wx10Dx6.5H.
Takes LMB CO-2 11x8x2 chassis. $50

New unused alum LMB CO-3. Style as above, no hinged top.
5.5Wx7Dx3H. $19

Nice used alum LMB CO-3. Style as above, no hinged top.
Front has pot, switch and pilot light mounted.
Rear has 3 BNC jacks and fuse mounted. $10

Plus postage as usual...
73 John W7ZFB - Good in QRZ
n

1506. Soldering Tips that Heat Very Fast

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 19:57:52 UTC
From: martin@okstate.edu
Message-ID: <c1dm00asb1@hydrogen.cis.okstate.edu>
Source record: 28346

As a ham who happens to be blind, I have been soldering for
near 40 years. Yes, it certainly can be done, but it works best if
one does a few things differently.

One thing that helps a lot is if the soldering appliance such
as a soldering gun heats very fast. This lets you position everything
safely without burning either fingers or the work before applying
heat.

The first soldering I ever did was with a Weller gun. They do
heat relatively fast and let you put the tip where it needs to be just
as you pull the trigger.

My all-time favorite soldering tool for small work is the Wahl
cordless gun with the smallest tip they sell. I believe it is called
the Wahl Isotip.

This brings me to my question. Is there anything else which
has come along that heats a small tip rapidly, the faster the better?

I have even tried one of Radio Shack's butane-powered
soldering irons. They certainly work, but the experience is similar
to a continuously-on electric iron except one must be mindful of the
little flame inside the screened-in area at the tip base.

There was recently some discussion on the blind-hams mailing
list I am on about this topic and I thought I'd check to see if
anything has changed.

My only gripe about the cordless guns is that the nicads go
bad after two or three years and it is necessary to replace them.
Of course, the task of replacing them is a drag in that the challenge
is that of getting everything back in the case exactly the way it was
before. It can be done, but patience is very much in order.
--

Martin McCormick WB5AGZ Stillwater, OK
Information Technology Division Network Operations Group

1507. DDS 50 ohms buffer ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 23:07:12 UTC
From: lepton@sympatico.ca
Message-ID: <399debb7.0402231507.3a5a11c1@posting.google.com>
Source record: 28342

Hi.

I try to figure out what can be the amplifier that can match the AD9835 300

ohms output impedance to 50 ohms with a gain of about 8 db at 13.5 Mhz.

Is this can be done with a simple transistor or a monolithic amplifier ?

I have take look on the net and they always use it unbuffered !

Thanks in advance for any information.

Gillis

1508. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 23:11:27 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <8j0l30l03gvuj2q9oqasodtd2hfqoev8dn@4ax.com>
Source record: 28341
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 22 Feb 2004 18:09:03 -0000, SWbeginner
<SWbeginner@nowhere.com> wrote:

>Do the dual gate mosfets outperform the NE602 with regards to IP3?
>
>For some reason the NE602 refuses to oscillate with crystals but LC's are
>OK.
>
>>
>> Since you don't specify anything important like IP3,

Can someone kindly confirm what the hell "IP3" is?? I can only think
of "3rd order intermodulation products" which might easily be
completely wrong. It would be helpful if whoever first uses an
uncommon abbreviation would have the courtesy to state what it meant!
(as is customary first time around)
<snarl, hiss, etc>
--

The BBC: Licensed at public expense to spread lies.

1509. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 23:12:55 UTC
From: Jim Thompson <thegreatone@example.com>
Message-ID: <q32l30112argrqrl6kar210o6engd8qq7g@4ax.com>
Source record: 28343
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 23 Feb 2004 23:11:27 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>On Sun, 22 Feb 2004 18:09:03 -0000, SWbeginner
><SWbeginner@nowhere.com> wrote:
>
>>Do the dual gate mosfets outperform the NE602 with regards to IP3?
>>
>>For some reason the NE602 refuses to oscillate with crystals but LC's are
>>OK.
>>
>>>
>>> Since you don't specify anything important like IP3,
>
>Can someone kindly confirm what the hell "IP3" is?? I can only think
>of "3rd order intermodulation products" which might easily be
>completely wrong. It would be helpful if whoever first uses an
>uncommon abbreviation would have the courtesy to state what it meant!
>(as is customary first time around)
><snarl, hiss, etc>

It's only an "uncommon abbreviation" to certain Brits who think they
can learn by insulting the masters ;-)

Look up 3rd order intercept point.

...Jim Thompson
--
James E.Thompson, P.E.	mens
Analog Innovations, Inc.	et
Analog/Mixed-Signal ASIC's and Discrete Systems	manus
Phoenix, Arizona Voice:(480)460-2350	
E-mail Address at Website Fax:(480)460-2142	Brass Rat
http://www.analog-innovations.com	1962

I love to cook with wine. Sometimes I even put it in the food.

1510. Re: DDS 50 ohms buffer ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 23:43:34 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <Gew_b.896$ZV1.256@nwrdny01.gnilink.net>
Source record: 28344

Gillis,
Most of the Analog Devices DDS chips have a current-source output. This means the DDS source impedance is set by an external load resistor (Rout), making it somewhat arbitrary. I'm using 50 ohms in my unit. The peak RF output voltage will be Idac x Rout, where Idac is the DDS DAC current.

As far as an amplifier is concerned, the choice is somewhat dependent on the application. If the load circuit is fairly 'stiff' and is not real sensitive to the source impedance, you can use a MAR monolithic amplifier (Mini-Circuits or Avantek). However, these can become unstable when driving reactive loads, and they also have poor reverse isolation, which means that load changes could affect the frequency response of the DDS lowpass filter. Also, you want good linearity, otherwise the waveform will become distorted and the harmonic content will increase.

You might want to look into some of the ultra-wideband opamps that are available from people like National Semiconductor.
Joe
W3JDR

"Gillis" <lepton@sympatico.ca> wrote in message
news:399debb7.0402231507.3a5a11c1@posting.google.com...
> Hi.
>
> I try to figure out what can be the amplifier that can match the AD9835
300
>
> ohms output impedance to 50 ohms with a gain of about 8 db at 13.5 Mhz.
>
> Is this can be done with a simple transistor or a monolithic amplifier ?
>
> I have take look on the net and they always use it unbuffered !
>
> Thanks in advance for any information.
>
>
> Gillis

1511. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-23 23:47:08 UTC
From: k7itm@aol.com
Message-ID: <3200347.0402231547.3f0c5972@posting.google.com>
Source record: 28345

Hmmm...I know that there are other ways to generate sampling pulses in
things like (ultra) fast sampling scopes. I suspect that similar
techniques can be used for fast edges. What little I know about that
area I can't really say much about.

After my SRD posting, I reviewed a little more in the Inventions of
Opportunity book. The late '50's fast sampling scope article
mentioned that the HP Labs researcher who saw the diode recovery
phenomenon went on to gain understanding about the mechanism involved,
and presented a paper about it at one of the semiconductor
conferences. A couple articles later in the book there's one devoted
to SRDs. They show a *20 frequency multiplier in one stage using a
SRD. Net efficiency can be pretty good, with the proper design. Just
don't want to be actually dissipating the energy that's in all the
other harmonics.

Cheers,
Tom

Roy Lewallen <w7el@eznec.com> wrote in message
news:<103efnbpjtna3da@corp.supernews.com>...
> Tom Bruhns wrote:
> > . . .
> > . . . Seems like step
> > recovery diodes are not in as great favor as they once were, since
> > there are generally better ways to generate higher order harmonics.
> > . . .
>
> Getting a bit off-topic here, but as of a few years ago, we were using
> step recovery diodes to generate the step in high speed TDR systems, and
> to generate the strobe for the sampling gate in high speed sampling
> scopes. Rise times were on the order of 7 - 15 ps (bandwidth up to 50
> GHz or so), limited primarily by circuitry external to the diodes. SRDs
> replaced tunnel diodes in earlier generations of instruments. I've been
> out of touch with that class of instruments for a few years now -- do
> you know if something has replaced the SRD for generating fast steps, or
> just for harmonic generation?
>
> Roy Lewallen, W7EL

1512. Re: AGC - why delayed? good properties?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 00:55:09 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <vl5k30hj01gmqhcoan7191vhjvt4ec2tvj@4ax.com>
Source record: 28347

On Mon, 23 Feb 2004 10:28:19 GMT, Doug Smith W9WI
<w9wi@invalid.invalid> wrote:

>Tom Holden wrote:
>> In researching desirable AGC characteristics that might be applied to the RS
>> DX-394 over a year ago, I came across the terms 'delayed' and 'hang'.
>> Thought they were interchangeable but on reading the ARRL 2004 Handbook, it
>> seems that 'delayed' means that the attack speed on the RF stages is slower
>> than on the IF stages or is relatively delayed. According to the HB, "This
>> prevents a premature increase in the receiver noise figure".
>
>I always thought "delayed AGC" means that there's no gain reduction
>unless the strength of the incoming signal reaches a certain threshold.
> It's not a delay in time, but in amplitude.

Yes, this is correct for the proffesionals, a certain amplitude level
must be reached before the AGC threshold is hit, while amateurs
started to talk about time delay, rise and fall times when AGC was
optimized for SSB reception. But even receivers designed before WWII
had some degree of mode-dependent time delay optimization, fast for AM
and somewhat slower for CW
I experienced the importance of proper time constant when I tried to
improve the Collins 51-S, see http://home.online.no/~la8ak/b35.htm

73
JM

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

1513. safeguard against brownouts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 02:05:39 UTC
From: U <outhouse@midcoast.com>
Message-ID: <BC601BA8.82B%outhouse@midcoast.com>
Source record: 28280

Where I live, in the woods of Maine, we have power outages.

Solar panels and all that stuff is quite expensive, but old car batteries ("old" is when it doesn't get my Diesel started in subzero temps) are not.

To make things just a bit comfi it would be nice to leave it in place with a charger attached (right now I tote the charger around when needed).

Many things will run right off the batterie(s), others might need an inverter.

So basically I am talking about a photovoltaic system without the photovoltaic panels, sort off.

So which chargers can I leave permanently attached to a battery?

The word 'trickle charger' or 'shore power' comes to mind. How is that different from my old Sears charger which does me good for many years already (but I unhook it after a day at most!).

73

Uwe

1514. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 02:18:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <103ld3nb4oqgn7f@corp.supernews.com>
Source record: 28348
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge wrote:
>
> Can someone kindly confirm what the hell "IP3" is?? I can only think
> of "3rd order intermodulation products" which might easily be
> completely wrong. It would be helpful if whoever first uses an
> uncommon abbreviation would have the courtesy to state what it meant!
> (as is customary first time around)
> <snarl, hiss, etc>

I agree it's discourteous to use an uncommon abbreviation without explanation. But IP3 is a very common abbreviation when discussing mixer or receiver performance, and it's reasonable to assume that anyone more than superficially involved in receiver or mixer design or application has at least heard the term. Or that they can at least do a simple google search. (It really doesn't take any more time than making an angry newgroup posting!) A google search of "IP3 mixers" brought about 2500 hits. I'm sure that if you read one or two of them, you'll get the idea.

Roy Lewallen, W7EL

1515. Re: What use is an 829B tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 02:25:06 UTC
From: snarflemike@yahoo.com
Message-ID: <20619edc.0402231825.23dc3722@posting.google.com>
Source record: 28349
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew

"Dave" <Devarim@hotmail.com> wrote in message
news:<4bddccded265bb98a0c3f9d6e4d5621c@news.meganetnews.com>...

> What sort of plate caps were used? There are just pins, and
> it looks almost as if there would have been a ceramic gizmo
> like a tube socket to have bridged the two of them....

Fahnestock clips work fine, and they're easy enough to find (e.g.
Mouser), and they even add a bit of heat-sinking. BTW, to connect
both plates in parallel, put a clip on each plate, line them up
together and run a connecting wire through the screw holes, then
solder the whole thing (quickly) and you'll have a perfectly-fitting
dual plate cap.

73,
Mike, KK6GM

1516. Re: AGC - why delayed? good properties?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 02:33:39 UTC
From: Tom Holden <holden_family@sympatico.ca>
Message-ID: <6Ky_b.7420$Mo4.257586@news20.bellglobal.com>
Source record: 28350

Jan-Martin Noeding, LA8AK wrote:
> On Mon, 23 Feb 2004 10:28:19 GMT, Doug Smith W9WI
> <w9wi@invalid.invalid> wrote:
>
>> Tom Holden wrote:
>>> In researching desirable AGC characteristics that might
>>> be applied to the RS DX-394 over a year ago, I came
>>> across the terms 'delayed' and 'hang'. Thought they
>>> were interchangeable but on reading the ARRL 2004
>>> Handbook, it seems that 'delayed' means that the attack
>>> speed on the RF stages is slower than on the IF stages
>>> or is relatively delayed. According to the HB, "This
>>> prevents a premature increase in the receiver noise
>>> figure".
>>
>> I always thought "delayed AGC" means that there's no
>> gain reduction unless the strength of the incoming
>> signal reaches a certain threshold. It's not a delay in
>> time, but in amplitude.
>
> Yes, this is correct for the proffesionals, a certain
> amplitude level must be reached before the AGC threshold
> is hit, while amateurs started to talk about time delay,
> rise and fall times when AGC was optimized for SSB
> reception. But even receivers designed before WWII had
> some degree of mode-dependent time delay optimization,
> fast for AM and somewhat slower for CW
> I experienced the importance of proper time constant when
> I tried to improve the Collins 51-S, see
> http://home.online.no/~la8ak/b35.htm

I seized on the word "delayed" and linked it to the inclusion of a longer time constant in the AGC to the RF stages of the DX-394 than the time constant in the AGC to the IF stages. The Handbook example actually says "As an option, the AGC to the RF amplifier is held off, or 'delayed', by the 0.6V forward drop of the diode so that the RF gain does not start to decrease until larger signals appear. This prevents a premature increase in the receiver noise figure. Also, a time constant of one or two seconds after this diode helps keep the RF gain steady for the short term."

I think 'delay' is a misnomer if what we have in effect is a higher threshold of signal strength for activation of RF AGC than for IF AGC. 'Two-step' AGC might be a better description. 'Delay' seems a more appropriate term for the way AGC is implemented in the DX-394. RF stage attack speed is slower (extra RC time constant probably on order of 100ms)

than that for the IF stage and is clearly 'delayed' in reaching steady state, no matter what the signal level change is, as long as the AGC is activated by the higher, later level. Release speed of the RF AGC is similarly slowed or 'delayed' relative to IF AGC, certainly not by the 1 or 2 seconds in the HB example.

Having removed the 'delay' capacitor, I have not noticed any deleterious effect. What should I be looking for? Would there be some advantage in revising the RF AGC to achieve a 2-step AGC?

73, Tom

1517. Re: AGC - why delayed? good properties?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 02:43:57 UTC
From: Tom Holden <holden_family@sympatico.ca>
Message-ID: <KTy_b.7572$Mo4.259207@news20.bellglobal.com>
Source record: 28351

Tom Holden wrote:
[snip]
> I concluded the following to be good targets for AGC
> behaviour after surveying a number of radios -
> corroboration or otherwise appreciated.
>
> Attack: 1-13ms
> Release:
> - fast: <25ms
> - medium: ~300ms
> - slow: 1.8-3 seconds
>
> I thought the fast release to be too fatiguing for human
> listening to SSB speech and ICW code but desirable for
> machine decoded data formats to minimise loss of data.
> Also, with audio derived AGC, the distortion on heavy
> bass modulation of all AM modes would be excessive.
>
> In applying mods to the DX-394 by others and some
> designed by myself, stretching the release time towards
> the 'slow' target has the side effect of lengthening the
> attack time to potentially a few hundred milliseconds. My
> version is the fastest so far with an attack of about 100
> ms on a release of 2 seconds. I'm wondering if there is
> much to be gained by struggling to bring that down to the
> target of 1-13 ms.
>
> Comments on my assumptions, logic, conclusions and
> questions most welcome!

Still looking for feedback on these targets.

Had one private reply that raised an interesting point about noise blanker operation and 'delayed' RF AGC:
"You might want to test out a system of this sort in the face of a significant amount of broadband impulse noise - e.g car-ignition noise or something like that.

If the attack is made too fast, then impulse noise at a rate of, say, 60-100 Hz would tend to force the RF AGC into its low-gain state, and this could allow weaker RF signals to be buried in the noise of the first-stage mixer.

Using a longer attack time constant will render the RF AGC a lot less vulnerable to the effects of impulse noise. You can then use a noise

blanker, located prior to the first IF AGC, to trim out this noise. As long as the first-stage mixer and the RF amp stage aren't forced into excessive intermodulation by the content of the impulse noise, I'd expect that this approach would give you the best set of behavioral tradeoffs."

73, Tom

1518. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 03:27:06 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <ef8l309p3opr972jj5f2luksa0q36edk8m@4ax.com>
Source record: 28352
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 23 Feb 2004 21:12:44 +0200, Paul Keinanen <keinanen@sci.fi>
wrote:

>
>If you have a very high-Q tunable front end filter, you usually get
>away with a mediocre IP3. However, if wide open (1 octave) front end
>filters are used, you would benefit from a high IP3 if you are using a
>decent antenna.
>
>If you try to receive the 7000 .. 7100 kHz amateur band in Europe,
>with 100-500 kW broadcast transmitters every 5 kHz starting at 7105
>kHz, the input IP3 number would have to be at least 20 dB higher than
>the strongest broadcast signals or even 30 dB higher if you try to
>receive QRP stations.
>
>Attenuating the whole antenna signal with a passive attenuator will
>also rapidly drop the IP3 products, but sooner or later the weak
>desired signal will be lost in attenuator thermal noise.
>
>Paul OH3LWR

for 40m band even an SBL1 may be found inadequate and the solution is
- as you say - a high-Q input selectivity using a 7040kHz ceramic
filter which passes 7,0-7.1MHz within -6dB bandwidth.

I've been told that my FT-902 with schottky ring mixer is worse than
FT-901 with DG-mosfet 1st mixer, but I have no idea what is the main
problem.
I tested a mosfet mixer on 136kHz and found it adequate in most
respects apart from IF leakage, and ended up with 74HC4066 mixer -
used more for reason of being curious about it than that it was really
needed, see http://home.online.no/~la8ak/L1.htm , but it couldn't be
used on 60MHz as the orignal request was for, it might work on 40M
with HEF4013 LO divider on +10VDC. Again you are fed with lot of crop
from persons who don't understand the difference between what is
optimum and what it the most expensive, so I expect somebody to telll
me the nonsense of using FST3125 instead of 74HC4066 without
understanding that the latter has almost 6dB higher IP3, and it is
more fun to use an inexpensive device in spite of having the house
filled up with lot of other better and expensive devices you won't
have time to use in a lifetime.

73 JM

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

1519. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 03:27:07 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <bg9l30pesgu6nb4j6p168od1h8rtjups3q@4ax.com>
Source record: 28353
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 23 Feb 2004 16:12:55 -0700, Jim Thompson
<thegreatone@example.com> wrote:

>
>It's only an "uncommon abbreviation" to certain Brits who think they
>can learn by insulting the masters ;-)
>
>Look up 3rd order intercept point.
>
> ...Jim Thompson

thought everybody had studied Ham Radio December 77 throughly - even
in UK.....
73 ex-G5BFV (at BPO radio station Bearley/SOA)

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

1520. Re: Looking for source for surplus teflon hookup wire.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 04:56:15 UTC
From: James W <change-to-jw22-at-trlp-dot-com@trlp.com>
Message-ID: <103lmbffqa7m20f@corp.supernews.com>
Source record: 28354

Thanks.. I sent an email to Jim

- jim

Michael Melland wrote:
> That is Jim Skalski, N2GO with the teflon wire.... jskalski@bellatlantic.net
>
> I buy all kinds of 22 and 24 ga from Jim.... don't know if he has access to
> the larger stuff or not.... I suspect he may.
>
> Mike, W9WIS
>
>

1521. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 05:58:23 UTC
From: averyfineman@aol.com
Message-ID: <20040224005823.07155.00000909@mb-m06.aol.com>
Source record: 28357

In article <ic9i301417lpnbg8pt2gbut0634t3da819@4ax.com>, "Jan-Martin Noeding, LA8AK" <la8ak@online.no> writes:

>On 22 Feb 2004 20:39:33 GMT, averyfineman@aol.com (Avery Fineman)
>wrote:
>
>> Sorry. If you are using the passive diode doubler looking like a
>> full-wave rectifier circuit, and you have a symmetric square wave,
>> the only harmonics you get are from the transition edges.
>>
>> Symmetric square waves have very low even harmonic energy
>> content; harmonics are in the odd harmonic frequencies.
>>
>> A non-symmetric rectangular (not a 'square') waveform has more
>> even-harmonic energy content.
>>
>with some experience you might say something else. Even harmonics are
>'harmonics' too

OK...I'll reset my time machine and do another 52 years in the business... :-) :-) :-)

>and for many purposes it is an advantage when the odd harmonic content
>is low

Outside of a step-recovery diode multiplier for an L-band sampler-locked oscillator worked on about 1974 (oscillator at about 1.6 GHz), I've not found much even harmonic content from a symmetric square wave.

Unsymmetric digital signals haven't been found to have much more even harmonic content than odd harmonit content when viewed on a spectrum analyzer...until the digital signal pulse width is VERY short compared to its repetition time. The SRD is able to get about as short as such pulses go and the duty cycle is in fractions of a percent. [also "avalanche diode" which I'm sure that someone will bring up sooner or later to start another argument...:-)]

The original question was about "practical multiplier stages." Those would range from doublers to quintuplers. Going much higher HAS been done but it takes VERY expensive lab instruments to prove them out, such as with an SRD "comb generator." Comb generators have all sorts of harmonics but trying to extract, say, the 21st without passing the 20th or 22nd harmonic requires a very fussy high-Q filter. Some of the things _possible_ are not quite in the homebrewer workshop category...or they take a LOT of time to complete.

I mentioned the passive diode doubler for the simple reason it IS simple when used with a distorted sinewave source (not a square wave). The effect of the two diodes in a "full-wave rectifier like" circuit creates an artificial 2nd harmonic by adding one sinusoid swing with the other, opposite-polarity sinusoid swing inverted by transformer action. Jim Pennell commented on that previously (and quite correctly). That makes for a broadband, non-fussy doubler circuit. Old thing and not a super whiz-bang state-of-the-art, hot-off-the-drawing-board wonder but it works. :-)

Len Anderson
retired (from regular hours) electronic engineer person

1522. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 05:58:24 UTC
From: averyfineman@aol.com
Message-ID: <20040224005824.07155.00000910@mb-m06.aol.com>
Source record: 28355

In article <8j0l30l03gvuj2q9oqasodtd2hfqoev8dn@4ax.com>, Paul Burridge
<pb@osiris1.notthisbit.co.uk> writes:

>>> Since you don't specify anything important like IP3,
>
>Can someone kindly confirm what the hell "IP3" is?? I can only think
>of "3rd order intermodulation products" which might easily be
>completely wrong. It would be helpful if whoever first uses an
>uncommon abbreviation would have the courtesy to state what it meant!
>(as is customary first time around)
><snarl, hiss, etc>

Heh heh heh, can't say I blame you for being a bit confused.

The "3rd Order" label is due to the mix products of F_a +/- 2F_b
with F_b being twice its original frequency. "Order" comes from
the constant multipliers, 1 for F_a and 2 for F_b so "1" + "2" equals
3 or the 3rd Order.

What happens is that the slope of the "3rd Order" mix product is
steeper than the normal F_a +/- F_b (order of 2) equation's power
slope. The "3rd Order Intercept Point" is where the two slopes
intersect.

It is much much easier to show this graphically than in words.

The reason for defining intermodulation distortion that way is in
that it is simpler and more accurate to test on both the production
line and in any test lab of a finished product. The old way had been
to just increase the input level and VERY carefully note the output
level, especially when the output level slope departed from a straight
line (indicating some compression, the start of intermodulation
distortion). That old system being very prone to instrument
calibration errors led to some arguments between makers and
buyers, not to mention non-standard notations of "1 db points" and
"3 db points" of distortion relative to input levels.

The Mini-Circuits website used to have some mention of the above
plus the Avantek website and, of course, Agilent when the T&M
division was the original Hewlett-Packard. You might find something
on a search for "3rd Order IP" on the 'net that will also have graphs.

Len Anderson
retired (from regular hours) electronic engineering person

1523. Re: AGC - why delayed? good properties?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 05:58:25 UTC
From: averyfineman@aol.com
Message-ID: <20040224005825.07155.00000911@mb-m06.aol.com>
Source record: 28356

In article <dle_b.3267$Mo4.118176@news20.bellglobal.com>, "Tom Holden"
<holden_family@sympatico.ca> writes:

>In researching desirable AGC characteristics that might be applied to the RS
>DX-394 over a year ago, I came across the terms 'delayed' and 'hang'.
>Thought they were interchangeable but on reading the ARRL 2004 Handbook, it
>seems that 'delayed' means that the attack speed on the RF stages is slower
>than on the IF stages or is relatively delayed. According to the HB, "This
>prevents a premature increase in the receiver noise figure". On the DX-394,
>I found and removed an electrolytic capacitor in the AGC line of the RF
>stages that has the effect of slowing the attack relative to that of the IF.
>Can't say I hear any difference with it out. I would have thought that we
>would want the AGC attack to be fast on all stages in order to avoid
>momentary overload.

According to terms used a half century ago in tube-type receivers,
"delayed AVC" (they used 'AVC' back then instead of 'AGC') just
meant that AGC action is delayed from taking effect until the signal
level rises above wide-open gain. Wasn't a time delay, but closer
to "hold off" voltage of some sort on the AGC control voltage action.

"Attack" and "decay" meant the time of response of the AGC, in
the same manner as audio-only control circuitry for broadcast
audio modulation input. "Attack" being the onset of a signal and
subsequent audio gain reduction time..."decay" being the release
time of any audio gain reduction control signal, that 'decaying' back
to original high-gain amplification.

I suspect that the original "delayed AVC" came about from two
reasons: First was that 'communications receivers' of olden times
usually tuned a rather wide band, usually 1:3 in frequency range
and the non-AGC gain varied by almost the same amount as a
result of tuned circuit impedance changes (tubes would amplify
almost entirely by only voltage changes when running Class A).
A hold-off on the AGC action handled the difference in overall gain
at the extremes of tuning.

Second, and I suspect the stronger reason, was that customers
could hear the front end noise in the speakers (with AGC held
totally off and gain wide open) and get the impression of a "really
hot receiver!" :-)

It's easy to get any kind of "delayed AGC" or hold-off on AGC
control with a DC bias on the detector.

As to the attack and decay times you specified, seems good to me. That can be set to suit the individual listener.

Len Anderson
retired (from regular hours) electronic engineer person

1524. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 06:54:17 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <103lt8psdt0vnec@corp.supernews.com>
Source record: 28358

By the way, the topic of third order intercept point is covered very nicely in _Experimental Methods in RF Design_. As in its predecessor _Solid State Design for the Radio Amateur_ (Hayward and DeMaw), the authors point out that it's not always obvious whether the intercept is at a circuit's input or output, and consequently the importance of specifying which is meant. So in that book, you'll also find the more obscure but unambiguous abbreviations IIP3 and OIP3.

Roy Lewallen, W7EL

1525. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 07:09:58 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <1fql30165sku3ajncd91tqqsda7oadimhd@4ax.com>
Source record: 28361
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 23 Feb 2004 16:12:55 -0700, Jim Thompson
<thegreatone@example.com> wrote:

>Look up 3rd order intercept point.

And pay special attention if this is input IP3 (the power of the test tones are measured at the input of the device) or output IP3 (power levels measured at device output).

This is especially important, since a typical active Gilbert cell mixer (1496, NE602) have some gain, while a typical diode ring mixer (SBL-1) have a 6-7 dB loss.

Paul OH3LWR

1526. Re: DDS 50 ohms buffer ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 09:44:25 UTC
From: St&#65533;phane Rey <sre_prolem@yahoo.com>
Message-ID: <403b1cf6$1@news.deckpoint.ch>
Source record: 28362

Some Maxim Amps are also suitable : MAX4212 for instance or any chip of the
familly with enough bandwith

Regard
Stephane, F1TJJ

"W3JDR" <joe@roccis.com> wrote in message
news:Gew_b.896$ZV1.256@nwrdny01.gnilink.net...
> Gillis,
> Most of the Analog Devices DDS chips have a current-source output. This
> means the DDS source impedance is set by an external load resistor (Rout),
> making it somewhat arbitrary. I'm using 50 ohms in my unit. The peak RF
> output voltage will be Idac x Rout, where Idac is the DDS DAC current.
>
> As far as an amplifier is concerned, the choice is somewhat dependent on
the
> application. If the load circuit is fairly 'stiff' and is not real
sensitive
> to the source impedance, you can use a MAR monolithic amplifier
> (Mini-Circuits or Avantek). However, these can become unstable when
driving
> reactive loads, and they also have poor reverse isolation, which means
that
> load changes could affect the frequency response of the DDS lowpass
filter.
> Also, you want good linearity, otherwise the waveform will become
distorted
> and the harmonic content will increase.
>
> You might want to look into some of the ultra-wideband opamps that are
> available from people like National Semiconductor.
> Joe
> W3JDR
>
>
> "Gillis" <lepton@sympatico.ca> wrote in message
> news:399debb7.0402231507.3a5a11c1@posting.google.com...
> > Hi.
> >
> > I try to figure out what can be the amplifier that can match the AD9835
> 300
> >
> > ohms output impedance to 50 ohms with a gain of about 8 db at 13.5 Mhz.
> >
> > Is this can be done with a simple transistor or a monolithic amplifier ?

> >
> > I have take look on the net and they always use it unbuffered !
> >
> > Thanks in advance for any information.
> >
> >
> > Gillis
>
>

1527. Re: Sample-and-hold product detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 10:06:20 UTC
From: Heikki Ahola <heikki.ahola@vtt.fi>
Message-ID: <403B221C.5926624F@vtt.fi>
Source record: 28363

W3JDR wrote:

> Heikki,
> I'm not sure exactly what this particular circuit looks like, but I strongly
> suspect it's just a balanced mixer made from 4066 analog switches. I have
> used this technique and it is quite good at low IF frequencies (a few MHz or
> less). Are you sure you have the switches biased properly? The thru-path
> should be biased at about 1/2 of the 4066 DC supply voltage in order to
> avoid severe signal clipping. Can you point to a link where the circuit is
> shown??
>

The circuit can be found in QST Nov 1992 (Recent Advances in Shortwave Receiver Design)! I t is unclear whether only two switches are used or if each switch is actually two in parallel. The biasing should be OK!

73 de Heikki

1528. Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 10:37:16 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <op9m301crht1d03tha0b1ub9d6en9am8km@4ax.com>
Source record: 28364
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Hi,

I'm trying to track down the name for a certain type of oscillator
which I dimly recall seeing in an old book called Radio & Line
Transmission that I bought and lost over 3 decades ago.
In simple terms, it has a crystal in the base/emitter circuit and a
C/L tank for the resonant frequency of the crystal in the collector
circuit. In this way it can't flip into an overtone since it only has
gain at the crystal's fundamental. Anyone know the name for it?

Thanks,

p.

--

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1529. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 11:30:02 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <pscm30lrhuti3m3mnrciqlg1tic24js2ab@4ax.com>
Source record: 28365

On 24 Feb 2004 05:58:24 GMT, averyfineman@aol.com (Avery Fineman)
wrote:

> Heh heh heh, can't say I blame you for being a bit confused.
>
> The "3rd Order" label is due to the mix products of F_a +/- 2F_b
> with F_b being twice its original frequency. "Order" comes from
> the constant multipliers, 1 for F_a and 2 for F_b so "1" + "2" equals
> 3 or the 3rd Order.

[rest snipped]

Thanks, Len. Nice to have a helpful, informative reply.
--

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1530. Re: Sample-and-hold product detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 12:25:21 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <RoH_b.1712$ax2.388@nwrdny03.gnilink.net>
Source record: 28366

Heikki,
I dug this issue out of the archives and looked at the circuit. I'm not surprised that the performance is not real good. This circuit has no balance or switching symmetry. It is a simple half-wave switch which samples the IF at the BFO frequency. The output will have significant energy at the IF frequency as well as the BFO frequency, and these components might be overloading the audio amplifier.

I'd suggest something that has full-balance. You could modify the '4066 circuit to have this property if you could generate 2 opposite phases of the IF and drive them separately into the inputs of the two '4066's. If you set it up right, you will get very large dynamic range.

Alternatively, a traditional double balanced IC circuit such as an NE602 or even a diode DBM will work just fine as long as there is adequate selectivity in front of it to ensure that it is normally working with one IF input signal.

Joe
W3JDR

"Heikki Ahola" <heikki.ahola@vtt.fi> wrote in message
news:403B221C.5926624F@vtt.fi...
>
>
> W3JDR wrote:
>
> > Heikki,
> > I'm not sure exactly what this particular circuit looks like, but I
strongly
> > suspect it's just a balanced mixer made from 4066 analog switches. I
have
> > used this technique and it is quite good at low IF frequencies (a few
MHz or
> > less). Are you sure you have the switches biased properly? The thru-path
> > should be biased at about 1/2 of the 4066 DC supply voltage in order to
> > avoid severe signal clipping. Can you point to a link where the circuit
is
> > shown??
> > >
>
> The circuit can be found in QST Nov 1992 (Recent Advances in Shortwave
Receiver
> Design)! I t is unclear whether only two switches are used or if each
switch is

> actually two in parallel. The biasing should be OK!
>
> 73 de Heikki
>
>
>

1531. Re: Soldering Tips that Heat Very Fast

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 12:35:32 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <SxH_b.1560$jl.540@newsfe1-gui.server.ntli.net>
Source record: 28367

> My all-time favorite soldering tool for small work is the Wahl
> cordless gun with the smallest tip they sell. I believe it is called
> the Wahl Isotip.
==========
Indeed a very nice handy (cordless) soldering iron I have used regularly since the mid 1980s
It is powered by 2 NiCad cells (total 2.4 V). and when not in use sits in a table top charger which is very primitive.
The charger is no more than a tiny transformer with an internal diode.
The problem is that keeping the iron in the powered charger all the time for readiness , there is no control and after some time the batteries get rather warm.
I now have modified the charger by removing the transformer ,fixing the unit on top of a separate plastic box inside which there is a 12 V transformer , small bridge rectifier , 1 electrolytic cap. ,a LM317 used as a constant current device , 2 resistors , 2 LEDs a few diodes and a DPDT front panel switch.

When not in use the switch is in trickle charge position (10 mA) with green LED ON
When the iron is in use the switch is put in normal charge position (approx 300 mA) with red LED ON

3 small diodes in series are always in circuit causing an approx 1.9 V voltage differential ,sufficient to light either LED.
This means that either LED is only ON when the iron is placed in its charger . Hence when the iron is placed in the charger and none of the LEDs are on ,there is a problem (bad charger contacts or blown fuse wire inside iron , the latter an unlikely event since modifying the charger)

I mainly use the fine tip Wahl Clipper Corp. nr 7566 costing US$ 6.75

Over the years I have replaced the batteries twice (before modifying the charger a few months ago)

Note : The fine tip is very handy when working with SMD components.

Frank GM0CSZ / KN6WH

1532. Re: AGC - why delayed? good properties?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 12:56:05 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <05ml30huua9r69hvm49isIldbf5qarin63@4ax.com>
Source record: 28368

On Mon, 23 Feb 2004 21:33:39 -0500, "Tom Holden"
<holden_family@sympatico.ca> wrote:

>
>I seized on the word "delayed" and linked it to the inclusion of a longer
>time constant in the AGC to the RF stages of the DX-394 than the time
>constant in the AGC to the IF stages. The Handbook example actually says "As
>an option, the AGC to the RF amplifier is held off, or 'delayed', by the
>0.6V forward drop of the diode so that the RF gain does not start to
>decrease until larger signals appear. This prevents a premature increase in
>the receiver noise figure. Also, a time constant of one or two seconds after
>this diode helps keep the RF gain steady for the short term."
>
Mentioning a certain voltage level doesn't really make so much sense
when you don't know what the rest of detector stages looks like. Drake
2-B has 5Vpp from 6BA6, and R-4C somewhat less, but not too important.
This is only a reference which may not apply to any other receiver
because it is another AGC amplifier which also amplifies IF to the AM
detector for 2-B, and product detector fed via a voltage divider. For
R-4C everything is totally different, and the 4-5Vpp level seems more
chosen for economical reasons. Another English LF communication
receiver I checked had 80-100V pp IF output. The level to choose
depends on good AGC characteristic, and usually the IF level should be
certain level above the background noise, possibly 10-20dB for good
operation. Some receivers have not particularly good AGC, Atlas 210X
is one, and my Yaesu FT-902 is another, even worse is FT101B because
carrier oscillator leaks into the IF and AGC threshold must be set
10dB above the level you would want it to to start, simply because it
can't operate properly below it.
It was a surprise to learn that the Lorenz 6P203 receiver operated
nicely on SSB when BFO level was increased, in spite that it has only
6AV6 detectors, but IF is split, and it has two different 6BA6's with
different diode detectors, one for AM/CW/SSB and one for AGC.
http://home.online.no/~la8ak/b71.htm
Siemens Rainbow receiver also had some improper connection between
product detector and BFO, and could detect SSB well when this was
corrected http://home.online.no/~la8ak/b72.htm
Heathkit SB300/301 have bad AGC, but may be easily improved a lot by
using 1N4148 AGC detector diodes (voltage doubler), simply because the
original diodes have too much capacitance and do not rectify properly.
I did some experiments using Drake 2-C type and R-4B type AGC
detectors in my Kenwood TS-500, later in 2-B, and could set the
detector output variation from AGC threshold to as little as 1dB, but
it seem no real point since the subjective sound seem best with at

least 6dB variation, but wasn't too important if it was kept as
original 10dB for 2-B, it is only important when you have a lot of
advanced measuring equipment in the shack, but not at all for the
radio operator.

73, LA8AK
>

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

1533. A general test of oscillator stability?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 13:21:38 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <8djm305dvdhsjit8anoqd46iog9k4ni6c5@4ax.com>
Source record: 28369
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

One thing bugs me about building oscillators and that's the
possibility that they may not start in the first place, or else start
fine then somewhere down the line just flip into an overtone or
sub-harmonic for no apparent reason. If only one could physically prod
the circuit around to induce instability but of course that's unlikely
to show up any potential problem. What's needed is some method of
instigating instability to try to show up any latent tendency for any
particular osc to go tits-up and I can only think of one practical way
of precipitating it: varying the power supply voltage.
If one can vary the supply over a fairly wide range and the oscillator
only responds by very small changes in output frequency and doesn't
jerk into another frequency/output mode altogether, is this a
sufficient test on its own of that oscillator's likely stability in
the field?
p.
--

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1534. Re: Suggestions for painting aluminum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 14:00:40 UTC
From: Jilly Bowman <jillian.bowman@ntlworld.com>
Message-ID: <BMI_b.1569$jl.1502@newsfe1-gui.server.ntli.net>
Source record: 28370

"Roger Conroy" <rogerconroy@nospam.hotmail.com> wrote in message
news:c0ckor$o6m$1@ctb-nnrp2.saix.net...
>
> "Bill Turner" <noway@nohow.com> wrote in message
> news:llej20dksr7lf0ganljp0j6peupug9krf6@4ax.com...
> > Does anyone have any suggestions for painting aluminum in a way that
> > will be tougher and longer-lasting than you get with the usual spray
> > can?

Dip it in ferric chloride for a couple of seconds then rinse with water, it will then take paint perfectly. DO NOT LEAVE IT IN TOO LONG AND TAKE CARE. suggest doing this in an open space as it will react much faster than copper.

1535. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 14:10:25 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <IXI_b.395225$na.763604@attbi_s04>
Source record: 28371
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:op9m301crht1d03tha0b1ub9d6en9am8km@4ax.com...
>
> Hi,
>
> I'm trying to track down the name for a certain type of oscillator
> which I dimly recall seeing in an old book called Radio & Line
> Transmission that I bought and lost over 3 decades ago.
> In simple terms, it has a crystal in the base/emitter circuit and a
> C/L tank for the resonant frequency of the crystal in the collector
> circuit. In this way it can't flip into an overtone since it only has
> gain at the crystal's fundamental. Anyone know the name for it?

Why don't you think the crystal goes low impedance at it's odd harmonics? If you'll design the circuit properly, it will give no trouble with overtone operation. Don't remember ever having any problems selecting one to operate on the fundamental, usually, it's selecting between 5th and 7th overtone or 7th and 9th that gets a little sticky.

W4ZCB

1536. Re: A general test of oscillator stability?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 14:47:42 UTC
From: Roy McCammon <rbmccammon@mmm.com>
Message-ID: <403B640E.1000704@mmm.com>
Source record: 28373
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge wrote:
> One thing bugs me about building oscillators and that's the
> possibility that they may not start in the first place, or else start
> fine then somewhere down the line just flip into an overtone or
> sub-harmonic for no apparent reason. If only one could physically prod
> the circuit around to induce instability but of course that's unlikely
> to show up any potential problem. What's needed is some method of
> instigating instability to try to show up any latent tendency for any
> particular osc to go tits-up and I can only think of one practical way
> of precipitating it: varying the power supply voltage.
> If one can vary the supply over a fairly wide range and the oscillator
> only responds by very small changes in output frequency and doesn't
> jerk into another frequency/output mode altogether, is this a
> sufficient test on its own of that oscillator's likely stability in
> the field?
> p.

I don't know, but if you know the frequency of the overtones, try
injecting that frequency. Use a really strong signal so that it
dominates, then switch it off and see if your oscillator snaps back
to the correct frequency.

--
local optimization seldom leads to global optimization

my e-mail address is: <my first name> <my last name> AT mmm DOT com

1537. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 14:48:58 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <AbKA+dAaR2OAFwLa@ddwyer.demon.co.uk>
Source record: 28372
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

In article <lXI_b.395225$na.763604@attbi_s04>, Harold E. Johnson
<W4ZCB@mchsi.com> writes
>
>"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
>news:op9m301crht1d03tha0b1ub9d6en9am8km@4ax.com...
>>
>> Hi,
>>
>> I'm trying to track down the name for a certain type of oscillator
>> which I dimly recall seeing in an old book called Radio & Line
>> Transmission that I bought and lost over 3 decades ago.
>> In simple terms, it has a crystal in the base/emitter circuit and a
>> C/L tank for the resonant frequency of the crystal in the collector
>> circuit. In this way it can't flip into an overtone since it only has
>> gain at the crystal's fundamental. Anyone know the name for it?
>
>Why don't you think the crystal goes low impedance at it's odd harmonics? If
>you'll design the circuit properly, it will give no trouble with overtone
>operation. Don't remember ever having any problems selecting one to operate
>on the fundamental, usually, it's selecting between 5th and 7th overtone or
>7th and 9th that gets a little sticky.
>
>W4ZCB
>
>
A universal series resonant circuit "Butler?" meets most of your
criteria. I dont like these names myself. Collector to +ve supply via
tank LC with the C = 2 C in series the base decoupled to ground with a
potential divider to set base bias and a low value (220R?) in the
emitter to ground.
The crystal goes from the junction of the 2 tapped capacitors and the
emitter. The 2 Cs are arranged to lower the o/p impedance from the
collector tank i.e. the C nearest the collector would be 100pF and the C
to the +ve supply 330pF. With the LC arranged to resonate at the crystal
frequency.
The beauty of the circuit is that the crystal can be replaced by a 50R
resistor and the circuit L and C tweaked to oscillate at the crystal
freq. Can be used to select overtone or fundamental.

--
ddwyer

1538. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 15:29:43 UTC
From: Rick Karlquist N6RK <richard@karlquist.removethis.com>
Message-ID: <D5K_b.113451$jk2.502124@attbi_s53>
Source record: 28374
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

You're probably thinking of the oscillator that Marv Frerking
called a "grounded-base oscillator". I have seen it called other
names as well. Basically, what you do is first build an LC
(ie no xtal) Colpitts oscillator and tune it to the crystal frequency
you want to eventually use. Then insert a resistor of a few
dozen ohms in series with the emitter. Now, readjust the feedback
capacitors on the oscillator to get it to oscillate OK with the resistor.
Finally, replace the resistor with a series resonant crystal.
It will be forced to oscillate at the frequency of the original LC
oscillator, since there is no gain anywhere else. Thus you can
design for either the fundamental or a specific harmonic and like
you say it can't flip to a different overtone. For more details,
read one of Frerking's books.

Rick N6RK

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:op9m301crht1d03tha0b1ub9d6en9am8km@4ax.com...
>
> Hi,
>
> I'm trying to track down the name for a certain type of oscillator
> which I dimly recall seeing in an old book called Radio & Line
> Transmission that I bought and lost over 3 decades ago.
> In simple terms, it has a crystal in the base/emitter circuit and a
> C/L tank for the resonant frequency of the crystal in the collector
> circuit. In this way it can't flip into an overtone since it only has
> gain at the crystal's fundamental. Anyone know the name for it?
>
> Thanks,
>
> p.
>
> --
>
> The BBC: Licensed at public expense to spread lies.

1539. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 16:02:23 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <jAK_b.4660$AL.129361@attbi_s03>
Source record: 28375
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

> You're probably thinking of the oscillator that Marv Frerking
> called a "grounded-base oscillator".

Alternatively, take a look at the Butler design by John Stephensen in November/December 1999 QEX. He explains clearly why folks ever had problems with Butlers and better yet, how to cure them. I've used this circuit (without the Varactor tuning) on 9th overtone oscillators using hound dog crystals.

W4ZCB

1540. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 17:09:37 UTC
From: Spehro Pefhany <"Spehro Pefhany">
Message-ID: <dn1n3010g79hf300bl199r7ldd8n9b40s2@4ax.com>
Source record: 28376
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 24 Feb 2004 16:02:23 GMT, the renowned "Harold E. Johnson"
<W4ZCB@mchsi.com> wrote:

>
>> You're probably thinking of the oscillator that Marv Frerking
>> called a "grounded-base oscillator".
>
>Alternatively, take a look at the Butler design by John Stephensen in
>November/December 1999 QEX. He explains clearly why folks ever had problems
>with Butlers and better yet, how to cure them. I've used this circuit
>(without the Varactor tuning) on 9th overtone oscillators using hound dog
>crystals.
>W4ZCB

What's a "hound dog crystal"?

How to deal with butlers:
http://etext.library.adelaide.edu.au/b/beeton/household/chapter41.html

Best regards,
Spehro Pefhany
--
"it's the network..." "The Journey is the reward"
speff@interlog.com Info for manufacturers: http://www.trexon.com
Embedded software/hardware/analog Info for designers: http://www.speff.com

1541. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 17:45:51 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <j5M_b.5335$AL.133044@attbi_s03>
Source record: 28377
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

> What's a "hound dog crystal"?
>
> How to deal with butlers:
> http://etext.library.adelaide.edu.au/b/beeton/household/chapter41.html
>
>
> Best regards,
> Spehro Pefhany

Thanks Spehro. Delightful! I wondered what it had to do with things until down the page a bit.

Sorry for the lack of definition, I was referring to crystals not specifically treated to enhance overtone operation. When a manufacturer makes a crystal for overtone use, he/she treats it to suppress spurious responses close by the desired overtone so the crystal "likes" to operate properly. An untreated crystal often will have those responses and oscillate on one or more of them instead of the desired frequency unless the feedback and tuned circuit are carefully managed to ignore them. The higher impedance of Stephensens schematic make that a bit easier to do.

Regards

W4ZCB

1542. Re: A general test of oscillator stability?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 17:48:36 UTC
From: Kevin Aylward <kevindotaylwardEXTRACT@anasoft.co.uk>
Message-ID: <V7M_b.142$5w6.125@newsfep3-gui.server.ntli.net>
Source record: 28378
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge wrote:
> One thing bugs me about building oscillators and that's the
> possibility that they may not start in the first place, or else start
> fine then somewhere down the line just flip into an overtone or
> sub-harmonic for no apparent reason.

Yes. This area is all about limit cycles, attracters, and such like, in
non-linear equations.

>If only one could physically prod
> the circuit around to induce instability but of course that's unlikely
> to show up any potential problem. What's needed is some method of
> instigating instability to try to show up any latent tendency for any
> particular osc to go tits-up and I can only think of one practical way
> of precipitating it: varying the power supply voltage.

There is no general solution to non-linear equations. One can only use
experience and brute force by trying the usual suspects.

> If one can vary the supply over a fairly wide range and the oscillator
> only responds by very small changes in output frequency and doesn't
> jerk into another frequency/output mode altogether, is this a
> sufficient test on its own of that oscillator's likely stability in
> the field?

One tries varying components and the PS and hopes for the best:-)

Kevin Aylward
salesEXTRACT@anasoft.co.uk
http://www.anasoft.co.uk
SuperSpice, a very affordable Mixed-Mode
Windows Simulator with Schematic Capture,
Waveform Display, FFT's and Filter Design.

"That which is mostly observed, is that which replicates the most"
http://www.anasoft.co.uk/replicators/index.html

"quotes with no meaning, are meaningless" - Kevin Aylward.

1543. Re: HELP with finding ARRL Handbook Filter circuit please

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 18:03:55 UTC
From: nospam_ronayling@hotmail.com
Message-ID: <403b9142.33495702@news.freeserve.co.uk>
Source record: 28379

Hi Thanks everyone for the circuits
and info, I've just constructed the
modified Selectoject circuit and most
impressed!! I shall eventually try them
all, great fun, thanks
from Ron g3yuh..

1544. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 18:52:12 UTC
From: k7itm@aol.com
Message-ID: <3200347.0402241052.57b23e59@posting.google.com>
Source record: 28380

averyfineman@aol.com (Avery Fineman) wrote in message
news:<20040224005823.07155.00000909@mb-m06.aol.com>...

> Unsymmetric digital signals haven't been found to have much more
> even harmonic content than odd harmonit content when viewed on a
> spectrum analyzer...until the digital signal pulse width is VERY
> short compared to its repetition time.

Huh? Try a 1/3 -- 2/3 ratio. NO third harmonic (or sixth or ninth, etc); second is the greatest amplitude harmonic at fully 1/2 the fundamental amplitude. Fourth is larger than the fifth. For a symmetric square wave, there's no second and the third is only 1/3 the amplitude of the fundamental. Easy to verify with a spectrum analyzer or through a Fourier series. As the pulse width goes to zero, the fundamental and all harmonics go to equal amplitudes. At 5% pulse width, for example, the harmonic amplitudes decrease monotonically as harmonic number increases, out to the twentieth, which is a null, but even the 12th is fully 50% of the fundamental.

This is useful info if you're trying to design a simple amplifier-type doubler; adjusting the conduction angle to approximately 1/3 will give you lots of second but little third, making it easier to filter the output. But if you weren't thinking about it and tried to make a tripler, and accidentally made your conduction angle 1/3, you might wonder why you were having so much trouble getting good tripler efficiency.

Cheers,
Tom

1545. Re: A general test of oscillator stability?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 19:19:07 UTC
From: averyfineman@aol.com
Message-ID: <20040224141907.05957.00000645@mb-m26.aol.com>
Source record: 28381

In article <8djm305dvdhsjit8anoqd46iog9k4ni6c5@4ax.com>, Paul Burridge <pb@osiris1.notthisbit.co.uk> writes:

>If one can vary the supply over a fairly wide range and the oscillator
>only responds by very small changes in output frequency and doesn't
>jerk into another frequency/output mode altogether, is this a
>sufficient test on its own of that oscillator's likely stability in
>the field?

Normally...but it may not satisfy everyone in here. :-)

What should be done in oscillator design is to make the minimum gain through the feedback path - under all environment conditions, including variation in supply rails (filament voltage if tubes) and even component tolerances and tolerance changes - above unity by a fraction. Then the opposite environment conditions should be examined and the gain through the feedback path analyzed to see if it exceeds unity to much. Too much gain might overdrive a quartz crystal unit or generate harmonic garbage or whatever else might be a no-no.

Once the above is satisfied, the prototype is then subjected to actual environment changes, again everything from temperature, shock, vibration, supply voltage, etc., etc., while measuring the oscillation frequency changes with each environment condition. To go really deep into that, one might get a number of active devices with varying tested specifications and try them...but that would only be for large production runs of the same thing.

If the frequency stays within the desired limits, it passes! Yay! :-)

In too much hobby work, someone grabs a schematic from some publication and copies it, but usually with some parts changes ("for convenience") and hopes it will work. Sometimes it does. Sometimes not. :-)

Oscillators are actually a rather complex subject and take time to get working within all the desired specifications. Before SPICE and the ability to model ALL the various things in a circuit, all analysis had to be done open-loop. The loop (for feedback) could only be closed on the bench. That work was a real #$%^&!!!!

The best text I have on oscillators is a rare, little-known NTIS-distribution contract report, AD 460 377, "Quartz Crystal Oscillator Circuits Design Handbook," prepared by D. Firth at Magnavox Company, Fort Wayne, Indiana, under contract to U.S. Army Electronics Command, Fort Monmouth. It was obtained mail-order

in 1985 from the National Technical Information Service (NTIS) from
the U.S. Department of Commerce. Cost $8.20 for 478 pp, Xeroxed
on 8 1/2 x 11 inch paper. Original contract completion date is given
as 15 March 1965. [yes, transistors were around back then...:-)]

"D. Firth" (name sounds very familiar) covered the whole gamut of
oscillator frequencies from 1 KHz (!) on up to 200 MHz, showed the
gain-impedance analysis of the feedback loop, and working units
done for actual environmental test and the test results which
included variations in not only supply voltage but also component
tolerances of each test unit! Marvelously complete report...can be
an example of how-to-do-it for anyone, including hobbyists who are
very fussy about their oscillator circuits, especially quartz crystals.
It's also a good tutorial that goes deep into circuit theory for
oscillators.

I'm NOT saying everyone ought to get that publication. There's lots
of good information around and a lot of that free (for quartz oscillators)
at the various quartz crystal makers' sites. Basic information on
oscillators, types, etc., is in lots of places and publications. The
final word on oscillator performance is its frequency stability over a
hobbyist-designated total environment.

Accuracy of a frequency measuring device to measure that oscillator
frequency is quite another thing. :-)

Len Anderson
retired (from regular hours) electronic engineer person

1546. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 19:26:22 UTC
From: Jim Thompson <thegreatone@example.com>
Message-ID: <739n30dcaulvjmb054eqvsd5bql7dklugq@4ax.com>
Source record: 28383
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 24 Feb 2004 15:29:43 GMT, "Rick Karlquist N6RK"
<richard@karlquist.removethis.com> wrote:

>You're probably thinking of the oscillator that Marv Frerking
>called a "grounded-base oscillator". I have seen it called other
>names as well. Basically, what you do is first build an LC
>(ie no xtal) Colpitts oscillator and tune it to the crystal frequency
>you want to eventually use.
[snip]

Sounds like an oscillator that I've used since the '60's for my G-jobs
(you know, the ones that *have* to work, 'cause they're for me :).

See "XtalSeriesOsc.pdf" on the S.E.D/Schematics page of my website.

I've never been able to get any custom IC customers to use it, since
it takes three pins, but it works, period, no messy matching issues,
even handles overtone modes.

...Jim Thompson
--
James E.Thompson, P.E.	mens
Analog Innovations, Inc.	et
Analog/Mixed-Signal ASIC's and Discrete Systems	manus
Phoenix, Arizona Voice:(480)460-2350	
E-mail Address at Website Fax:(480)460-2142	Brass Rat
http://www.analog-innovations.com	1962

I love to cook with wine. Sometimes I even put it in the food.

1547. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 19:30:12 UTC
From: Jim Thompson <thegreatone@example.com>
Message-ID: <ke9n305ts76fjtjfdsbcglte8nds0a6cjv@4ax.com>
Source record: 28384
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 24 Feb 2004 12:26:22 -0700, Jim Thompson
<thegreatone@example.com> wrote:

>On Tue, 24 Feb 2004 15:29:43 GMT, "Rick Karlquist N6RK"
><richard@karlquist.removethis.com> wrote:
>
>>You're probably thinking of the oscillator that Marv Frerking
>>called a "grounded-base oscillator". I have seen it called other
>>names as well. Basically, what you do is first build an LC
>>(ie no xtal) Colpitts oscillator and tune it to the crystal frequency
>>you want to eventually use.
>[snip]
>
>Sounds like an oscillator that I've used since the '60's for my G-jobs
>(you know, the ones that *have* to work, 'cause they're for me :).
>
>See "XtalSeriesOsc.pdf" on the S.E.D/Schematics page of my website.
>
>I've never been able to get any custom IC customers to use it, since
>it takes three pins, but it works, period, no messy matching issues,
>even handles overtone modes.
>
> ...Jim Thompson

Aha! I just noted from Paul's post that "my" oscillator is called a
two-transistor Butler. Wonder when that was conceived? I've been
using the my direct-coupled version for 40 years.

...Jim Thompson
--
James E.Thompson, P.E.	mens
Analog Innovations, Inc.	et
Analog/Mixed-Signal ASIC's and Discrete Systems	manus
Phoenix, Arizona Voice:(480)460-2350	
E-mail Address at Website Fax:(480)460-2142	Brass Rat
http://www.analog-innovations.com	1962

I love to cook with wine. Sometimes I even put it in the food.

1548. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 19:31:30 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <ng9n30hq2l9l1oqsvimfekpogdr211ncf1@4ax.com>
Source record: 28382
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 24 Feb 2004 17:45:51 GMT, "Harold E. Johnson"
<W4ZCB@mchsi.com> wrote:

>Sorry for the lack of definition, I was referring to crystals not
>specifically treated to enhance overtone operation. When a manufacturer
>makes a crystal for overtone use, he/she treats it to suppress spurious
>responses close by the desired overtone so the crystal "likes" to operate
>properly. An untreated crystal often will have those responses and oscillate
>on one or more of them instead of the desired frequency unless the feedback
>and tuned circuit are carefully managed to ignore them.

The following link is worth checking out as an overview....

http://www.icmfg.com/crystaloscillatordata.html
--

The BBC: Licensed at public expense to spread lies.

1549. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 20:26:33 UTC
From: averyfineman@aol.com
Message-ID: <20040224152633.29660.00003171@mb-m24.aol.com>
Source record: 28385

In article <3200347.0402241052.57b23e59@posting.google.com>, k7itm@aol.com (Tom Bruhns) writes:

>averyfineman@aol.com (Avery Fineman) wrote in message
>news:<20040224005823.07155.00000909@mb-m06.aol.com>...
>
>> Unsymmetric digital signals haven't been found to have much more
>> even harmonic content than odd harmonit content when viewed on a
>> spectrum analyzer...until the digital signal pulse width is VERY
>> short compared to its repetition time.
>
>Huh? Try a 1/3 -- 2/3 ratio. NO third harmonic (or sixth or ninth,
>etc); second is the greatest amplitude harmonic at fully 1/2 the
>fundamental amplitude. Fourth is larger than the fifth. For a
>symmetric square wave, there's no second and the third is only 1/3 the
>amplitude of the fundamental. Easy to verify with a spectrum analyzer
>or through a Fourier series. As the pulse width goes to zero, the
>fundamental and all harmonics go to equal amplitudes. At 5% pulse
>width, for example, the harmonic amplitudes decrease monotonically as
>harmonic number increases, out to the twentieth, which is a null, but
>even the 12th is fully 50% of the fundamental.

Thank you, Tom...but I've done the "SineX over X" thing a few times already and looked at a lot of spectral displays. Even wrote a computer program or three to determine the harmonic content of various arbitrary-shaped defined waveforms (two for corporate use, one in a shareware/freeware package).

The first null of ALL harmonics occurs at frequencies at the inverse of the repetition time of the waveform. That turns out to be fairly true for any waveform, not just a pulse. Trouble is, the harmonic content NOT at the major null increments varies considerably in actual practice since the source of RF being multiplied varies in shape in actual practice.

Discussing harmonic content is so much bafflegab without first defining the source's waveform shape...even if to coarse levels of square wave versus sinusoid versus pulse or whatever.

The kickoff message to this thread started with "square wave" and all I did was further refine that to symmetical square wave. You aren't going to tell me there's a lot of even harmonic energy in a symmetric square wave because I can set it up on the bench and demonstrate it doesn't. Practical test versus theoretical and results match.

I once managed to phase-lock a pulse generator in order to key
on a signal generator output for exactly ONE RF cycle (35 db on-
off ratio). Interesting broad spectral content, way wide almost
like an SRD output. Impractical, of course, was to satisfy a
couple of others arguing the whichness or the what one day. :-)

>This is useful info if you're trying to design a simple amplifier-type
>doubler; adjusting the conduction angle to approximately 1/3 will give
>you lots of second but little third, making it easier to filter the
>output. But if you weren't thinking about it and tried to make a
>tripler, and accidentally made your conduction angle 1/3, you might
>wonder why you were having so much trouble getting good tripler
>efficiency.

Well, I'm not wondering at all since I haven't built any vacuum tube
or FET active multipliers, just the bipolar transistor types that don't
quite fit into the old "conduction angle" simple rules.

Correction: Built a tube crystal oscillator (6AK6) that doubled or
tripled (as desired by tuning) to be the LO for a 6BE6 pentagrid
running at external LO injection. Behaved like a fundamental
crystal oscillator that doubled or trippled in the plate. That was
around 1960 and didn't have the tools to check waveforms on my
lunch hours. :-) Just played with it until it worked...and had
enough LO injection to run the pentagrid at good conversion
transconductance.

Why bother to use frequency multiplier stages NOW when PLLs
and DDSs can have oscillators at their fundamental and those can
be divided down with available parts to a low, stable lock frequency?
It's fine for restoring antiques to use lots of multipliers, but, let's
face it, those can be a pain in the expletive deleted to recreate now.
Others' mileage varies, of course.

I mentioned a simple two-diode "full-wave" doubler because it is an
easy thing to implement and is broadband to start with...no fussing
with tuned-circuit impedances at the start to make it work with a
non-square source waveform. It may not be as efficient as some
would like but it is easy to do compared to direct active doublers.

Len Anderson
retired (from regular hours) electronic engineer person

1550. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 20:27:18 UTC
From: Gary Morton <gary@alma.demon.co.uk>
Message-ID: <GsO_b.1355$oQ6.11900965@news-text.cableinet.net>
Source record: 28386

Jim Thompson wrote:
> On Tue, 24 Feb 2004 15:29:43 GMT, "Rick Karlquist N6RK"
> <richard@karlquist.removethis.com> wrote:
>
>
>>You're probably thinking of the oscillator that Marv Frerking
>>called a "grounded-base oscillator". I have seen it called other
>>names as well. Basically, what you do is first build an LC
>>(ie no xtal) Colpitts oscillator and tune it to the crystal frequency
>>you want to eventually use.
>
> [snip]
>
> Sounds like an oscillator that I've used since the '60's for my G-jobs
> (you know, the ones that *have* to work, 'cause they're for me :).
>
> See "XtalSeriesOsc.pdf" on the S.E.D/Schematics page of my website.
>
> I've never been able to get any custom IC customers to use it, since
> it takes three pins, but it works, period, no messy matching issues,
> even handles overtone modes.
>
> ...Jim Thompson

This pdf schematic looks very similar, except for the crystal and emitter part, to a circuit described in "Experimental Methods in RF Design" (p4.13).

The circuit is described as "worth building.....to observe first hand just what a noisy oscillator will sound like in a receiver".

Earlier in the same chapter it appears in figure 4.13 as a type of negative resistance one port oscillator.

I can only assume that the changes and crystal (in the circuit shown in the pdf) solve the problem of the "noisy" LC only configuration.

I mention it as I built it up last night and took it into work today in order to have a look at the output on a spectrum analyser. Output was quite low at -27dBm. Sadly the HP kit couldn't measure phase noise directly, and I didn't have a good crystal oscillator to check it against.

We were uncertain regarding the configuration too, but my colleague worked out that it had severe voltage limiting features and predicted the output swing quite accurately before it was measured on a scope.

Last night I tried it with a number of inductors from the junk box and it oscillated quite readily from 114MHz down to 5MHz. I quite like the use of a non tapped L and only a single C. Shame about the phase noise :-(.

regards...

--Gary

1551. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 20:48:13 UTC
From: John Jardine <john@jjdesigns.fsnet.co.uk>
Message-ID: <c1gcuh$9nh$1@newsg1.svr.pol.co.uk>
Source record: 28387
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Jan-Martin Noeding, LA8AK <la8ak@online.no> wrote in message
news:bg9l30pesgu6nb4j6p168od1h8rtjups3q@4ax.com...
> On Mon, 23 Feb 2004 16:12:55 -0700, Jim Thompson
> <thegreatone@example.com> wrote:
>
>
> > >It's only an "uncommon abbreviation" to certain Brits who think they
> > >can learn by insulting the masters ;-)
> > >
> > >Look up 3rd order intercept point.
> > >
> > > ...Jim Thompson
>
> thought everybody had studied Ham Radio December 77 throughly - even
> in UK.....
> 73 ex-G5BFV (at BPO radio station Bearley/SOA)
>
> ----
> Jan-Martin, LA8AK, N-4623 Kristiansand
> http://home.online.no/~la8ak/

That's a helluva web site you keep there :-)
Impressive!

regards
john

1552. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 21:00:57 UTC
From: k7itm@aol.com
Message-ID: <3200347.0402241300.5836f7ce@posting.google.com>
Source record: 28388

Just did an interesting little 'speriment. Standard diode "full wave rectifier" frequency doubler. Transformer is 16 trifilar turns on an FT50-43 core (should be a bit more than 50uH per section). One of the triplet is the primary, and the other two are connected as a center-tapped secondary. The diodes are 1N4007 -- yep, the 1kV mains-freq rectifiers. Excitation comes from an HP3326, set to square wave output, source impedance 50 ohms. 50 ohm load impedance on the doubler output (input to spectrum analyzer; DC coupled load). HP3326 square wave risetime is about 10 nanoseconds, I believe. Excite at 0.5MHz, +/-2V (4Vp-p) Output waveform observed on a fast scope is frequency-doubled, close to 50% duty cycle, with fast falling edges and slow (200nsec) rising edges. Amplitude about 2Vp-p. Strong spectral output on all even harmonics; all odds suppressed about 20dB from the low evens, and I'm sure would be much lower with better matching of the diodes.

Explanation left as an exercise for the reader, but should be obvious from previous discussion here. I'd guess 1N4148-type diodes would behave similarly for an input around 100MHz.

Cheers,
Tom

k7itm@aol.com (Tom Bruhns) wrote in message news:<3200347.0402211939.5e87da08@posting.google.com>...
> averyfineman@aol.com (Avery Fineman) wrote in message news:<20040221144723.07155.00000858@mb-m06.aol.com>...
> > > ... Suffice to say
> > > that a square wave cannot be used with a passive diode doubler; all
> > > the energy is contained in the short transition times and that is rarely
> > > enough to be worth it.
> >
> > ?? Lots of energy in the fundamental; filter to extract the
> > fundamental and feed it to your full-wave rectifier doubler.
> > Efficiency can be high if the filter does not cause dissipation in the
> > source at the harmonics.

1553. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 21:31:06 UTC
From: ChipS <spike@vollyball.net>
Message-ID: <403bc468_3@corp.newsgroups.com>
Source record: 28389

"W3JDR" <joe@roccis.com> wrote in message
news:bbJYb.33404$M8.13845@nwrdny02.gnilink.net...
> Take a look at Analog Devices' line of DDS chips. Pretty much a one-chip
> (needs ucontroller to drive it) digital solution to turn your 10MHz clock
> into virtually any frequency below 5 MHz (in theory; below 4MHz in easy
> practicality). The AD9834 only consumes 20mw at 3.3 VDC. There are many
> other devices in the product line. Many have built-in comparators to
produce
> square-wave output.
>
> Joe
> W3JDR
>
>

Joe, I'd gladly use the Analog Devices DDS chips if they offered them in something other than a SadoMasochistic Device (SMD) package. It's a darn shame they can't make a limited run (say 10k) of some of these chips in a PDIP package for hams and other r.f. experimenters.

If they put the AD9835 in a PDIP and sold it for about $10.00 (the TSSOP packaged version sells for about $6, I think) , I'd buy a dozen for various projects, but in the tiny SMD package they're nothing but useless to me.

I'm new to the newsgroup and am sure that this is not the first gripe about SMD's, but I refuse to use them - not because I can't (at least not yet), but because I don't want to endure the angst.
--
Chip
KC5UES
real E-mail Address:
trilby1989@yahoo.com

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

1554. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 21:50:20 UTC
From: dplatt@radagast.org
Message-ID: <103nhosphlb824c@corp.supernews.com>
Source record: 28390

>If they put the AD9835 in a PDIP and sold it for about $10.00 (the TSSOP
>packaged version sells for about $6, I think) , I'd buy a dozen for various
>projects, but in the tiny SMD package they're nothing but useless to me.
>
>I'm new to the newsgroup and am sure that this is not the first gripe about
>SMD's, but I refuse to use them - not because I can't (at least not yet),
>but because I don't want to endure the angst.

Sounds like a good opportunity for an enterprising ham - fab up a
bunch of adapter boards (or buy 'em premade - I think Ares has
something like this), solder down the SMD parts, and sell the
resulting PDIP-compatible boards to interested homebrewers.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

1555. Re: high quality graph of nice 0-100 analog scale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 21:52:10 UTC
From: n1jpr@hotmail.com
Message-ID: <95a201e0.0402241352.4ef19de7@posting.google.com>
Source record: 28391

Thank you everyone!

I haven't tried "Meter", but "Dial" already made me the proud owner of a nicely printed 0-100 linear scale.

Question: I had to do a screen capture and print via IrfanView, as the Radius setting had no effect on the printed size. Did I do something wrong?

(However, using the screen capture, the result is excellent!)

Re. log scale: don't you get any serious problems with fine rendering / printing? My PC/Video/printer work very well with Meter + IrfanView, but I can't get anything decent out of Excel/Open Office, as both approximate fine divisions too roughly for any practical use, even when doing HUGE pie charts.

Thanks again, sooner or later I'll post pics of the new rig.

It will (should) be a broad tuning-range HF regen with a highly repositionable, crystal referenced bandspread (either one generic 0-100 linear scale with tuning graph book, or perhaps a series of slide-in tuning cards, both so cutely retro!) plus switchable wide/phone/CW audio bandpass filtering, and a few other tricks.

Also, by the way, do you know of anyone using a film scale + lamp + lens to PROJECT the tuning scale in a homemade device? This would be sooo cooool! I'd even be tempted to print in the names of a selection of broadcasters, coastal stations, nets, QPR windows, USN fax, GCSS, whatever....

Spammy

1556. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 21:55:23 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <yBus4UALh8OAFwtF@ddwyer.demon.co.uk>
Source record: 28392
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

In article <j5M_b.5335$AL.133044@attbi_s03>, Harold E. Johnson
<W4ZCB@mchsi.com> writes
>
>
>> What's a "hound dog crystal"?
>>
>> How to deal with butlers:
>> http://etext.library.adelaide.edu.au/b/beeton/household/chapter41.html
>>
>>
>> Best regards,
>> Spehro Pefhany
>
>
>
>Thanks Spehro. Delightful! I wondered what it had to do with things until
>down the page a bit.
>
>Sorry for the lack of definition, I was referring to crystals not
>specifically treated to enhance overtone operation. When a manufacturer
>makes a crystal for overtone use, he/she treats it to suppress spurious
>responses close by the desired overtone so the crystal "likes" to
operate
>properly. An untreated crystal often will have those responses and
oscillate
>on one or more of them instead of the desired frequency unless the
feedback
>and tuned circuit are carefully managed to ignore them. The higher
>impedance of Stephensens schematic make that a bit easier to do.>

The special techniques were as follows:
Optimise the plating thickness for the overtone and also the electrode
diameter.
Shear mode crystals have a controlled relationship between the resonant
frequency under the electrode and the frequency away from the
electroded region.

Also higher overtones are better polished and more sensitive to
parallelism.

Overtones pull less approx pulling of fundimental/overtone number
squared.

--
ddwyer

1557. Re: A general test of oscillator stability?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 22:07:32 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <yxlsEiAks8OAFwO0@ddwyer.demon.co.uk>
Source record: 28393

In article <20040224141907.05957.00000645@mb-m26.aol.com>, Avery Fineman
<averyfineman@aol.com> writes
>In article <8djm305dvdhsjit8anoqd46iog9k4ni6c5@4ax.com>, Paul Burridge
><pb@osiris1.notthisbit.co.uk> writes:
>
>>If one can vary the supply over a fairly wide range and the oscillator
>>only responds by very small changes in output frequency and doesn't
>>jerk into another frequency/output mode altogether, is this a
>>sufficient test on its own of that oscillator's likely stability in
>>the field?
> Len Anderson
> retired (from regular hours) electronic engineer person

Earned a good living designing (fairly) reliable crystal oscillators for
many years.
The enemy is excess gain or not enough gain.
For non series res designs like Coulpitts/Pierce I always establish a
negative resistance across the crystal that is 3X the max specified
crystal ESR.
See Telequarz app note now Corning)
Or read my orig? Wireless World paper (1968:))

For overtones use the resistor substitute method (one or two transistor
Butler) and ensure again that the osc will go with 3X the ESR.
Note the phase shift osc can be converted to series by adding sufficient
L in series with the crystal to establish zero phase.

Higher overtone may need the crystal C0 tuning out.

--
ddwyer

1558. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 22:39:26 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <yoQ_b.4037$f61.579@nwrdny02.gnilink.net>
Source record: 28394

Chip,
I totally agree with you about the difficulty in handling fine-pitch SMD parts. It's a sign of the times.

FYI, check out the DDS Daughterboard at www.njqrp.org. This is a DDS application board kit with on-board clock oscillator (you could run it from an external oscillator if you wish). There's also a link to a service that will solder your DDS chip to your bare board for $6 in single quantities.

Joe
W3JDR

"ChipS" <spike@vollyball.net> wrote in message
news:403bc468_3@corp.newsgroups.com...
>
> "W3JDR" <joe@roccis.com> wrote in message
> news:bbJYb.33404$M8.13845@nwrdny02.gnilink.net...
> > Take a look at Analog Devices' line of DDS chips. Pretty much a one-chip
> > (needs ucontroller to drive it) digital solution to turn your 10MHz
clock
> > into virtually any frequency below 5 MHz (in theory; below 4MHz in easy
> > practicality). The AD9834 only consumes 20mw at 3.3 VDC. There are many
> > other devices in the product line. Many have built-in comparators to
> produce
> > square-wave output.
> >
> > Joe
> > W3JDR
> >
> >
>
> Joe, I'd gladly use the Analog Devices DDS chips if they offered them in
> something other than a SadoMasochistic Device (SMD) package. It's a darn
> shame they can't make a limited run (say 10k) of some of these chips in a
> PDIP package for hams and other r.f. experimenters.
>
> If they put the AD9835 in a PDIP and sold it for about $10.00 (the TSSOP
> packaged version sells for about $6, I think) , I'd buy a dozen for
various
> projects, but in the tiny SMD package they're nothing but useless to me.
>
> I'm new to the newsgroup and am sure that this is not the first gripe
about
> SMD's, but I refuse to use them - not because I can't (at least not yet),
> but because I don't want to endure the angst.

> --
> Chip
> KC5UES
> real E-mail Address:
> trilby1989@yahoo.com
>
>
>
>
>
>
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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1559. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 23:04:19 UTC
From: SWbeginner <SWbeginner@nowhere.com>
Message-ID: <103nm3j3jh2q18@corp.supernews.com>
Source record: 28395
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

How high can the 74HC4066 as mixer go?
I need 50Mhz tops.

I still like to know how strong dual gate MOSFET is compared to say diode ring.

thx

1560. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 23:07:59 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <103nmad4ou82e93@corp.supernews.com>
Source record: 28396

"ChipS" <spike@vollyball.net> wrote in message
news:403bc468_3@corp.newsgroups.com...
>
> "W3JDR" <joe@roccis.com> wrote in message
> news:bbJYb.33404$M8.13845@nwrdny02.gnilink.net...
> > Take a look at Analog Devices' line of DDS chips. Pretty much a one-chip
> > (needs ucontroller to drive it) digital solution to turn your 10MHz
clock
> > into virtually any frequency below 5 MHz (in theory; below 4MHz in easy
> > practicality). The AD9834 only consumes 20mw at 3.3 VDC. There are many
> > other devices in the product line. Many have built-in comparators to
> produce
> > square-wave output.
> >
> > Joe
> > W3JDR
> >
> >
>
> Joe, I'd gladly use the Analog Devices DDS chips if they offered them in
> something other than a SadoMasochistic Device (SMD) package. It's a darn
> shame they can't make a limited run (say 10k) of some of these chips in a
> PDIP package for hams and other r.f. experimenters.
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> If they put the AD9835 in a PDIP and sold it for about $10.00 (the TSSOP
> packaged version sells for about $6, I think) , I'd buy a dozen for
various
> projects, but in the tiny SMD package they're nothing but useless to me.
>
> I'm new to the newsgroup and am sure that this is not the first gripe
about
> SMD's, but I refuse to use them - not because I can't (at least not yet),
> but because I don't want to endure the angst.
> --
> Chip
> KC5UES
> real E-mail Address:
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>

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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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In the case of RF devices like DDS's and high-performance microprocessors (you think 1GHz isn't RF?) the surface mount package significantly enhances performance. I haven't found them to be that bad to work with; you just need good eyes and a steady hand.

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

1561. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 23:33:35 UTC
From: R J Carpenter <rcarpen@erols.com>
Message-ID: <403bdf3d$0$3075$61fed72c@news.rcn.com>
Source record: 28247

"ChipS" <spike@vollyball.net> wrote in message
news:403bc468_3@corp.newsgroups.com...
>
> "W3JDR" <joe@roccis.com> wrote in message
> news:bbJYb.33404$M8.13845@nwrdny02.gnilink.net...
> > Take a look at Analog Devices' line of DDS chips. Pretty much a one-chip
> > (needs ucontroller to drive it) digital solution to turn your 10MHz
clock
> > into virtually any frequency below 5 MHz (in theory; below 4MHz in easy
> > practicality). The AD9834 only consumes 20mw at 3.3 VDC. There are many
> > other devices in the product line. Many have built-in comparators to
> > produce> square-wave output.

While blasts from the past, let me remind you of the CD4059 and the much faster 74HC/HCT4059. The 74-series parts guarantee operation on inputs as high as 20 MHz. "typically" as high as 50 MHz. These will divide by any binary value from 3 to 2^16 or even as high as 21327 with some gaps.

The division ratio is set by 16 external pins plus some configuration pins (24-pin DIP package).

The rub is that the part is very rare these days. I suppose discontinued.

1562. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 23:36:03 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <DdR_b.5972$ZV1.3397@nwrdny01.gnilink.net>
Source record: 28248

Yes Tim, I agree. Unfortunately, the physics of RF favors "small" and "compact". This is the price we pay for such high performance. It's not yet to the point where it's a 'show stopper' for experimenters, but you have to be increasingly resourceful and persistent. Many have dropped out of hombrewing at a time when the possibilities are most exciting, merely because they can't or won't adapt to the new packaging technologies and the need to learn a little about firmware programming in order to make the new generation of parts work. It's not that they "can't" learn, it's mostly that they "won't" learn.

Joe
W3JDR

> In the case of RF devices like DDS's and high-performance microprocessors
> (you think 1GHz isn't RF?) the surface mount package significantly
enhances
> performance. I haven't found them to be that bad to work with; you just
> need good eyes and a steady hand.
>
>
> ---------------------------------------
> Tim Wescott
> Wescott Design Services
> http://www.wescottdesign.com
>
>

1563. Re: Soldering Tips that Heat Very Fast

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 23:41:06 UTC
From: Allan Butler <ka0ies@hotmail.com>
Message-ID: <miR_b.8126$AL.154115@attbi_s03>
Source record: 28249

Martin McCormick wrote:

> As a ham who happens to be blind, I have been soldering for
> near 40 years. Yes, it certainly can be done, but it works best if
> one does a few things differently.
>
> One thing that helps a lot is if the soldering appliance such
> as a soldering gun heats very fast. This lets you position everything
> safely without burning either fingers or the work before applying
> heat.
>
> The first soldering I ever did was with a Weller gun. They do
> heat relatively fast and let you put the tip where it needs to be just
> as you pull the trigger.
>
> My all-time favorite soldering tool for small work is the Wahl
> cordless gun with the smallest tip they sell. I believe it is called
> the Wahl Isotip.
>
> This brings me to my question. Is there anything else which
> has come along that heats a small tip rapidly, the faster the better?
>
> I have even tried one of Radio Shack's butane-powered
> soldering irons. They certainly work, but the experience is similar
> to a continuously-on electric iron except one must be mindful of the
> little flame inside the screened-in area at the tip base.

Martin:

It works more along the lines of a regular soldering iron in that it
is intended to be turned on and then left on during a single soldering
session. But it does have a rapid heat up time and may be able to be used
in the way that you are speaking.

The device is a Metcal soldering station. The tip will go from
cold to hot and useable in about five seconds. The tip has the temperature
regulator built into it and the tip can be easily changed to different
types and temperatures that would be most suitable for the particular job.

Maybe you could use it with a foot switch to turn it on much as you
turn the sodering gun on now. The benefits would be to have a much lighter
hand piece. Easily changed tips. And more stable temperature at the tip.

Good luck and I hope this helps.

Al
ka0ies

1564. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 23:47:11 UTC
From: mike@corn2.freeserve.co.uk
Message-ID: <403be041.739427990@news.freeserve.net>
Source record: 28250

On Tue, 24 Feb 2004 22:39:26 GMT, "W3JDR" <joe@roccis.com> wrote:
FYI, I have bought two of the DDS Daughter boards from

http://www.njqrp.org/

and used a standard Weller soldering iron to build it, with the
exception of the SM DDS chip, installed by KitBuilders.. email

wa6ouw@aol.com

Excellent results, both from KitBuilders and the finished product.
For $19 for the kit and $6 for installing the chip I now have a 1Hz
resolution signal source..

Thanks George (njqrp) and Mike (wa6ouw)

1565. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-24 23:52:38 UTC
From: mike@corn2.freeserve.co.uk
Message-ID: <403be351.740211810@news.freeserve.net>
Source record: 28251

my apologies, I appear to have cut the text from W3JDR in its
totality. What I ascribed to Joe was in fact all my own work ;-(
sorry Joe..
On Tue, 24 Feb 2004 23:47:11 GMT, mike@corn2.freeserve.co.uk (Mike W)
wrote:

>On Tue, 24 Feb 2004 22:39:26 GMT, "W3JDR" <joe@roccis.com> wrote:
>FYI, I have bought two of the DDS Daughter boards from
>
>http://www.njqrp.org/
>
>and used a standard Weller soldering iron to build it, with the
>exception of the SM DDS chip, installed by KitBuilders.. email
>
>wa6ouw@aol.com
>
>Excellent results, both from KitBuilders and the finished product.
>For $19 for the kit and $6 for installing the chip I now have a 1Hz
>resolution signal source..
>
>Thanks George (njqrp) and Mike (wa6ouw)
>

1566. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 00:16:26 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <2gpn309iunsrb6cgjg4d8dcm88156bq4iu@4ax.com>
Source record: 28252

On 24 Feb 2004 13:00:57 -0800, k7itm@aol.com (Tom Bruhns) wrote:

>Just did an interesting little 'speriment. Standard diode "full wave
>rectifier" frequency doubler. Transformer is 16 trifilar turns on an
>FT50-43 core (should be a bit more than 50uH per section). One of the
>triplet is the primary, and the other two are connected as a
>center-tapped secondary. The diodes are 1N4007 -- yep, the 1kV
>mains-freq rectifiers. Excitation comes from an HP3326, set to square
>wave output, source impedance 50 ohms. 50 ohm load impedance on the
>doubler output (input to spectrum analyzer; DC coupled load). HP3326
>square wave risetime is about 10 nanoseconds, I believe. Excite at
>0.5MHz, +/-2V (4Vp-p) Output waveform observed on a fast scope is
>frequency-doubled, close to 50% duty cycle, with fast falling edges
>and slow (200nsec) rising edges. Amplitude about 2Vp-p. Strong
>spectral output on all even harmonics; all odds suppressed about 20dB
>from the low evens, and I'm sure would be much lower with better
>matching of the diodes.
>
>Explanation left as an exercise for the reader, but should be obvious
>from previous discussion here. I'd guess 1N4148-type diodes would
>behave similarly for an input around 100MHz.

Great. So can you guys now agree on the most appropriate waveshape to
generate the maximum amount of even harmonics?
--

The BBC: Licensed at public expense to spread lies.

1567. 7360 type mixer and high current RF amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 01:02:14 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <8fmn30h0dr61si0omkv3phtpg507c557b8@4ax.com>
Source record: 28253
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Found a source for 7360 and it is some interest among my friends for
using this tube in HF receivers, particularly for 80 and 40m
It was mentioned an article by W2PUL(?) in QST using a high current
twin triode as RF amplifier.
Have seen the SSR-1 rx schematics. Is some more notes available on
some sites for a modern version of receiver using these devices? I
suspect some parts of the receiver could be improved over the practice
used in the 60's
Any suggestions?

73

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

1568. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 01:35:09 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <hZS_b.394542$xy6.2210245@attbi_s02>
Source record: 28254
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"ddwyer" <dd@ddwyer.demon.co.uk> wrote in message
news:yBus4UALh8OAFwtF@ddwyer.demon.co.uk...
> In article <j5M_b.5335$AL.133044@attbi_s03>, Harold E. Johnson
> <W4ZCB@mchsi.com> writes
> >
Hi Doug. I'm having mail bounce again going to you, new address, thought you might want to know. Looks like maybe, the newsgroup is the most reliable way to communicate!

Regards

W4ZCB

1569. Re: high quality graph of nice 0-100 analog scale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 02:34:47 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <103o31k5avnjl2f@corp.supernews.com>
Source record: 28255

The radius should affect the printed result. *HOWEVER* - the radius in the Windows version is in pixels. On your printer, pixels are usually pretty small these days, so you need to make the dial absolutely huge on the screen to print reasonably.

Most commonly printers are 300 dpi (although some newer ones are a lot higher) so a radius setting of 150 would give you a 1 inch diameter dial.

..

"SpamLover" <n1jpr@hotmail.com> wrote in message news:95a201e0.0402241352.4ef19de7@posting.google.com...
> Thank you everyone!
>
> I haven't tried "Meter", but "Dial" already made me the proud owner of
> a nicely printed 0-100 linear scale.
>
> Question: I had to do a screen capture and print via IrfanView, as
> the Radius setting had no effect on the printed size. Did I do
> something wrong?
>
> (However, using the screen capture, the result is excellent!)
>
> Re. log scale: don't you get any serious problems with fine rendering
> / printing? My PC/Video/printer work very well with Meter + IrfanView,
> but I can't get anything decent out of Excel/Open Office, as both
> approximate fine divisions too roughly for any practical use, even
> when doing HUGE pie charts.
>
> Thanks again, sooner or later I'll post pics of the new rig.
>
> It will (should) be a broad tuning-range HF regen with a highly
> repositionable, crystal referenced bandspread (either one generic
> 0-100 linear scale with tuning graph book, or perhaps a series of
> slide-in tuning cards, both so cutely retro!) plus switchable
> wide/phone/CW audio bandpass filtering, and a few other tricks.
>
> Also, by the way, do you know of anyone using a film scale + lamp +
> lens to PROJECT the tuning scale in a homemade device? This would be
> sooo cooool! I'd even be tempted to print in the names of a selection
> of broadcasters, coastal stations, nets, QPR windows, USN fax, GCSS,
> whatever....
>
> Spammy

1570. Re: AGC - why delayed? good properties?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 02:52:51 UTC
From: Tom Holden <holden_family@sympatico.ca>
Message-ID: <%5U_b.4742$ee3.332251@news20.bellglobal.com>
Source record: 28257

Jan-Martin Noeding, LA8AK wrote:
> Mentioning a certain voltage level doesn't really make so
> much sense when you don't know what the rest of detector
> stages looks like. [snip]

Thanks for the interesting examples, Jan-Martin. The quote was from the 2004 ARRL HB page 17.23 in reference to a schematic/block diagram of a "typical superhet receiver with AGC applied to multiple stages of RF and IF". The RS DX-394 bears some resemblance to this with a resistor in place of the "Delay Diode". It beats me how the AGC in this HB example actually controls the RF gain - the diode appears to block control. A second one in parallel in the opposite direction seems to me to be needed.

Tom

1571. Re: 7360 type mixer and high current RF amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 02:57:50 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c1h2veamj1@freenet9.carleton.ca>
Source record: 28256

"Jan-Martin Noeding, LA8AK" (la8ak@online.no) writes:
> Found a source for 7360 and it is some interest among my friends for
> using this tube in HF receivers, particularly for 80 and 40m
> It was mentioned an article by W2PUL(?) in QST using a high current
> twin triode as RF amplifier.
> Have seen the SSR-1 rx schematics. Is some more notes available on
> some sites for a modern version of receiver using these devices? I
> suspect some parts of the receiver could be improved over the practice
> used in the 60's
> Any suggestions?
>
The latest article I can think of seeing in print was February 1972.
I may have the date wrong. It was by one of the QST staff members
but not Doug DeMaw; I want to say Doug Blakeslee.

It was a 3.5MHz receiver with a 455KHz design, hardly cutting edge.
But it was intended for strong signal handling, so he used a tube
in the RF stage that had higher current handling. He half jokingly
suggested using an 807 in that stage.

A lot of those articles using the 7360 used no RF stage, which is
why you often saw a signal frequency Q-multiplier, to aid in image
recection. Of course, by the time the 7360 was put to use, HF range
IF filters were available so many of the receivers used an IF in
the 5 or 9MHz range.

Ray Moore had some articles in Ham Radio in 1972 and 1973 about
receiver design, and the introductory piece covered mixers including
the 7360, and then he had a "construction" article on a fancy AM
BCB receiver, that used a 7360.

Maybe some work was done with the mixer after that, but it pretty much
faded from view from that point on.

Michael VE2BVW

1572. Re: 7360 type mixer and high current RF amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 03:40:14 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <yOU_b.9721$AL.228942@attbi_s03>
Source record: 28258

"Michael Black" <et472@FreeNet.Carleton.CA> wrote in message
news:c1h2veamj1@freenet9.carleton.ca...
> "Jan-Martin Noeding, LA8AK" (la8ak@online.no) writes:
> > Found a source for 7360 and it is some interest among my friends for
> > using this tube in HF receivers, particularly for 80 and 40m
> > It was mentioned an article by W2PUL(?) in QST using a high current
> > twin triode as RF amplifier.
> > Have seen the SSR-1 rx schematics. Is some more notes available on
> > some sites for a modern version of receiver using these devices? I
> > suspect some parts of the receiver could be improved over the practice
> > used in the 60's
> > Any suggestions?
> >
A couple, With Colin Horrabin's "H" mode mixer and the later switch mode
mixers available for well under a buck, the mixer has been removed from
being the concern it once was in receiver design. Since that topology, and
the 4066/312X/500X solid state mixers yield better linearity than the
following filters do, why return to the 7360? It was a fine mixer in it's
day. That day is LONG past. Try operating a 7360 in any close proximity to a
flourescent ballast. It will quickly disallusion you as to it's relative
worth except as a curiosity. Vacuum tube receiver technology and modern is
an oxymoron.

W4ZCB

1573. Converting sig gen to solid state

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 06:31:35 UTC
From: n2cqr@clix.pt
Message-ID: <97f305da.0402242231.3e9a54ed@posting.google.com>
Source record: 28259

I have an old Heath SG-6 signal generator. It uses two triodes.
I'd like to convert it to solid state. The switched coils, varible cap
and dial mechanism are very nice. Any suggestions on what kind of
oscillator circuit I should use? I imagine the difficult part will
be coming up with a feedback circuit that will cover the 160 kHz to 50 Mhz.
Any ideas? Has anyone seen any articles on this kind of conversion?
By going solid state and adding a few buffer stages I'm hoping I could make
this thing a lot more stable. 73 Bill M0HBR CU2JL N2CQR
http://planeta.clix.pt/n2cqr

1574. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 07:51:15 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <PU8zW2DzPFPAFADq@ifwtech.co.uk>
Source record: 28261

Tim Wescott wrote:
>
>In the case of RF devices like DDS's and high-performance
>microprocessors (you think 1GHz isn't RF?) the surface mount package
>significantly enhances performance.

Re-mounting an SMD onto a DIP header guarantees minimum ground-lead lengths of about a quarter-inch, so watch out for some "interesting" changes in performance.

>I haven't found them to be that bad to work with; you just need good
>eyes and a steady hand.
>
I don't have notably good eyes or hand co-ordination, but have done plenty of SMD work using an extra pair of strong reading glasses (on top of my normal pair) and a Weller TCP iron with the finest-pointed conical tip.

It's remarkable how your hands become much steadier and more controlable when viewed under magnification. The other thing is to rest your elbow or forearm on the bench, so you only have to move your wrist and hand. Oh yes, and lay off the coffee and Coke for several hours beforehand!

Given those aids, anyone who doesn't have a clinical condition affecting hand co-ordination should give SMD a try. (Note: "I don't want to" is not a clinical condition :-)

Other essentials:
* a good work light
* thin silver-loaded solder (20g maximum)
* a flux pen or a supply of liquid flux
* thin fluxed desolder braid (1/8in maximum)
* a good pair of tweezers, that won't cross over and flip the SMD to who-knows-where
* a clean workspace, because you *will* drop things

With only that equipment, I've mounted AD DDS chips (and much else) on a board and they worked first time.

SMD work *is* do-able... so just do it!

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

1575. Re: Converting sig gen to solid state

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 08:19:52 UTC
From: Leon Heller <aqzf13@dsl.pipex.com>
Message-ID: <403c5aa9$0$34$cc9e4d1f@news.dial.pipex.com>
Source record: 28260

Bill Meara wrote:

> I have an old Heath SG-6 signal generator. It uses two triodes.
> I'd like to convert it to solid state. The switched coils, varible cap
> and dial mechanism are very nice. Any suggestions on what kind of
> oscillator circuit I should use? I imagine the difficult part will
> be coming up with a feedback circuit that will cover the 160 kHz to 50 Mhz.
> Any ideas? Has anyone seen any articles on this kind of conversion?
> By going solid state and adding a few buffer stages I'm hoping I could make
> this thing a lot more stable. 73 Bill M0HBR CU2JL N2CQR
> http://planeta.clix.pt/n2cqr

You should be able to replace the triodes with FETs, this was done
occasionally when FETs first became available. You'll probably need to
fiddle with some of the component values. Don't forget to reduce the HT
voltage. 8-)

Leon
--
Leon Heller, G1HSM
Email: aqzf13@dsl.pipex.com
My low-cost Philips LPC210x ARM development system:
http://www.geocities.com/leon_heller/lpc2104.html

1576. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 09:54:06 UTC
From: ChipS <spike@vollyball.net>
Message-ID: <403c71e7_8@corp.newsgroups.com>
Source record: 28262

Thanks to all for the replys. Thanks particularly to Joe and Mike W. for the good info.on the daughterboard and soldering service.

--
Chip
KC5UES
real e-mail address:
trilby1989@yahoo.com

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

1577. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 11:00:30 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <tjvo30ljemt38ljbdqv09fe4gs06vdi6ut@4ax.com>
Source record: 28263
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 24 Feb 2004 12:30:12 -0700, Jim Thompson
<thegreatone@example.com> wrote:

>Aha! I just noted from Paul's post that "my" oscillator is called a
>two-transistor Butler. Wonder when that was conceived? I've been
>using the my direct-coupled version for 40 years.

Interesting. This is the type I've decided to build as the basis for
my next sweep generator attempt, since it's claimed the config is more
amenable to being pulled than most others (although I won't be
attempting to pull it anything like as much as my first abortive
attempt using a Cmos-based inverter). Do you find it's a reliable and
stable design, Jim? I assume if it wasn't you wouldn't still be using
it!
--

The BBC: Licensed at public expense to spread lies.

1578. Re: Converting sig gen to solid state

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 11:22:57 UTC
From: budgie <me@privacy.net>
Message-ID: <g41p30p1hgj9cscrsup2o6d7jpb7j317g1@4ax.com>
Source record: 28264

On 24 Feb 2004 22:31:35 -0800, n2cqr@clix.pt (Bill Meara) wrote:

>I have an old Heath SG-6 signal generator. It uses two triodes.
>I'd like to convert it to solid state. The switched coils, varible cap
>and dial mechanism are very nice. Any suggestions on what kind of
>oscillator circuit I should use? I imagine the difficult part will
>be coming up with a feedback circuit that will cover the 160 kHz to 50 Mhz.
>Any ideas? Has anyone seen any articles on this kind of conversion?
>By going solid state and adding a few buffer stages I'm hoping I could make
>this thing a lot more stable.

A couple of decades ago (shite, time flies) I purchased a Marconi TF995A/5 sig gen. In common with many gens of that era, these suffered warm-up drift and the occasional wander after that.

Well, this one didn't. I'm not saying it didn't drift, but nothing like its peers, and it warmed up quicker. Explanation? The previous owner had fed all the fils off a regulated 5V DC add-on. Might be worth a quick try to see if that approach gives you enough improvement, before you get into serious redesign.

1579. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 12:17:17 UTC
From: samsvl@nlr.nl
Message-ID: <Xns949A872CB912Csamsvlnlrnl@137.17.128.14>
Source record: 28265

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in
news:PU8zW2DzPFPAFADq@ifwtech.co.uk:

Even with an 'essential tremor' in my soldering arm
I manage down to 0.7mm pitch SMD's.
Indeed, magnificatrion does the job!

Sam

> Tim Wescott wrote:
>>
>>In the case of RF devices like DDS's and high-performance
>>microprocessors (you think 1GHz isn't RF?) the surface mount package
>>significantly enhances performance.
>
> Re-mounting an SMD onto a DIP header guarantees minimum ground-lead
> lengths of about a quarter-inch, so watch out for some "interesting"
> changes in performance.
>
>>I haven't found them to be that bad to work with; you just need good
>>eyes and a steady hand.
>>
> I don't have notably good eyes or hand co-ordination, but have done
> plenty of SMD work using an extra pair of strong reading glasses (on top
> of my normal pair) and a Weller TCP iron with the finest-pointed conical
> tip.
>
> It's remarkable how your hands become much steadier and more controlable
> when viewed under magnification. The other thing is to rest your elbow
> or forearm on the bench, so you only have to move your wrist and hand.
> Oh yes, and lay off the coffee and Coke for several hours beforehand!
>
> Given those aids, anyone who doesn't have a clinical condition affecting
> hand co-ordination should give SMD a try. (Note: "I don't want to" is
> not a clinical condition :-)
>
> Other essentials:
> * a good work light
> * thin silver-loaded solder (20g maximum)
> * a flux pen or a supply of liquid flux
> * thin fluxed desolder braid (1/8in maximum)
> * a good pair of tweezers, that won't cross over and flip the SMD to
> who-knows-where
> * a clean workspace, because you *will* drop things
>

> With only that equipment, I've mounted AD DDS chips (and much else) on a
> board and they worked first time.
>
>
> SMD work *is* do-able... so just do it!
>
>

1580. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 12:39:46 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <ml0%b.4483$f61.4471@nwrdny02.gnilink.net>
Source record: 28266
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul,
I think you started off speaking about crystal oscillators, but you just mentioned a sweep generator. Can you tell us a little more about your application??

Joe
W3JDR

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message news:tjvo30ljemt38ljbdqv09fe4gs06vdi6ut@4ax.com...
> On Tue, 24 Feb 2004 12:30:12 -0700, Jim Thompson
> <thegreatone@example.com> wrote:
>
> >Aha! I just noted from Paul's post that "my" oscillator is called a
> >two-transistor Butler. Wonder when that was conceived? I've been
> >using the my direct-coupled version for 40 years.
>
> Interesting. This is the type I've decided to build as the basis for
> my next sweep generator attempt, since it's claimed the config is more
> amenable to being pulled than most others (although I won't be
> attempting to pull it anything like as much as my first abortive
> attempt using a Cmos-based inverter). Do you find it's a reliable and
> stable design, Jim? I assume if it wasn't you wouldn't still be using
> it!
> --
>
> The BBC: Licensed at public expense to spread lies.

1581. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 12:54:35 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <Ns2%b.2016$jl.1702@newsfe1-gui.server.ntli.net>
Source record: 28268

> I'm new to the newsgroup and am sure that this is not the first gripe
about
> SMD's, but I refuse to use them - not because I can't (at least not yet),
> but because I don't want to endure the angst.
==========
The above proves that a basic bottleneck in humans is the tendency to
resist change.
Fortunately there are also many (humans) who see change as a challenge.
I prefer to belong to the latter category and will shortly 'get into SMD' by
building a DDS VFO
(ref KG6CYN) ,be it that I am currently doing some 'home training' by
messing about with SMD components from discarded consumer electronics.
After all homebrewing electronics is and remains a great hobby.

Frank GM0CSZ / KN6WH

1582. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 13:04:50 UTC
From: R J Carpenter <rcarpen@erols.com>
Message-ID: <403c9d5d$0$3078$61fed72c@news.rcn.com>
Source record: 28267

"ChipS" <spike@vollyball.net> wrote in message
news:403c71e7_8@corp.newsgroups.com...
> Thanks to all for the replys. Thanks particularly to Joe and Mike W. for
> the good info.on the daughterboard and soldering service.

Read the latest QEX. The frequency synthesizer article contains hints on
soldering 0.6 mm spaced surface mount leads.

1583. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 15:01:47 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <vN2%b.58$S9.20@nwrdny01.gnilink.net>
Source record: 28269

Great attitude Frank!

Those of us who have been around for a good number of years can remember the old farts who refused to adapt to SSB when it began to displace AM, then refused to learn about transistors when they began to displace tubes, then refused to learn about microcontrollers when virtually every new product had at least one in it, and now refuse to learn how to use SMD's. There's much more change to come that will dramatically change this hobby, including the DSP revolution, TCP/IP networking, and exciting digital modes. Many hams will become artifacts because they lament "I won't or I can't". Others will boldly say "I can" and "I will", and they will be the ones who are having the time of their lives exploring new technologies while the others just constantly relive their past.

Joe
W3JDR

"Frank Dinger" <gm0cszx.xkn6wh@ntlworld.com> wrote in message
news:Ns2%b.2016$jl.1702@newsfe1-gui.server.ntli.net...
> > I'm new to the newsgroup and am sure that this is not the first gripe
> about
> > SMD's, but I refuse to use them - not because I can't (at least not
yet),
> > but because I don't want to endure the angst.
> ==================================
> The above proves that a basic bottleneck in humans is the tendency to
> resist change.
> Fortunately there are also many (humans) who see change as a challenge.
> I prefer to belong to the latter category and will shortly 'get into SMD'
by
> building a DDS VFO
> (ref KG6CYN) ,be it that I am currently doing some 'home training' by
> messing about with SMD components from discarded consumer electronics.
> After all homebrewing electronics is and remains a great hobby.
>
> Frank GM0CSZ / KN6WH
>
>

1584. WTB : eaton ailtech singer antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 15:25:56 UTC
From: maxshiloh@yahoo.com
Message-ID: <8c7550c8.0402250725.58b1e2e6@posting.google.com>
Source record: 28270

I looking for the following antennas. They were made by the Eaton/
Ailtech/ singer/ Stoddart companies. If anyone has some that they
would be willing to sell, please e-mail asking price and condition to:
maxshiloh@yahoo.com

94614-1 horn antenna
93491-2 conical log spiral(I need 2 of these)

Thanks,
Mike

1585. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 15:56:56 UTC
From: Wes Stewart <n7ws@_arrl.net>
Message-ID: <4sgp30l9ssj1mig0r467fnir7tjbbj3ug0@4ax.com>
Source record: 28271

On Wed, 25 Feb 2004 07:51:15 +0000, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> wrote:

[snip]

|Oh yes, and lay off the coffee and Coke for several hours beforehand!

No kidding!

During the development of the Phoenix Missile Solid State Transmitter, which used 16 IMPATT diodes in a cavity power combiner, we were serializing every diode.

The state of the art in diode manufacturing was such that getting 16 matched devices was almost impossible, so we tested hundreds and then picked those that most closely matched. These were a microwave pill package with a 3-48 screw and a flange about 2mm in diameter. We scribed about a 10 digit serial number right into the gold on the flange.

I was good for about 30 diodes each morning until the coffee and shakes set it.

1586. Re: Converting sig gen to solid state

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 16:31:06 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c1iika$k87$1@freenet9.carleton.ca>
Source record: 28272

Bill Meara (n2cqr@clix.pt) writes:
> I have an old Heath SG-6 signal generator. It uses two triodes.
> I'd like to convert it to solid state. The switched coils, varible cap
> and dial mechanism are very nice. Any suggestions on what kind of
> oscillator circuit I should use? I imagine the difficult part will
> be coming up with a feedback circuit that will cover the 160 kHz to 50 Mhz.
> Any ideas? Has anyone seen any articles on this kind of conversion?
> By going solid state and adding a few buffer stages I'm hoping I could make
> this thing a lot more stable. 73 Bill M0HBR CU2JL N2CQR
> http://planeta.clix.pt/n2cqr

As Leon said, you should be able to change the triode to an FET, with
minimal change. In other words, leave the oscillator as it is, and
merely change biasing.

I once took a Collins PTO, bought at a hamfest for $2.50, took out the
tube and wired in an FET across the tube socket. Obviously, I reduced
the "B+" to around 12V or so. I can't remember if I even had to change
the plate resistor (there might not have been one, but instead an RFC).

Michael VE2BVW

1587. Re: Frequency multiplication

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 16:54:15 UTC
From: k7itm@aol.com
Message-ID: <3200347.0402250854.166d57b6@posting.google.com>
Source record: 28273

averyfineman@aol.com (Avery Fineman) wrote in message
news:<20040224152633.29660.00003171@mb-m24.aol.com>...
...
> Thank you, Tom...but I've done the "SineX over X" thing a few times
> already and looked at a lot of spectral displays.
...

My sincere apologies. I thought you had posted something about
relatively little even-order harmonics unless the pulse width is very
short. As you've done the calcs and know that in a 1/3-2/3 rectangle
wave, there's well over two times the energy in the second harmonic as
in all the odds put together, I'm obviously mistaken about what that
previous posting said.

Cheers,
Tom

1588. Re: Converting sig gen to solid state

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 17:06:45 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <103plh0k713e046@corp.supernews.com>
Source record: 28274

Your solid state devices will either be really light-weight or will have
significantly higher capacitances than the tubes, so it would be very
difficult to get your oscillator to track.

I've got an RF-1 which I've contemplated upgrading. Before I went to solid
state I'd give the filaments a regulated supply (like budgie's post) _and_
put in a regulated plate supply. A solid-state wideband buffer would
probably be a quite good idea; a 0-50MHz broad-band amp into 50 ohms should
be fairly easy.

"Bill Meara" <n2cqr@clix.pt> wrote in message
news:97f305da.0402242231.3e9a54ed@posting.google.com...
> I have an old Heath SG-6 signal generator. It uses two triodes.
> I'd like to convert it to solid state. The switched coils, varible cap
> and dial mechanism are very nice. Any suggestions on what kind of
> oscillator circuit I should use? I imagine the difficult part will
> be coming up with a feedback circuit that will cover the 160 kHz to 50
Mhz.
> Any ideas? Has anyone seen any articles on this kind of conversion?
> By going solid state and adding a few buffer stages I'm hoping I could
make
> this thing a lot more stable. 73 Bill M0HBR CU2JL N2CQR
> http://planeta.clix.pt/n2cqr

1589. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 17:21:21 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <d2mp305m3iqpcua1sckfhvlnh2l5mc2nsb@4ax.com>
Source record: 28275
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 25 Feb 2004 12:39:46 GMT, "W3JDR" <joe@roccis.com> wrote:

>Paul,
>I think you started off speaking about crystal oscillators, but you just
>mentioned a sweep generator. Can you tell us a little more about your
>application??

Certainly. I've just finished roughing out the block diagram, actually
and will try to post it later for some constructive criticism. It's
basically just to sweep a half-meg segment in the 40Mhz band for the
purpose of testing filters to improve rx selectivity in R/C
applications..
--

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1590. Post follow up

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 17:23:58 UTC
From: MNS <SPAMFREE@SPAMFREE.COM>
Message-ID: <QS4%b.7163$5M.237906@dfw-read.news.verio.net>
Source record: 28276

About a month ago, there was a gentleman in here deciding on what to give his son to teach him electronics, construction, etc. A kit of some sort? There was a long thread on this. The pros and cons, ease of construction, practices, keeping him interested and so on.

I'm curious of the final decision made and how the young man is doing? I can't recall hearing of any progress on him, unless I missed it. What did/will he end up building - how is he coming along with his "studies"? I do wish him good luck. MNS

1591. Re: Post follow up

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 18:00:00 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <103pokrgkitd0cc@corp.supernews.com>
Source record: 28277

"MNS" <SPAMFREE@SPAMFREE.COM> wrote in message
news:QS4%b.7163$5M.237906@dfw-read.news.verio.net...
> About a month ago, there was a gentleman in here deciding on what to give
> his son to teach him electronics, construction, etc. A kit of some sort?
> There was a long thread on this. The pros and cons, ease of construction,
> practices, keeping him interested and so on.
>
> I'm curious of the final decision made and how the young man is doing? I
> can't recall hearing of any progress on him, unless I missed it. What
> did/will he end up building - how is he coming along with his "studies"? I
> do wish him good luck. MNS
>
>

I did quite a bit of shopping, concentrating on kits that use the SA602. I found out that it had to be a "Neophyte", because that's the article that lit the fire. It was in the ARRL's QRP Compendium -- I'm not sure of the title (it's a long walk from here), but it's a collection of article reprints of various QRP projects.

I bought an "Improved Neophyte" kit from Dan's Small Parts and Kits (http://www.danssmallpartsandkits.net/). This kit has the FAR circuit board, a reprint of the "Improved Neophyte" article from the Spring '94 HamBrew Magazine, and "all" the parts. The circuit seems to be solid, but I have to give the kit a "C" -- whoever kitted it made some counting errors; there were a couple of caps and resistors missing, and the construction article is missing the last page. It's working fine for us because I have a well-stocked shop and I've scratch-built receivers before, but a beginner would have trouble without help.

He learned to solder right off, but the kit building has been stalled for a couple of weeks because he has to be caught up on homework before he can work on it. We should have probably stuck with a straight "Neophyte", or jumpered around the "improved" parts of the circuit and gotten audio fast and full performance later, but I didn't put my foot down.

I expect that with pestering from dad we'll get things done some rainy day, and then I can steal it from him.

1592. Re: Post follow up

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 18:28:42 UTC
From: MNS <SPAMFREE@SPAMFREE.COM>
Message-ID: <wP5%b.7165$5M.237964@dfw-read.news.verio.net>
Source record: 28278

Well, it sounds like you at least got things going. Heathkits as good as they were, Eico's too - have had their share of problems, so I guess you can't complain. I hope all goes well for him. You're right, you got to keep after him and with some of the "problems" it does pay to have someone around who knows. One step off the beaten path to create a disappointment for him could spell disaster. Hope all continues well. MNS.

"Tim Wescott" <tim@wescottnospamdesign.com> wrote in message news:103pokrgkitd0cc@corp.supernews.com...
> "MNS" <SPAMFREE@SPAMFREE.COM> wrote in message
> news:QS4%b.7163$5M.237906@dfw-read.news.verio.net...
> > About a month ago, there was a gentleman in here deciding on what to give
> > his son to teach him electronics, construction, etc. A kit of some sort?
> > There was a long thread on this. The pros and cons, ease of construction,
> > practices, keeping him interested and so on.
> >
> > I'm curious of the final decision made and how the young man is doing? I
> > can't recall hearing of any progress on him, unless I missed it. What
> > did/will he end up building - how is he coming along with his "studies"? I
> > do wish him good luck. MNS
> >
> >
>
> I did quite a bit of shopping, concentrating on kits that use the SA602. I
> found out that it had to be a "Neophyte", because that's the article that
> lit the fire. It was in the ARRL's QRP Compendium -- I'm not sure of the
> title (it's a long walk from here), but it's a collection of article
> reprints of various QRP projects.
>
> I bought an "Improved Neophyte" kit from Dan's Small Parts and Kits
> (http://www.danssmallpartsandkits.net/). This kit has the FAR circuit
> board, a reprint of the "Improved Neophyte" article from the Spring '94
> HamBrew Magazine, and "all" the parts. The circuit seems to be solid, but I
> have to give the kit a "C" -- whoever kitted it made some counting errors;
> there were a couple of caps and resistors missing, and the construction
> article is missing the last page. It's working fine for us because I have a
> well-stocked shop and I've scratch-built receivers before, but a beginner
> would have trouble without help.

>
> He learned to solder right off, but the kit building has been stalled for
a
> couple of weeks because he has to be caught up on homework before he can
> work on it. We should have probably stuck with a straight "Neophyte", or
> jumpered around the "improved" parts of the circuit and gotten audio fast
> and full performance later, but I didn't put my foot down.
>
> I expect that with pestering from dad we'll get things done some rainy
day,
> and then I can steal it from him.
>
>

1593. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 18:36:07 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <rW5%b.4249$ax2.3187@nwrdny03.gnilink.net>
Source record: 28279
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul,
You might want to check out what I built to do that sort of job with great
precision:
http://mysite.verizon.net/jdrocci/

Joe
W3JDR

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:d2mp305m3iqpcua1sckfhvlnh2l5mc2nsb@4ax.com...
> On Wed, 25 Feb 2004 12:39:46 GMT, "W3JDR" <joe@roccis.com> wrote:
>
> >Paul,
> >I think you started off speaking about crystal oscillators, but you just
> >mentioned a sweep generator. Can you tell us a little more about your
> >application??
>
> Certainly. I've just finished roughing out the block diagram, actually
> and will try to post it later for some constructive criticism. It's
> basically just to sweep a half-meg segment in the 40Mhz band for the
> purpose of testing filters to improve rx selectivity in R/C
> applications..
> --
>
> The BBC: Licensed at public expense to spread lies.

1594. Re: safeguard against brownouts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 18:57:30 UTC
From: "Gary S." <Idontwantspam@net>
Message-ID: <jerp30p01g2nicchsf194rir996tqho9iq@4ax.com>
Source record: 28281

On Tue, 24 Feb 2004 02:05:39 GMT, U <outhouse@midcoast.com> wrote:

>Where I live, in the woods of Maine, we have power outages.
>
>Solar panels and all that stuff is quite expensive, but old car batteries
>("old" is when it doesn't get my Diesel started in subzero temps) are not.
>
>To make things just a bit comfi it would be nice to leave it in place with a
>charger attached (right now I tote the charger around when needed).
>
>Many things will run right off the batterie(s), others might need an
>inverter.
>
>So basically I am talking about a photovoltaic system without the
>photovoltaic panels, sort off.
>
>So which chargers can I leave permanently attached to a battery?
>
>The word 'trickle charger' or 'shore power' comes to mind. How is that
>different from my old Sears charger which does me good for many years
>already (but I unhook it after a day at most!).
>
There is a magazine called "Home Power" which deals with all sorts of
home power generation and storage issues, and enabling technology.

See the articles as well as the advertisements.

Online: http://www.homepower.com/

Happy trails,
Gary (net.yogi.bear)
---
at the 51st percentile of ursine intelligence

Gary D. Schwartz, Needham, MA, USA
Please reply to: garyDOTschwartzATpoboxDOTcom

1595. Re: safeguard against brownouts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 19:26:52 UTC
From: dplatt@radagast.org
Message-ID: <103ptns5jkcdl29@corp.supernews.com>
Source record: 28282

In article <BC601BA8.82B%outhouse@midcoast.com>,
U <outhouse@midcoast.com> wrote:

>So which chargers can I leave permanently attached to a battery?

What you want is something called a "float charger". It provides a carefully-regulated charging voltage (typically in the 13.5 - 13.8 volt range), with a current limiter.

>The word 'trickle charger' or 'shore power' comes to mind.

A trickle charger may, or may not regulate the charging voltage carefully enough to allow it to be hooked up on a semi-permanent basis.

If the voltage is too low, the battery may not maintain a good charge state, and may not recharge if you run it down partway.

If the voltage is too high, the battery will begin "gassing" - the high voltage breaks down the water in the electrolyte into hydrogen and oxygen gasses. If you don't replace the lost water (using distilled or demineralized water) periodically, the electrolyte level will fall below the top of the plates, and you'll lose charge capacity and may very well damage the battery permanently.

> How is that
>different from my old Sears charger which does me good for many years
>already (but I unhook it after a day at most!).

Standard battery chargers are often of a dual-voltage variety. They fast-charge the battery at a high voltage (around 14.4 volts) until it's mostly charged, and then switch to a lower trickle-charge voltage (13.8 or so) to finish the charging without excessive loss of electrolyte.

Unless they're designed for long-term float charging use (careful voltage regulation, with some amount of temperature-based adjustment of the float voltage), leaving a charger of this sort hooked up on a long-term basis can still result in some loss of electrolyte.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

1596. PSK31 article on ARRL website

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 19:30:03 UTC
From: mike@corn2.freeserve.co.uk
Message-ID: <403cf6d4.810753450@news.freeserve.net>
Source record: 28283

I'm not a member of the ARRL as I'm a UK operator. and, unfortunatly,
there is an article on the arrl website..

http://www.arrl.org/tis/info/pdf/0006031.pdf

that I would very much like to view.
Would some kind ARRL Member forward it to me please.

thanks, MIke W, G8NXD qthr

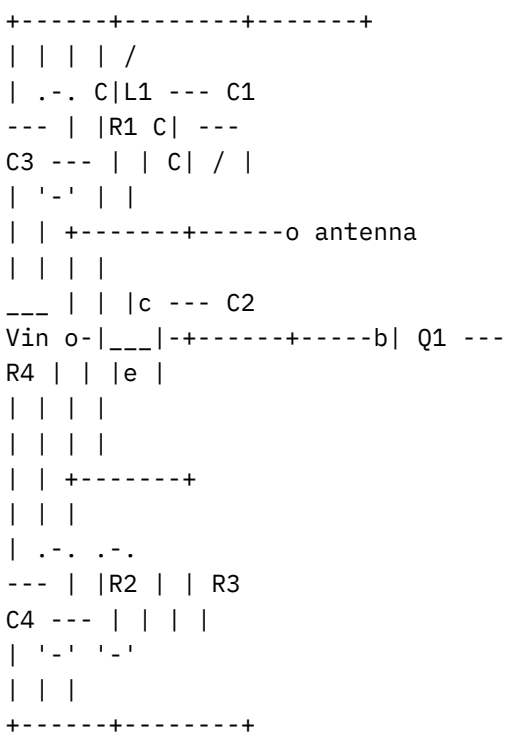
1597. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 19:47:49 UTC
From: Robert C Monsen <rcsurname@comcast.net>
Message-ID: <FZ6%b.58592$4o.76744@attbi_s52>
Source record: 28284
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:tjvo30ljemt38ljbdqv09fe4gs06vdi6ut@4ax.com...
> On Tue, 24 Feb 2004 12:30:12 -0700, Jim Thompson
> <thegreatone@example.com> wrote:
>
> >Aha! I just noted from Paul's post that "my" oscillator is called a
> >two-transistor Butler. Wonder when that was conceived? I've been
> >using the my direct-coupled version for 40 years.
>
> Interesting. This is the type I've decided to build as the basis for
> my next sweep generator attempt, since it's claimed the config is more
> amenable to being pulled than most others (although I won't be
> attempting to pull it anything like as much as my first abortive
> attempt using a Cmos-based inverter). Do you find it's a reliable and
> stable design, Jim? I assume if it wasn't you wouldn't still be using
> it!

Why not use a VCO built from an LC oscillator? Its really easy to build one
with a single transistor that sweeps your band.

I built a simple one that looked like this:



Q1 = 2N3904

L1 = 0.5uH
C1 = 20pF variable from 10pF to 80pF
C2 = 4.7pF
C3 = .22uF
C4 = 1uF
R1 = 47k
R2 = 10k
R3 = 1k
R4 = 100

created by Andy's ASCII-Circuit v1.24.140803 Beta www.tech-chat.de

I was able to sweep the band from 40MHz to 42MHz by first adjusting C1, then changing Vin (with a pot) to vary the output frequency. I built it on a solderless breadboard (!), and had no problems getting it to work. With your newfound PCB skills, should be a snap to get something like this working. I tested it by counting waveforms on my oscilloscope, so your mileage may vary.

The resonant frequency is near

f0 = 1/2.pi.sqrt(L1Ct)

where Ct = C1 + C2||Cbe + Ca + Ccb

Cbe is the capacitance between base and emitter of Q1, which is varied with base voltage; Ccb is the 'fixed' capacitance between emitter and base of Q1; and, Ca is the capacitance of the wire antenna. I'm unsure about how to calculate the power output of the thing, but I'm guessing its tiny. I was able to sweep the FM band (using a 0.1uH inductor) pretty reliably, and it knocked out radios in other parts of my house when I swept past them.

The Q of the inductor should be as good as you can make. You can buy highQ inductors. At this value, an aircore is probably pretty good. Otherwise, your resonator won't stay on frequency. It'll drift with temperature, and probably the phase of the moon, as well.

Regards,
Bob Monsen

1598. Re: RF mixer IC recommendation

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 20:45:28 UTC
From: John Jardine <john@jjdesigns.fsnet.co.uk>
Message-ID: <c1j159jif1@news6.svr.pol.co.uk>
Source record: 28285
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

SWbeginner <SWbeginner@nowhere.com> wrote in message
news:103nm3j3jh2q18@corp.supernews.com...
> How high can the 74HC4066 as mixer go?
> I need 50Mhz tops.
>
> I still like to know how strong dual gate MOSFET is compared to say diode
> ring.
>
> thx

?

The HC4066 is OK(ish) to about 10megs.
A dual gate fet (eg 40673) -with care- should be able give out roughly the
same, or a little more voltage than what is coming in. With a diode ring
expect to pick up (say) only 40mV of an incoming 100mV.
[Easiest / most reliable]: use a "Bus Switch" such as the FST3125, toggled
by 74AC type logic; handle the A.C. signals by couple of video op-amps).
('Output' signal looks like what you see in a text book).
regards
john

1599. Re: AGC - why delayed? good properties?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 20:50:47 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c1j1ulsko1@newshost.mot.com>
Source record: 28204

"Jan-Martin Noeding, LA8AK" <la8ak@online.no> wrote in message
news:05ml30huua9r69hvm49islldbf5qarin63@4ax.com...
> On Mon, 23 Feb 2004 21:33:39 -0500, "Tom Holden"
> <holden_family@sympatico.ca> wrote:
>
> >
> >I seized on the word "delayed" and linked it to the inclusion of a longer
> >time constant in the AGC to the RF stages of the DX-394 than the time
> >constant in the AGC to the IF stages. The Handbook example actually says
"As
> >an option, the AGC to the RF amplifier is held off, or 'delayed', by the
> >0.6V forward drop of the diode so that the RF gain does not start to
> >decrease until larger signals appear. This prevents a premature increase
in
> >the receiver noise figure. Also, a time constant of one or two seconds
after
> >this diode helps keep the RF gain steady for the short term."
> >
> Mentioning a certain voltage level doesn't really make so much sense
> when you don't know what the rest of detector stages looks like.
> 73, LA8AK

Jan-Martin,

I think the issue is that it is NOT a time delay, but a signal level
delay. The AGC does not begin to reduce receiver gain until the signal
reaches some defined LEVEL.

--
Steve N, K,9;d, c. i My email has no u's.

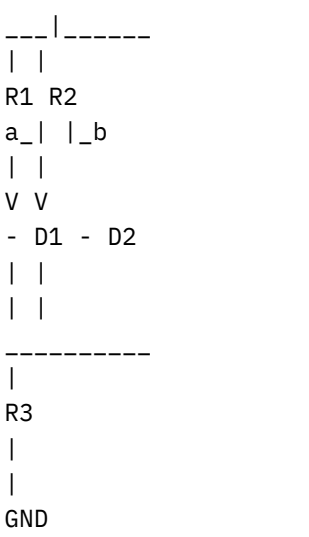
1600. Re: AGC - why delayed? good properties?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 20:59:13 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c1j2ef$36$1@newshost.mot.com>
Source record: 28205

"Tom Holden" <holden_family@sympatico.ca> wrote in message
news:%5U_b.4742$ee3.332251@news20.bellglobal.com...
> Jan-Martin Noeding, LA8AK wrote:
> > Mentioning a certain voltage level doesn't really make so
> > much sense when you don't know what the rest of detector
> > stages looks like. [snip]
>
> Thanks for the interesting examples, Jan-Martin. The quote was from the
2004
> ARRL HB page 17.23 in reference to a schematic/block diagram of a "typical
> superhet receiver with AGC applied to multiple stages of RF and IF". The
RS
> DX-394 bears some resemblance to this with a resistor in place of the
"Delay
> Diode". It beats me how the AGC in this HB example actually controls the
RF
> gain - the diode appears to block control. A second one in parallel in the
> opposite direction seems to me to be needed.
>
> Tom

Tom,

I don't have the circuit, but have two diodes pointing down. Resistors
on both anodes to +V. Common cathodes with resistor to GND.



Changing the voltage at point "b" will cause "a" to also change. Another
way to look at it is that you steal different amounts of current away from

D1. Go too low at "b" and "a" won't change any more. It stops. However, go higher on "b" and "a" keeps going up. It is a limiter.

--
Steve N, K,9;d, c. i My email has no u's.

1601. Regulated Tube Supplies; was (Converting sig gen to solid state)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 21:00:03 UTC
From: averyfineman@aol.com
Message-ID: <20040225160003.06226.00003121@mb-m19.aol.com>
Source record: 28286

In article <103plh0k713e046@corp.supernews.com>, "Tim Wescott"
<tim@wescottnospamdesign.com> writes:

>Your solid state devices will either be really light-weight or will have
>significantly higher capacitances than the tubes, so it would be very
>difficult to get your oscillator to track.
>
>I've got an RF-1 which I've contemplated upgrading. Before I went to solid
>state I'd give the filaments a regulated supply (like budgie's post) _and_
>put in a regulated plate supply. A solid-state wideband buffer would
>probably be a quite good idea; a 0-50MHz broad-band amp into 50 ohms should
>be fairly easy.

Going to all-regulated supplies for a vacuum tube thing turns out to be rather easy. I've just finished breadboarding that for a 1960s era HF SWBC receiver to improve its frequency stability. Tube oscillators need a stable "B+" or plate supply that, in older days, was enabled by gas shunt regulators (OA2 or OB2, for example). Heater voltage variation is less of an effect on frequency stability but such does occur when the AC primary voltage varies to the extremes of its +/- 10% possible range.

On checking the HV supply of this little receiver, the OB2 strike voltage had increased beyond manufacturer's spec so it did not always strike and start regulating with power-on. The lone OB2 in spares, also 40 years old, was just the opposite, striking below spec. That prompted looking into a series regulator for the whole B+ using an ST (Fairchild also makes them) TIP47 series pass NPN with a 250 V breakdown and a 2N3440 250 V NPN as the error amplifier. Not a problem to have it regulate everything at +120 VDC plate supply, using only half of the original filter capacitor quad.

Regulating the filaments just barely works with a conventional 7812 positive IC regulator. My version is a combo series-parallel string of 6.3 and 12.6 V nominal filaments, the whole taking 0.6 A. With less than 10% ripple on full-wave rectification and 12.6 VAC RMS nominal, the 2.0 V minimum of series drop necessary is maintained even at 105 VAC primary transformer input. The filament voltage is maintained constant at 12.1 VDC within 1 percent at all conditions of AC primary voltage. To get a regulated minus, a 7912 (if it can be found) will do with rectifier and capacitor polarity reversed, handy for biasing other circuits with a negative voltage.

With a 6.3 V filament arrangement, that would be on the hairy edge of regulating at -10% AC line voltage. Filter capacitor needs to be high enough for only 5% ripple and rectifier diodes can't be much more

than 0.7 V forward drop to fit the minimum 7806 regulator 2 V head-room. Note: The original AC filament voltage was made within certain (seldom specified) limits; if that is on the low side also, the 7806 may poop out during droops in ripple voltage. 7906s were originally made in the series for negative voltage regulation, also good for providing a minus bias voltage. Tube filaments for indirectly-heated cathodes don't care about DC polarity. Slightly-lower than nominal voltage will improve heater life.

Higher voltage NPNs for series-pass applications are getting scarce. So are higher voltage zeners. TIP48 has slightly higher breakdown than TIP47, can work for higher B+ values although there's a need to check voltages for +10% AC line conditions rather than -10%. Exceeding breakdown voltage can be catastrophic to the transistor junction in just a single AC cycle.

Len Anderson
retired (from regular hours) electronic engineer person

1602. Re: PSK31 article on ARRL website

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 21:10:40 UTC
From: mike@corn2.freeserve.co.uk
Message-ID: <403d0f15.816963475@news.freeserve.net>
Source record: 28288

Don't bother .. ;-)
I've found it elsewhere.
all the best, Mike W

1603. Re: Converting sig gen to solid state

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 21:12:22 UTC
From: James Fenech <james.fenech@xxxnec.com.au>
Message-ID: <1077743539.758070@proxy.nec.com.au>
Source record: 28287

"Bill Meara" <n2cqr@clix.pt> wrote in message
news:97f305da.0402242231.3e9a54ed@posting.google.com...
> I have an old Heath SG-6 signal generator. It uses two triodes.
> I'd like to convert it to solid state. The switched coils, varible cap
> and dial mechanism are very nice. Any suggestions on what kind of
> oscillator circuit I should use? I imagine the difficult part will
> be coming up with a feedback circuit that will cover the 160 kHz to 50
Mhz.
> Any ideas? Has anyone seen any articles on this kind of conversion?
> By going solid state and adding a few buffer stages I'm hoping I could
make
> this thing a lot more stable. 73 Bill M0HBR CU2JL N2CQR
> http://planeta.clix.pt/n2cqr

Hi Bill,

I'm in the process of doing something similar. I have (had) an old "University" RF oscillator, 6 ranges, covers 100kHz-130MHz. Based on a dual triode (oscillator and buffer) and a pentode for audio oscillator for modulation. This thing looked cheap(ish) and didn't work very well, would start and stop at various frequency settings. So I stripped it and decided to keep the tuning cap, range switch, and tuning coils.

Rebuilt it with a JFET (J310) but had to change the circuit. Coils are centre tapped and fed the supply voltage, so the Anode current flowed through the coil. When the FET was placed into the circuit this overdrove the gate and oscillation was erratic and unstable. Supplying through a resistor improved things quite a bit.

Problem I have now is with the low frequency ranges. The coils for this are large (they are air cored with a tuning slug?) so are high resistance as they have lots of wire. I may try to increase gain to compensate or else replace with a toroid.

As someone else mentioned, I haven't checked tracking so I don't know how well the tuning dial will match the frequency.

James.

1604. Re: PSK31 article on ARRL website

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-25 22:49:56 UTC
From: Roger Gt <not@here.net>
Message-ID: <oE9%b.30348$vE7.14968@newssvr25.news.prodigy.com>
Source record: 28289

"Mike W" <mike@corn2.freeserve.co.uk> wrote in message
news:403d0f15.816963475@news.freeserve.net...
: Don't bother .. ;-)
: I've found it elsewhere.
: all the best, Mike W

That's good, your E-MAIL will only accept messages less than 1Kb

1605. Re: safeguard against brownouts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 00:13:05 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <ZWj%b.3156$Vv.1069@newsfe2-gui.server.ntli.net>
Source record: 28208

> Where I live, in the woods of Maine, we have power outages.
>
> Solar panels and all that stuff is quite expensive, but old car batteries
> ("old" is when it doesn't get my Diesel started in subzero temps) are not.
>
> To make things just a bit comfi it would be nice to leave it in place with
a
> charger attached (right now I tote the charger around when needed).
>
> Many things will run right off the batterie(s), others might need an
> inverter.
>
> So basically I am talking about a photovoltaic system without the
> photovoltaic panels, sort off.
>
>
> So which chargers can I leave permanently attached to a battery?
>
> The word 'trickle charger' or 'shore power' comes to mind. How is that
> different from my old Sears charger which does me good for many years
> already (but I unhook it after a day at most!).
==========
Don't know how much power is involved and the average duration of an outage
, but the simplest way to keep power during brownouts is to use a
UPS=Uninterruptable Power Supply with integral batteries . I am using a make
APC=American Power Corporation , model Back-ups Pro 650 (650 Volt * Amp or
650 VA ,which equals 650 Watts when power factor =1) Back -up time at full
load is approx 15 minutes. UPSes are also available for connection to
external batteries .

Frank GM0CSZ / KN6WH

1606. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 00:15:27 UTC
From: James Meyer <jmeyer@nowhere.com>
Message-ID: <9feq30hpl30ocgpl8uvpre6556fglnvgvc@4ax.com>
Source record: 28290
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 25 Feb 2004 19:47:49 GMT, "Robert C Monsen" <rcsurname@comcast.net>
posted this:

>
>"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
>>
>> Interesting. This is the type I've decided to build as the basis for
>> my next sweep generator attempt, since it's claimed the config is more
>> amenable to being pulled than most others (although I won't be
>> attempting to pull it anything like as much as my first abortive
>> attempt using a Cmos-based inverter). Do you find it's a reliable and
>> stable design, Jim? I assume if it wasn't you wouldn't still be using
>> it!
>
>Why not use a VCO built from an LC oscillator? Its really easy to build one
>with a single transistor that sweeps your band.
>

Major problem with that idea is the fact that Paul has no way to
calibrate or adjust the VCO. That's why he wants to start with a crystal
oscillator. If it works, he won't have to calibrate it.

Jim

1607. Re: PSK31 article on ARRL website

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 01:26:15 UTC
From: Bob McConnell <rmcconne@NOSPAM.lightlink.com>
Message-ID: <hliq30hg574f8micnd1463o3ff8o3iho8k@4ax.com>
Source record: 28291

On Wed, 25 Feb 2004 21:10:40 GMT, mike@corn2.freeserve.co.uk (Mike W)
wrote:

>Don't bother .. ;-)
>I've found it elsewhere.
>all the best, Mike W

Hi Mike,

Can you tell us where you found it? There are a few of us in the
States that aren't dumb enough to join that useless club.

Bob McConnell
N2SPP

1608. Re: safeguard against brownouts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 01:57:54 UTC
From: averyfineman@aol.com
Message-ID: <20040225205754.12631.00005171@mb-m28.aol.com>
Source record: 28292

In article <BC601BA8.82B%outhouse@midcoast.com>, U <outhouse@midcoast.com>
writes:

>Where I live, in the woods of Maine, we have power outages.
>
>Solar panels and all that stuff is quite expensive, but old car batteries
>("old" is when it doesn't get my Diesel started in subzero temps) are not.
>
>To make things just a bit comfi it would be nice to leave it in place with a
>charger attached (right now I tote the charger around when needed).
>
>Many things will run right off the batterie(s), others might need an
>inverter.
>
>So basically I am talking about a photovoltaic system without the
>photovoltaic panels, sort off.
>
>
>So which chargers can I leave permanently attached to a battery?
>
>The word 'trickle charger' or 'shore power' comes to mind. How is that
>different from my old Sears charger which does me good for many years
>already (but I unhook it after a day at most!).

With good control of charging current and voltage, the battery can
"float" in the circuit, always connected to the charger or the AC mains
low voltage supply that can take over from the battery when mains are
hot. The space folks do that regularly from low earth orbit (90 min.) to
geo-synchronous (24 hours), using series power diode isolation.

Another thought is to check out computer UPSs which have already
been engineered and tested, ready to go off the shelf. Those can
handle up to 600 W loads for small servers and auto-switch to internal
batter in less than an AC cycle. Industrial-strength UPS models can
handle much more. A little, cheap UPS sits between my PC box and
line all the time now, can easily handle 300 W loads for several minutes.

Len Anderson
retired (from regular hours) electronic engineer person

1609. Re: PSK31 article on ARRL website

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 02:20:22 UTC
From: "Dan Richardson"
Message-ID: <ltlq30hbm2a4glkl728q6fp27kf42rc5dm@4ax.com>
Source record: 28294

On Thu, 26 Feb 2004 01:26:15 GMT, Bob McConnell
>
>Can you tell us where you found it? There are a few of us in the
>States that aren't dumb enough to join that useless club.
>
>Bob McConnell
>N2SPP

Humm..... Seems useful enough to provide articles you want to read.

Danny, K6MHE

1610. FA: Glenayre RCL-54C Repeater Card

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 02:22:40 UTC
From: Norm VE3CZI <ve3czi@arrl.net>
Message-ID: <cUc%b.140$R37.53@read1.cgocable.net>
Source record: 28201

Here is a nice repeater interface card for those putting togeather a
repeater...Reserve is $45 USD
http://cgi.ebay.ca/ws/eBayISAPI.dll?ViewItem&item=3080188066&category=4675&sspagename=STRK
%3AMESSE%3AIT&rd=1
Tnx for looking...Norm VE3CZI

1611. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 02:29:28 UTC
From: Robert C Monsen <rcsurname@comcast.net>
Message-ID: <bSc%b.406115$xy6.2315122@attbi_s02>
Source record: 28293
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"James Meyer" <jmeyer@nowhere.com> wrote in message
news:9feq30hpl30ocgpl8uvpre6556fglnvgvc@4ax.com...
> On Wed, 25 Feb 2004 19:47:49 GMT, "Robert C Monsen"
<rcsurname@comcast.net>
> posted this:
>
> >
> >"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
> >>
> >> Interesting. This is the type I've decided to build as the basis for
> >> my next sweep generator attempt, since it's claimed the config is more
> >> amenable to being pulled than most others (although I won't be
> >> attempting to pull it anything like as much as my first abortive
> >> attempt using a Cmos-based inverter). Do you find it's a reliable and
> >> stable design, Jim? I assume if it wasn't you wouldn't still be using
> >> it!
> >
> >Why not use a VCO built from an LC oscillator? Its really easy to build
one
> >with a single transistor that sweeps your band.
> >
>
> Major problem with that idea is the fact that Paul has no way to
> calibrate or adjust the VCO. That's why he wants to start with a crystal
> oscillator. If it works, he won't have to calibrate it.
>

I thought he wanted a VCO so he could sweep the range from 40.5MHz to 41MHz.
Using a frequency counter, it would be trivial to tune this circuit to start
wherever he wanted. Frequency counters are cheap on ebay:

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=3079423836&category=48701

Using a crystal oscillator would obviously be better, but it sounds like he
is having trouble getting the range he needs out of it.

Regards,
Bob Monsen

> Jim
>

1612. Re: AGC - why delayed? good properties?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 03:18:24 UTC
From: Tom Holden <holden_family@sympatico.ca>
Message-ID: <Szd%b.8675$ee3.415279@news20.bellglobal.com>
Source record: 28296

Avery Fineman wrote:
> [snip]
> As to the attack and decay times you specified, seems
> good to me. That can be set to suit the individual
> listener.
>
> Len Anderson
> retired (from regular hours) electronic engineer person

Here is my survey on which I based my targets:

Release-ms
Receiver Attack-ms Slow Medium Fast

AOR AR7030 2/8 SSB/AM 1800 400 -
Collins 75S-3B/3C 1 600 190 -
Drake R4C 1 1000 350 50
Drake R8B 1 2000 300 -
Grundig Satellit 800 1 3000 300 -
Rockwell/Collins HF-2050
<30 3500-10000 250+/-50 -

U.S. Federal <30 800-1200
SSB/ICW modes
Telecommunication
Recommendation 1050-1998
"HF Radio Automation
Link" <13
<25 Data Mode

Design Target 1-13 1800-3000 300 <25

I wonder if there is any merit in making the attack selectable within a
range of 1-30 ms.

Tom

1613. One Tube Superhet

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 03:32:33 UTC
From: dougwix@aol.com
Message-ID: <20040225223233.12315.00000307@mb-m02.aol.com>
Source record: 28295

Back in the late 60's, I built a one tube superhet from a magazine called Elementary Electronics. I still have that radio but not the magazine. Can anyone tell me what month and year had that project? The circuit uses a 6M11 compactron and a 1N34 detector.
Doug

1614. Re: AGC - why delayed? good properties?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 04:08:09 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c1jrf9igj1@freenet9.carleton.ca>
Source record: 28197

"Tom Holden" (holden_family@sympatico.ca) writes:
> Avery Fineman wrote:
>> [snip]
>> As to the attack and decay times you specified, seems
>> good to me. That can be set to suit the individual
>> listener.
>>
>> Len Anderson
>> retired (from regular hours) electronic engineer person
>
> Here is my survey on which I based my targets:
>
> Release-ms
> Receiver Attack-ms Slow Medium Fast
>
> AOR AR7030 2/8 SSB/AM 1800 400 -
> Collins 75S-3B/3C 1 600 190 -
> Drake R4C 1 1000 350 50
> Drake R8B 1 2000 300 -
> Grundig Satellit 800 1 3000 300 -
> Rockwell/Collins HF-2050
> <30 3500-10000 250+/-50 -
>
>
> U.S. Federal <30 800-1200
> SSB/ICW modes
> Telecommunication
> Recommendation 1050-1998
> "HF Radio Automation
> Link" <13
> <25 Data Mode
>
> Design Target 1-13 1800-3000 300 <25
>
> I wonder if there is any merit in making the attack selectable within a
> range of 1-30 ms.
>
> Tom
>
>
Traditionally, the circuitry was too bulky to make it more complicated,
so there was always tradeoff. With semiconductors the added circuitry to
make attack and decay independent doesn't require much space, or added
cost. Once one has that in place, one can fiddle with the actual times.

Maybe making it completely variable is not useful, but it'll only cost a switch to add multiple times.

Michael VE2BVW

1615. Re: PSK31 article on ARRL website

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 04:10:38 UTC
From: Brian <brianNADA@NOiquestSPAM.net>
Message-ID: <2le%b.21850$hm4.5674@newsread3.news.atl.earthlink.net>
Source record: 28198

Danny,

Don't jump the gun there...he probably needs to have it read to him.

Anyone that goofy probably can't read.

73

"Dan Richardson @mendolink.com>" <<ChangeThisToCallSign> wrote in message
news:ltlq30hbm2a4glkl728q6fp27kf42rc5dm@4ax.com...
> On Thu, 26 Feb 2004 01:26:15 GMT, Bob McConnell
> >
> >Can you tell us where you found it? There are a few of us in the
> >States that aren't dumb enough to join that useless club.
> >
> >Bob McConnell
> >N2SPP
>
> Humm..... Seems useful enough to provide articles you want to read.
>
> Danny, K6MHE
>

1616. Re: One Tube Superhet

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 04:34:47 UTC
From: Capoot <rlcap@xprt.net>
Message-ID: <103qtt98hosn289@corp.supernews.com>
Source record: 28199

Doug,
This is not the circuit you are thinking of but the Fremodyne is a one tube superhet. One triode of a 12AT7 is the local oscillator, the other is a converter/super-regenerative detector at the I.F. frequency. Several radio manufacturers produced them as low cost fm receivers in the late 1940's.
ray

"Dougwix" <dougwix@aol.com> wrote in message news:20040225223233.12315.00000307@mb-m02.aol.com...
> Back in the late 60's, I built a one tube superhet from a magazine called
> Elementary Electronics. I still have that radio but not the magazine. Can
> anyone tell me what month and year had that project? The circuit uses a 6M11
> compactron and a 1N34 detector.
> Doug

1617. Re: Regulated Tube Supplies; was (Converting sig gen to solid state)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 04:49:21 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <103qumb4arjspc3@corp.supernews.com>
Source record: 28200

"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040225160003.06226.00003121@mb-m19.aol.com...
> In article <103plh0k713e046@corp.supernews.com>, "Tim Wescott"
> <tim@wescottnospamdesign.com> writes:
>
> >Your solid state devices will either be really light-weight or will have
> >significantly higher capacitances than the tubes, so it would be very
> >difficult to get your oscillator to track.
> >
-- snip --
> On checking the HV supply of this little receiver, the OB2 strike
> voltage had increased beyond manufacturer's spec so it did not always
> strike and start regulating with power-on. The lone OB2 in spares,
> also 40 years old, was just the opposite, striking below spec.

Antique Electronics Supply has good replacement tubes -- but solid-state regulators for old tube equipment is more fun, kinda like putting EFI on your flathead Ford engine (no kidding, it's done).

-- snip more --
> With a 6.3 V filament arrangement, that would be on the hairy edge
> of regulating at -10% AC line voltage. Filter capacitor needs to be
> high enough for only 5% ripple and rectifier diodes can't be much more
> than 0.7 V forward drop to fit the minimum 7806 regulator 2 V head-
> room.

I would use a new LDO regulator, if I used one at all. On thinking about it after my post, it occurred to me that for the filaments I would be happy with a well-filtered DC supply to keep the filament hum from modulating my RF. If all you have is a 6.3V supply you need really low-drop diodes, however, and your filament transformer's RMS current will go up no matter what.

> Note: The original AC filament voltage was made within certain
> (seldom specified) limits; if that is on the low side also, the 7806
> may poop out during droops in ripple voltage. 7906s were originally
> made in the series for negative voltage regulation, also good for
> providing a minus bias voltage. Tube filaments for indirectly-heated
> cathodes don't care about DC polarity. Slightly-lower than nominal
> voltage will improve heater life.

But can decrease cathode life if the cathode current is high -- even oxide cathodes don't like being temperature starved. Check some of the warnings and recommended start up procedures for 10kW transmitter tubes for some _really_ tight cathode care-and-feeding instructions.

```
-- snip even more --
```

1618. Re: safeguard against brownouts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 05:34:17 UTC
From: U <outhouse@midcoast.com>
Message-ID: <BC62EF8C.AD9%outhouse@midcoast.com>
Source record: 28202

in article 20040225205754.12631.00005171@mb-m28.aol.com, Avery Fineman at averyfineman@aol.com wrote on 2/25/04 20:57:

> In article <BC601BA8.82B%outhouse@midcoast.com>, U <outhouse@midcoast.com>
> writes:
>
>> Where I live, in the woods of Maine, we have power outages.
>>
>> Solar panels and all that stuff is quite expensive, but old car batteries
>> ("old" is when it doesn't get my Diesel started in subzero temps) are not.
>>
>> To make things just a bit comfi it would be nice to leave it in place with a
>> charger attached (right now I tote the charger around when needed).
>>
>> Many things will run right off the batterie(s), others might need an
>> inverter.
>>
>> So basically I am talking about a photovoltaic system without the
>> photovoltaic panels, sort off.
>>
>>
>> So which chargers can I leave permanently attached to a battery?
>>
>> The word 'trickle charger' or 'shore power' comes to mind. How is that
>> different from my old Sears charger which does me good for many years
>> already (but I unhook it after a day at most!).
>
> With good control of charging current and voltage, the battery can
> "float" in the circuit, always connected to the charger or the AC mains
> low voltage supply that can take over from the battery when mains are
> hot. The space folks do that regularly from low earth orbit (90 min.) to
> geo-synchronous (24 hours), using series power diode isolation.
>
> Another thought is to check out computer UPSs which have already
> been engineered and tested, ready to go off the shelf. Those can
> handle up to 600 W loads for small servers and auto-switch to internal
> batter in less than an AC cycle. Industrial-strength UPS models can
> handle much more. A little, cheap UPS sits between my PC box and
> line all the time now, can easily handle 300 W loads for several minutes.
>
> Len Anderson
> retired (from regular hours) electronic engineer person

Len,

You are right about the UPS, but the car batteries are already here as is enough stuff to probably build a suitable charging supply with.

There is one thing which should not stop around here, I just found that out the hard way, and that is the water pump for my hot water solar collectors (she blows like a whale!).
But once I buy that rather expensive DC circulator pump (only 1.5 amps) everything can run off that old battery.

I guess the only thing left to do is to find a little circuit which provides that good control you mention so that that battery can really be left on the charger for good (I hear people commenting that some charging circuits do get confused when they are hooked up to a battery which in turn is providing power to a load but I don't understand why that is).

regards Uwe

1619. WTB: 73 Magazine 5/65-5/66

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 06:47:59 UTC
From: Ed <none-given@this-time>
Message-ID: <O4edndPFxIJaC6Dd4p2dnA@texas.net>
Source record: 28203

I would also consider purchasing complete years 1965 and 1966 or individual issues.
73, Ed.

1620. Re: high quality graph of nice 0-100 analog scale?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 09:16:39 UTC
From: n1jpr@hotmail.com
Message-ID: <95a201e0.0402260116.26ee2ade@posting.google.com>
Source record: 28206

> the radius in the Windows version is in pixels

Perfect! Now I can get excellent results.

Thank you!

1621. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 10:04:47 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <f8fr30pb68abjd7h4bt0iapk4u4cq5h5bj@4ax.com>
Source record: 28207
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Thu, 26 Feb 2004 02:29:28 GMT, "Robert C Monsen"
<rcsurname@comcast.net> wrote:

>Using a crystal oscillator would obviously be better, but it sounds like he
>is having trouble getting the range he needs out of it.

I'm mutiplying up and mixing down this time so getting enough spread
should be a piece of cake this time. The problem with your LC solution
is stability. This will be used for far field measurements at about an
eventual half-Watt output. I don't want to risk straying out of band,
but I do need to probe right up to the edges of it. The sweep
frequency will be controlled by a DC triangle generator voltage
applied to a varicap used as part of the crystal loading. I've
contrived it this way so I can carry out the mods on the filter
without having to keep going back and forth to the TX to vary the
output frequency. Yeah, maybe it's overkill but I've got the time
right now and nothing better to do. :-)

--

The BBC: Licensed at public expense to spread lies.

1622. Re: safeguard against brownouts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 10:38:20 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <103rj4v64jdsfd2@corp.supernews.com>
Source record: 28209

One thing to keep in mind is that battery voltage changes with temperature, and any float or trickle charger that doesn't take this into account can shorten a battery's life considerably. So if you want to get the longest life from your battery, you should make sure the charger is properly temperature compensated.

Roy Lewallen, W7EL

1623. I sell 8875

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 13:16:00 UTC
From: lauradorian <lauradorian@free.fr>
Message-ID: <403df1cc$0$29949$626a14ce@news.free.fr>
Source record: 28210

I sell 2 new tubes 8875 in packing, 350$ + 19$ of shipping.

1624. Re: WTB: 73 Magazine 5/65-5/66

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 14:02:03 UTC
From: "Gary S." <Idontwantspam@net>
Message-ID: <91vr30d7ru5s6i5rth784iaffvsa5m7fqe@4ax.com>
Source record: 28211

On Thu, 26 Feb 2004 00:47:59 -0600, "Ed" <none-given@this-time> wrote:

>I would also consider purchasing complete years 1965 and 1966 or individual
>issues.
>73, Ed.
>
I believe that Wayne Green is still selling back issues, perhaps only
on CD.

Happy trails,
Gary (net.yogi.bear)
---
at the 51st percentile of ursine intelligence

Gary D. Schwartz, Needham, MA, USA
Please reply to: garyDOTschwartzATpoboxDOTcom

1625. Re: safeguard against brownouts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 15:49:52 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <EAo%b.20992$ft.6377@newsfe1-win>
Source record: 28212

> One thing to keep in mind is that battery voltage changes with
> temperature, and any float or trickle charger that doesn't take this
> into account can shorten a battery's life considerably. So if you want
> to get the longest life from your battery, you should make sure the
> charger is properly temperature compensated.
==========
Roy , If the lead acid battery charging current is limited to 0.1C ,(example a 15Ah sealed battery is charged at max 13.8 V with a current not exceeding 1.5A) is temperature compensation then still a necessity to optimise the battery's (usable) life ?
And if it is, in which temperature range ? I have not found this info through Web based tutorials.
I am very interested in this topic since I charge a number of batteries (some non- sealed some sealed) by means of a (150 W max)wind generator and 2 pcs 64Wpeak solar panel.

TIA for any advice

Frank GM0CSZ / KN6WH

1626. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 15:50:37 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <Ly2dnQMf3-e4i6PdUSdV9w@ptd.net>
Source record: 28213

"ChipS" <spike@vollyball.net> wrote in message
news:403bc468_3@corp.newsgroups.com...
>
> Joe, I'd gladly use the Analog Devices DDS chips if they offered them in
> something other than a SadoMasochistic Device (SMD) package. It's a darn
> shame they can't make a limited run (say 10k) of some of these chips in a
> PDIP package for hams and other r.f. experimenters.

That would be cost-prohibitive ... to tool up to make the parts in obsolete
packages
that the production line is no longer using would cost a fortune.

> If they put the AD9835 in a PDIP and sold it for about $10.00 (the TSSOP
> packaged version sells for about $6, I think) , I'd buy a dozen for
various
> projects, but in the tiny SMD package they're nothing but useless to me.
>
> I'm new to the newsgroup and am sure that this is not the first gripe
about
> SMD's, but I refuse to use them - not because I can't (at least not yet),
> but because I don't want to endure the angst.

What "angst"??? SMD parts are not "hard to work with" - they just require
that you learn and use different techniques ... the ARRL has some very good
material on their website on using SMD parts.

73,
Carl - wk3c

1627. Re: safeguard against brownouts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 16:00:30 UTC
From: U <outhouse@midcoast.com>
Message-ID: <BC638250.AEA%outhouse@midcoast.com>
Source record: 28218

in article ZWj%b.3156$Vv.1069@newsfe2-gui.server.ntli.net, Frank Dinger at gm0cszx.xkn6wh@ntlworld.com wrote on 2/25/04 19:13:

>> Where I live, in the woods of Maine, we have power outages.
>>
>> Solar panels and all that stuff is quite expensive, but old car batteries
>> ("old" is when it doesn't get my Diesel started in subzero temps) are not.
>>
>> To make things just a bit comfi it would be nice to leave it in place with
> a
>> charger attached (right now I tote the charger around when needed).
>>
>> Many things will run right off the batterie(s), others might need an
>> inverter.
>>
>> So basically I am talking about a photovoltaic system without the
>> photovoltaic panels, sort off.
>>
>>
>> So which chargers can I leave permanently attached to a battery?
>>
>> The word 'trickle charger' or 'shore power' comes to mind. How is that
>> different from my old Sears charger which does me good for many years
>> already (but I unhook it after a day at most!).
> ========================
> Don't know how much power is involved and the average duration of an outage
> , but the simplest way to keep power during brownouts is to use a
> UPS=Uninterruptable Power Supply with integral batteries . I am using a make
> APC=American Power Corporation , model Back-ups Pro 650 (650 Volt * Amp or
> 650 VA ,which equals 650 Watts when power factor =1) Back -up time at full
> load is approx 15 minutes. UPSes are also available for connection to
> external batteries .
>
> Frank GM0CSZ / KN6WH
>
>

Frank, the biggest brownout I experienced, I guess one could call that already a black out, lastet 2 weeks and was unusual.

These days they can last anywhere from 0.0001 minutes to 10 hours.
The nice thing about the car battery approach is that if things take longer you can use the battery out of your car or truck, you could even drive around the block until a weak battery is recharged.

Uwe

1628. Re: safeguard against brownouts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 16:19:23 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c1l6dn$8p3$1@newshost.mot.com>
Source record: 28214

"Frank Dinger" <gm0cszx.xkn6wh@ntlworld.com> wrote in message
news:ZWj%b.3156$Vv.1069@newsfe2-gui.server.ntli.net...
> > ...we have power outages.
> > Solar panels...expensive, but old car batteries... are not.
> > ...leave it in place with...a charger attached ...
> > So which chargers can I leave permanently attached to a battery?
> > ...'trickle charger' .... How is that
> > different from my old Sears charger which does me good for many years
> > already (but I unhook it after a day at most!).
> ==========
> Don't know how much power is involved and the average duration of an
outage
> , but the simplest way to keep power during brownouts is to use a
> UPS=Uninterruptable Power Supply with integral batteries . I am using a
make
> APC=American Power Corporation , model Back-ups Pro 650 (650 Volt * Amp or
> 650 VA ,which equals 650 Watts when power factor =1) Back -up time at
full
> load is approx 15 minutes. UPSes are also available for connection to
> external batteries .
> Frank GM0CSZ / KN6WH

To add to Roy's and this comment.

The lead acid battery has the characteristic (Others don't) that you can put a constant voltage on it and it will charge itself up (good) and not over-charge (bad) itself. This is called "float" charging. Phone companies and cell phone systems use this. Roy points out that this voltage varies some as the battery temperature changes (I think it goes down cold, not sure). @ room temp (~72 deg F) this is about 13.6 - 13.8 (I think I have mine at 13.7) for a 12 volter.
Your Sears will, most likely, over charge. If it is the transformer, rectifier type, it is not regulated and does not float. It has half wave pulses so even if the meter (If it has one) shows low current, it consists of higher pulses at 120 pps.
A regulated supply will work and if it is always near room temp, you are ok.

Two other caveats. You need an accurate meter and all bets are off for old-weak batteries. I can't comment on what happens to the float voltage to an auto battery that "won't crank"...Sorry

By the way. On Lead acid only, you can measure the terminal voltage to determine the level of charge BUT the battery must have "rested" for some time before. That is NO load and NO charging. Don't know for sure, but I

suspect an hour or two is ok. I don't have ...

(Boy! this guy's full of "not sure" information ain't he?

... the exact numbers for a dead 12V. battery is a little under 12 V, I use 11.9) and a fully charged one is a little over 13V, I use 13.2. You can find numbers with a web search. I got the data sheet for the batteries I have (Gell Cell) Linear interpolation in between gives the% charge.

--
Steve N, K,9;d, c. i My email has no u's.

1629. Re: safeguard against brownouts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 17:33:38 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <W5q%b.1156$6l4.1083@newsfe1-win>
Source record: 28215

"Frank Dinger" <gm0cszx.xkn6wh@ntlworld.com> wrote in message
news:EAo%b.20992$ft.6377@newsfe1-win...
> > One thing to keep in mind is that battery voltage changes with
> > temperature, and any float or trickle charger that doesn't take this
> > into account can shorten a battery's life considerably. So if you want
> > to get the longest life from your battery, you should make sure the
> > charger is properly temperature compensated.
> ==
> Roy , If the lead acid battery charging current is limited to 0.1C
,(example
> a 15Ah sealed battery is charged at max 13.8 V with a current not
exceeding
> 1.5A) is temperature compensation then still a necessity to optimise the
> battery's (usable) life ?
> And if it is, in which temperature range ? I have not found this info
> through Web based tutorials.
> I am very interested in this topic since I charge a number of batteries
> (some non- sealed some sealed) by means of a (150 W max)wind generator
and
> 2 pcs 64Wpeak solar panel.
>
> TIA for any advice
>
> Frank GM0CSZ / KN6WH
==
I should have added to the above that my 'renewable energy' charging voltage
will never exceed 13.8 V.
If the batteries are charged to this voltage level any energy generated by
wind generator and/or solar panels will be 'dumped ' via a number of car
headlight bulbs, by means of a simple opamp/ transistor circuit driving a
number of pass transistors.

Frank GM0CSZ / KN6WH

1630. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 17:53:39 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <6zoOf3EjKjPAFAHj@ifwtech.co.uk>
Source record: 28216

Carl R. Stevenson wrote:
>>
>> Joe, I'd gladly use the Analog Devices DDS chips if they offered them in
>> something other than a SadoMasochistic Device (SMD) package. It's a darn
>> shame they can't make a limited run (say 10k) of some of these chips in a
>> PDIP package for hams and other r.f. experimenters.
>
>That would be cost-prohibitive ... to tool up to make the parts in
>obsolete packages that the production line is no longer using would
>cost a fortune.
>
Absolutely right, Carl - it ain't gonna happen.

A very good article in 'Communications Quarterly' (RIP) explained how the IC samples system works. Basically the economics of complex ICs are the same as for developing a new drug - most of the selling price is aimed at recovering the large upfront development costs. By comparison, once the line is set up and rolling, the *production* cost of the actual parts (or pills) is often quite minimal. It's a very good investment to give away samples as bait, if they're going to help reel in orders for large quantities.

Analog Devices (and also Maxim) are very clear that samples supplied to amateurs are much less likely to bring in orders than those supplied to commercial developers... yet they do it anyway, for the public good, and because it doesn't cost them much. And we're very grateful for it.

But that's as far as their charity extends. As Carl says, nobody is ever going to provide free samples of anything for which there's no commercial market.

Frankly, it's also as far as charity to amateurs and other experimenters *should* extend. They are not in business to featherbed us.

Fortunately, most amateurs have a "can do" attitude towards SMD. This just arrived on another mailing list:

>I broke my neck a few years ago and due to nerve damage my hands don't
>work as well as they did but I was able to do the mod
[which involved SMD work on a $2000 transceiver]
>without much trouble. I did it before the rig had even been on the
>air, brand new out of the box, scary, yes but worth it.

I'm proud to be in the same ham community as that person.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

1631. Reciprocal Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 18:23:23 UTC
From: Chris Trask <christrask@earthlink.net>
Message-ID: <vQq%b.10390$aT1.7683@newsread1.news.pas.earthlink.net>
Source record: 28217

I learned by way of Google that there was a thread on this newsgroup last Summer regarding reciprocal detectors. I'm interested in learning what sort of success any of have you have had with regard to noise immunity and adjacent signal suppression.

Chris


```
,----------------------. High Performance Mixers and
/ What's all this \ Amplifiers for RF Communications
/ extinct stuff, anyhow? /
\ _______,--------------' Chris Trask / N7ZWY
_ |/ Principal Engineer
oo\ Sonoran Radio Research
(__)\ _ P.O. Box 25240
\ \ .' `. Tempe, Arizona 85285-5240
\ \ / \
\ '" \ IEEE Member #40274515
. ( ) \
'-| )__| :. \ Email: christrask@earthlink.net
| | | | \ '. http://www.home.earthlink.net/~christrask
c__; c__; '-..'>.__
```


Graphics by Loek Frederiks

1632. Re: safeguard against brownouts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 21:34:20 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c1los9$6d1$1@newshost.mot.com>
Source record: 28219

Jumping-in, Steve says...

"Frank Dinger" <gm0cszx.xkn6wh@ntlworld.com> wrote in message
news:EAo%b.20992$ft.6377@newsfe1-win...
> > One thing to keep in mind is that battery voltage changes with
> > temperature, and any float or trickle charger that doesn't take this
> > into account can shorten a battery's life considerably. So if you want
> > to get the longest life from your battery, you should make sure the
> > charger is properly temperature compensated.
> ====================================
> Roy , If the lead acid battery charging current is limited to 0.1C
,(example
> a 15Ah sealed battery is charged at max 13.8 V with a current not
exceeding
> 1.5A) is temperature compensation then still a necessity to optimise the
> battery's (usable) life ?

It is the 13.8 voltage limit which must change as the temp changes. The
current limit, I believe, is less of a problem. The lead acid should be
able to take quite high current when it is still charging (in need of
charge) - when it is, it is converting the current into chemical
stored-energy.
This is what the common 'Sears' chargers do. Hit 'em with volts to get
lotsa' current to charge them quickly and make the human responsible for
"stopping at full charge".

--
Steve N, K,9;d, c. i My email has no u's.

When it reaches full charge, then it is producing H & O while decomposing
the water -- and probably heat.

> And if it is, in which temperature range ? I have not found this info
> through Web based tutorials.
> I am very interested in this topic since I charge a number of batteries
> (some non- sealed some sealed) by means of a (150 W max)wind generator
and
> 2 pcs 64Wpeak solar panel.
>
> TIA for any advice
>
> Frank GM0CSZ / KN6WH
>
>

1633. Re: safeguard against brownouts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-26 22:12:16 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <103srq5ibsik9b@corp.supernews.com>
Source record: 28220

Frank Dinger wrote:
>>One thing to keep in mind is that battery voltage changes with
>>temperature, and any float or trickle charger that doesn't take this
>>into account can shorten a battery's life considerably. So if you want
>>to get the longest life from your battery, you should make sure the
>>charger is properly temperature compensated.
>
> ====================================
> Roy , If the lead acid battery charging current is limited to 0.1C ,(example
> a 15Ah sealed battery is charged at max 13.8 V with a current not exceeding
> 1.5A) is temperature compensation then still a necessity to optimise the
> battery's (usable) life ?
> And if it is, in which temperature range ? I have not found this info
> through Web based tutorials.
> I am very interested in this topic since I charge a number of batteries
> (some non- sealed some sealed) by means of a (150 W max)wind generator and
> 2 pcs 64Wpeak solar panel.
>
> TIA for any advice
>
> Frank GM0CSZ / KN6WH

I'm sorry, but I don't have an answer to your question. Actually, I'm not sure there is a simple answer. There are a number of quite different types of lead-acid battery, with different plate compositions, construction, and electrolyte form (e.g., liquid and "starved" -- as far as I can tell, gelled electrolyte is no longer used or is at least very rare, in spite of the fondness hams have for dubbing every sealed cell a "gel cell"). Each has its own characteristics, advantages, and shortcomings. I heartily recommend a careful reading of the manufacturer's recommendations for the particular battery you'll be using.

In more general terms, I don't think any lead acid battery manufacturer recommends constant current charging at any level. Charging to maintain a cell at full charge (float charging) is, in my experience, invariably recommended to be constant voltage, not constant current, with the voltage being temprature compensated (lower voltage at higher temperature). The amount of current is then whatever the battery requires to maintain full charge.

I did a quick google search of

lead-acid battery float charging "temperature compensation"

and came up with quite a few hits including some basic tutorials, a couple of which were http://www.powerstream.com/SLA.htm and

http://www.emrg.ca/ideas&info/gel_cell/battery_care.htm. There are many more available. But again, batteries can differ quite a great deal, so you should really get information specific to the particular battery, or at the very least, to the general class of battery, that you'll be using.

Roy Lewallen, W7EL

1634. FA:HVY DUTY RF SWITCH

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-27 01:42:46 UTC
From: Heytubeguy <heytubeguy@worldnet.att.net>
Message-ID: <qgx%b.101097$hR.1984149@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28221

Great heavy duty RF Switch and other stuff at:
http://cgi6.ebay.com/ws/eBayISAPI.dll?ViewSellersOtherItems&userid=heytubeguy&completed=0&sort=3&since=-1&include=0&page=1&rows=25

73 heytubeguy

1635. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-27 02:31:52 UTC
From: ChipS <spike@vollyball.net>
Message-ID: <403eae1f_5@corp.newsgroups.com>
Source record: 28223

"R J Carpenter" <rcarpen@erols.com> wrote in message
news:403c9d5d$0$3078$61fed72c@news.rcn.com...
>
> Read the latest QEX. The frequency synthesizer article contains hints on
> soldering 0.6 mm spaced surface mount leads.
>
>
Thanks R J, I've already read it. Note the authors mention of the eyesight
and nerve
shattering problem of manually working with small SMD's. This is a hobby to
me; I have done my share of SMD soldering, and will do no more. If others
enjoy it, that's wonderful.
Now where did I put that ARC-5 I got to make a VFO for my Centeral
Electronics
10-B? :-)
73,
--
Chip
KC5UES
real e-mail address:
trilby1989@yahoo.com

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

1636. Re: PSK31 article on ARRL website

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-27 02:35:17 UTC
From: Bob McConnell <rmcconne@NOSPAM.lightlink.com>
Message-ID: <stat30hca17ouc49u2o5cbcud2ncrut5p9@4ax.com>
Source record: 28222

On Wed, 25 Feb 2004 18:20:22 -0800, Dan Richardson
<<ChangeThisToCallSign>@mendolink.com> wrote:

>On Thu, 26 Feb 2004 01:26:15 GMT, Bob McConnell
>>
>>Can you tell us where you found it? There are a few of us in the
>>States that aren't dumb enough to join that useless club.
>>
>>Bob McConnell
>>N2SPP
>
>Humm....... Seems useful enough to provide articles you want to read.
>
>Danny, K6MHE

No the club is useless. But occasionally a few individuals have been
able to publish good ideas before the board recognizes and buries
them.

Bob McConnell
N2SPP

1637. Re: Reciprocal Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-27 03:30:43 UTC
From: Tom Holden <holden_family@sympatico.ca>
Message-ID: <mRy%b.16400$Mo4.567048@news20.bellglobal.com>
Source record: 28224

Chris Trask wrote:
> I learned by way of Google that there was a thread on
> this newsgroup last Summer regarding reciprocal
> detectors. I'm interested in learning what sort of
> success any of have you have had with regard to noise
> immunity and adjacent signal suppression.
>
This was probably the discussion I triggered on the Reciprocating Detector. I had intended to migrate my proto-board version to a more rf friendly board this Winter but still have not done so. I have done little home brewing and even less experimentation with detectors so can't really provide much perspective. I thought it worked well on SSB with carrier, such as CHU, but it
seemed to null the audio at centre lock on DSB signals - as though the sidebands were demodulated with opposite phase. Thought it might have been a consequence of the strays on the proto-board because I am the only one to have observed this phenomenon with the RD, ttbomk.

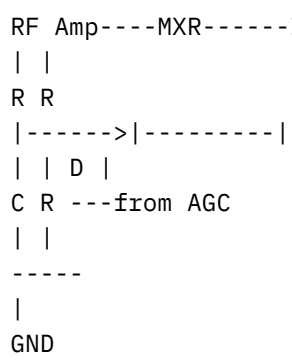
Additionally its self-oscillation frequency pulled on strong bass modulation towards the sideband of SSB suppressed carrier - a kind of FM distortion. It likewise was pulled by strong ICW signals.

Tom

1638. Re: AGC - why delayed? good properties?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-27 03:47:51 UTC
From: Tom Holden <holden_family@sympatico.ca>
Message-ID: <q5z%b.16412$Mo4.569122@news20.bellglobal.com>
Source record: 28225

Steve Nosko wrote:
>> Thanks for the interesting examples, Jan-Martin. The
>> quote was from the 2004 ARRL HB page 17.23 in reference
>> to a schematic/block diagram of a "typical superhet
>> receiver with AGC applied to multiple stages of RF and
>> IF". The RS DX-394 bears some resemblance to this with a
>> resistor in place of the "Delay Diode". It beats me how
>> the AGC in this HB example actually controls the RF gain
>> - the diode appears to block control. A second one in
>> parallel in the opposite direction seems to me to be
>> needed.
> I don't have the circuit, but have two diodes
> pointing down. [snip]
That's interesting, Steve but the circuit looks like this:



Just noticed an asterix by the 'delay' Diode that says it may be replaced by
a test-selected resistor - that's the way the DX-394 is done.

Tom

1639. Re: safeguard against brownouts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-27 09:40:13 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <m4ut30l81vd8bqoqi89qprsll26p450snk@4ax.com>
Source record: 28226

On Tue, 24 Feb 2004 02:05:39 GMT, U <outhouse@midcoast.com> wrote:

>Solar panels and all that stuff is quite expensive, but old car batteries
>("old" is when it doesn't get my Diesel started in subzero temps) are not.

While a cold diesel is hard to start, the capacity of a car battery
drops drastically at cold temperatures and assuming you are referring
to temperatures below 0 F (not 0 C), the capacity of the "old" battery
is well below nominal even in warm conditions.

So even if you can get those cheaply, you may have to have two to get
to the nominal capacity. The optimal float charging voltage may be
different for different old batteries and this can be a problem when
connecting multiple batteries in parallel.

Batteries designed for car starter duty often expect some amount of
vibration, which they do not get when in stationary use.

Unless you get several batteries for free, it is not such a big
bargain as it would look like. I don't know about the car battery
final disposal costs, but if they are high, collecting a large number
of reduced capacity old batteries might be quite expensive when they
are finally disposed.

Paul OH3LWR

1640. Re: Reciprocal Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-27 10:46:13 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <st0t30dqdo79ppd7v2vhrq5dd9vl51970j@4ax.com>
Source record: 28227

On Thu, 26 Feb 2004 18:23:23 GMT, "Chris Trask"
<christrask@earthlink.net> wrote:

> I learned by way of Google that there was a thread on this newsgroup
>last Summer regarding reciprocal detectors. I'm interested in learning what
>sort of success any of have you have had with regard to noise immunity and
>adjacent signal suppression.
>
>Chris
>
can't give you the proper reply, but if you are interested in
different types of mixers and detectors, you might like to see the
sub-harmonic RA3AAE anti-paralell diode mixer or detector which I've
tested in applications on 3.5, 7, 10, 14, 144MHz using 2x 1N4148 with
7dB NF
http://home.online.no/~la8ak/c21.htm - the important rule to succeed
is that it must be terminated with low impedance on all other
frequencies than which should pass. It has been mentioned several
times by G3VA in his column "technical topics" in Radcom
>
73
JM

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

1641. Kenwood SP-430

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-27 11:31:09 UTC
From: Keith <salmo@nf.sympatico.ca>
Message-ID: <1UF%b.105628$IF6.3189394@ursa-nb00s0.nbnet.nb.ca>
Source record: 28228

http://cgi.ebay.ca/ws/eBayISAPI.dll?ViewItem&item=3081063150&category=48709

de Keith VO1AE

1642. Re: safeguard against brownouts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-27 11:50:25 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <YjG%b.99$GQ.29@newsfe1-win>
Source record: 28229

>the biggest brownout I experienced, I guess one could call that
> already a black out, lastet 2 weeks and was unusual.
>
> These days they can last anywhere from 0.0001 minutes to 10 hours.
> The nice thing about the car battery approach is that if things take
longer
> you can use the battery out of your car or truck, you could even drive
> around the block until a weak battery is recharged.
==========
Uwe , With a normal AC system and long duration outages you mentioned an
appropriately sized UPS with external batteries would do the trick
(depending on the power you need)
For full domestic power requirements a 2-4 kWatt petrol or diesel engine
(portable) set would probably be the best.
Many of these sets have both AC and nominal 12v DC (for charging batteries)
Check the Honda range of petrol engine/generator sets ,often advertised and
mentioned by RACES and ARES emergency communicators and by those involved in
Amateur Radio Field Day operation.

Frank GM0CSZ / KN6WH

1643. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-27 12:03:02 UTC
From: peg@slingshot.co.nz
Message-ID: <62069f15.0402270403.3b7e2152@posting.google.com>
Source record: 28230
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"sweep" and "crystal controlled" seem to me to be mutually exclusive.
I once made a sweep generator for a specific job that used crystals
to generate frequency markers,(displayed on a scope). What
output/human interface are you
expecting?

1644. Re: Have you seen this oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-27 12:27:52 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <npdu30tedb6dlbl7ochrbkegncngnro3rh@4ax.com>
Source record: 28231
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 27 Feb 2004 04:03:02 -0800, peg@slingshot.co.nz (GPG) wrote:

>"sweep" and "crystal controlled" seem to me to be mutually exclusive.
>I once made a sweep generator for a specific job that used crystals
>to generate frequency markers,(displayed on a scope). What
>output/human interface are you
>expecting?

I've substituted a ceramic resonator for the usual crystal to get more
'pull' over it. At the moment it's working well and I'm getting stable
output from 3.46Mhz-3.58Mhz which I'm very pleased with. Next problem
is to oust the variable trimmer cap and replace with suitable
varactor(s) for better frequency control...

--

The BBC: Licensed at public expense to spread lies.

1645. Re: One Tube Superhet

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-27 17:09:56 UTC
From: mcalhoun@ksu.edu
Message-ID: <c1ntl4$8th@unix1.cc.ksu.edu>
Source record: 28232

>Back in the late 60's, I built a one tube superhet from a magazine called
>Elementary Electronics. I still have that radio but not the magazine. Can
>anyone tell me what month and year had that project? The circuit uses a 6M11
>compactron and a 1N34 detector.

I've not seen that magazine nor that particular circuit, but I do have a photocopy of "Project E10" (apparently from a set of projects?) with the title "One-Compactron Receiver - All Bands" and a footnote "Reprinted by permission of Popular Electronics magazine", but with NO citation.

FWIW, the particular compactron this article uses is a 6AF11, but it appears to be a one-stage regenerative receiver followed by two stages of audio.

For such a small circuit, it shouldn't be too difficult to regenerate the schematic; I did it once for an All-American Five.

--Myron.
--
Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge
PhD EE (retired). "Barbershop" tenor. CDL(PTXS). W0PBV. (785) 539-4448
NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle, Pistol)

1646. Re: Regulated Tube Supplies; was (Converting sig gen to solid state)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-27 20:25:26 UTC
From: averyfineman@aol.com
Message-ID: <20040227152526.25517.00004485@mb-m15.aol.com>
Source record: 28233

In article <103qumb4arjspc3@corp.supernews.com>, "Tim Wescott"
<tim@wescottnospamdesign.com> writes:

>"Avery Fineman" <averyfineman@aol.com> wrote in message
>news:20040225160003.06226.00003121@mb-m19.aol.com...
>> In article <103plh0k713e046@corp.supernews.com>, "Tim Wescott"
>> <tim@wescottnospamdesign.com> writes:
>>
>> >Your solid state devices will either be really light-weight or will have
>> >significantly higher capacitances than the tubes, so it would be very
>> >difficult to get your oscillator to track.
>> >
> -- snip --
>> On checking the HV supply of this little receiver, the OB2 strike
>> voltage had increased beyond manufacturer's spec so it did not always
>> strike and start regulating with power-on. The lone OB2 in spares,
>> also 40 years old, was just the opposite, striking below spec.
>
>Antique Electronics Supply has good replacement tubes -- but solid-state
>regulators for old tube equipment is more fun, kinda like putting EFI on
>your flathead Ford engine (no kidding, it's done).

There still exist vacuum tubes off someone's shelf even though the
prices for small receiving-type tubes are $5 to $12 each (with any
sort of guarantee of performance)..

It was a bit of a shock to find those old, seemingly trustworthy OB2s
to be quite off specification, especially with the strike voltage off on
the high side. The receiver I was restoring was my own design and it
depended on the shunt regulator to help the stability of two local
oscillators that were L-C tuned, not quartz.

In the early 1960s and the conception of this receiver, regulation of
B+ (as we quaintly referred to HV then, heh heh) was only for expensive
things such as high-quality test instruments. A shunt regulator is fine
for critical things like oscillator stability but it does waste power which
is converted to heat, variable heat depending on AC power line stability.
Changes in local heating (within the cabilnet, chassis) means another
random variable to throw off oscillator stability. Series regulators waste
less heat (general statement, not an absolute) and can hold the HV
more constant over a wider current demand range.

I had accomplished a fairly sensitive and tuning-stable SW receiver
for my father using only 6 tubes for active devices, solid-state rectifiers,
and a single gas shunt regulator. Filament power was a mere 7.6 W
total; a common 5Y3 rectifier needs 10 W for its filament by itself (2 A

at 5 V). Internal heating was minimal and there was no such nonsense
as "waiting for it to warm up," to reach some thermal equilibrium above
room temperature. That "warm up wait" doesn't assure anything about
internal radio stabiity since room temperature may be variable and the
internal power dissipation varies with everything from AC line voltage
to plate current variation from AGC stages changing with signal
strength.

Tube series regulators waste power (and thus dissipate heat) because
the cathode-plate voltage is relatively high to stay within a linear
operating range. NPN transistors are more forgiving for series regulation
work since their emitter-collector voltage can be lower for the same
series current. Two NPNs in my prototype series regulator (plus one
zener) waste only 5 W for at least 2% voltage stability over AC line
(I can tweak that to at least 1$), An OB2 shunt regulator wastes 1.9
W alone and the total dissipation from all in the old supply is about
8 W. I'm already ahead of the game in reducing wasted heat by going
to transistors and zeners.

>-- snip more --
>> With a 6.3 V filament arrangement, that would be on the hairy edge
>> of regulating at -10% AC line voltage. Filter capacitor needs to be
>> high enough for only 5% ripple and rectifier diodes can't be much more
>> than 0.7 V forward drop to fit the minimum 7806 regulator 2 V head-
>> room.
>
>I would use a new LDO regulator, if I used one at all. On thinking about it
>after my post, it occurred to me that for the filaments I would be happy
>with a well-filtered DC supply to keep the filament hum from modulating my
>RF. If all you have is a 6.3V supply you need really low-drop diodes,
>however, and your filament transformer's RMS current will go up no matter
>what.

I had NO "hum in the RF" to begin with...the filament regulation is an
afterthought since varying filament voltage in small receiving tubes used
as oscillators will result in varying fixed-tuned frequency. How much
variation depends on a whole bunch of other factors of the oscillator
circuit design. Using a variable autotransformer for AC mains adjustment
may lead to (sometimes) shocking discovery that 6.3 V filaments do
NOT stay at 6.3 when the AC mains varies +/- 10%. Frequency
counter measurement of the LOs in my case showed some drift with
AC mains voltage change that could only be accounted for by the
filament voltage changing.

The 7800s (positive) and 7900s (negative) all-in-one series regulators
are very common. Their minimum voltage drop for regulation specs is
only 2 VDC for most in each series. Minimum extra space, minimum
components added. Using a negative output and regulator yields
a stable bias supply which can be applied to other circuits or additions.
The 7800s and 7900s are legacy devices and still in production.

>> Note: The original AC filament voltage was made within certain
>> (seldom specified) limits; if that is on the low side also, the 7806
>> may poop out during droops in ripple voltage. 7906s were originally
>> made in the series for negative voltage regulation, also good for
>> providing a minus bias voltage. Tube filaments for indirectly-heated
>> cathodes don't care about DC polarity. Slightly-lower than nominal
>> voltage will improve heater life.
>
>But can decrease cathode life if the cathode current is high -- even oxide
>cathodes don't like being temperature starved. Check some of the warnings
>and recommended start up procedures for 10kW transmitter tubes for some
>_really_ tight cathode care-and-feeding instructions.

MOST homebrew projects involve lower power. Running 6.3 V NOMINAL filaments at 6.0 V isn't going to degrade anything. In my case it has 12.6 V NOMINAL filament voltage reduced to 12.0 V exact. Filament voltages are always given as "nominal" since the indirectly-heated tubes almost always get their filament voltage from transformers. Since ordinary transformers don't regulate, the percentage change of secondary winding voltage is the same as primary winding voltage change....for most of North America that is 115 VAC RMS +/-10 V or about +/-10%. A 6.3 V filament-heater can thus range from 5.7 V to 6.9 V just from the line.

Reduction in the high-temperature thermionic devices' voltage will result in longer operating life. That was true over a half century ago. A friend of mine into model railroading has been running lots and lots of #327 28 V rated aircraft indicator lamps in his track layout, all running at about 18 VAC. NO outages yet due to filament failure in what must be about 3 dozen or so used for 35+ years. Still quite bright enough in ordinary room lighting.

I prefer solid-state all around, including LEDs. I'm keeping most of the vacuum guts of this little receiver still in vacuum tube style just for sentiment's sake. Everyone's mileage varies.

Len Anderson
retired (from regular hours) electronic engineer person

1647. Re: recommended radio kits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-27 20:37:41 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <pUN%b.18030$A12.6228@edtnps84>
Source record: 28234

Best I can suggest right now is finding an old Heath or Knight on eBay.

I'm working on a tube SWL kits, but it won't be ready for sale until the summer.

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

1648. Re: One Tube Superhet

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-27 20:39:04 UTC
From: "Geoffrey G. Rochat" <777geoff777@777pkworks777.777com777>
Message-ID: <c1o9rrcu1@news.utelfla.com>
Source record: 28235

Dougwix <dougwix@aol.com> wrote in message
news:20040225223233.12315.00000307@mb-m02.aol.com...
> Back in the late 60's, I built a one tube superhet from a magazine called
> Elementary Electronics. I still have that radio but not the magazine. Can
> anyone tell me what month and year had that project? The circuit uses a
6M11
> compactron and a 1N34 detector.
> Doug

WA2ISE has a site that describes interesting mods to "All-American 5" AM radios, and the following URL discusses a 3 Compactron set. By changing the rectifier and detector to solid state devices, and either sacrificing IF gain and/or speaker output, it might be possible to squeeze all that into two triodes and a pentode, which is what's in a 6M11. It's not exactly what you're looking for, but it may give you or somebody else some clever ideas:

http://pw2.netcom.com/~wa2ise/radios/compaa3.html

W0PBV wrote elsewhere in this thread of a "Project E10, One-Compactron Receiver - All Bands" article in "Popular Electronics" magazine. This may be the article to which he refers:

http://www.jvgavila.com/compac.htm

1649. Re: One Tube Superhet

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-27 20:47:29 UTC
From: Dale Parfitt <par@parelectronics.com>
Message-ID: <B1O%b.791$rW6.181@nwrddc03.gnilink.net>
Source record: 28236

"mcalhoun" <mcalhoun@ksu.edu> wrote in message
news:c1ntl4$8th@unix1.cc.ksu.edu...
> >Back in the late 60's, I built a one tube superhet from a magazine called
> >Elementary Electronics. I still have that radio but not the magazine. Can
> >anyone tell me what month and year had that project? The circuit uses a
6M11
> >compactron and a 1N34 detector.
>
> I've not seen that magazine nor that particular circuit, but I do have a
> photocopy of "Project E10" (apparently from a set of projects?) with the
> title "One-Compactron Receiver - All Bands" and a footnote "Reprinted by
> permission of Popular Electronics magazine", but with NO citation.
>
> FWIW, the particular compactron this article uses is a 6AF11, but it
appears
> to be a one-stage regenerative receiver followed by two stages of audio.
>
> For such a small circuit, it shouldn't be too difficult to regenerate the
> schematic; I did it once for an All-American Five.
>
> --Myron.
Hi Myron,

I built the 6AF11 regen- it is a very nice little receiver. My version can
be seen at:
http://parelectronics.com/pics/regen2.jpg

Dale W4OP

1650. Re: recommended radio kits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-27 21:36:34 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <Q-Wdncn4K7MpKqLdRVn-gw@comcast.com>
Source record: 28237

www.mfjenterprises.com -- i just got their catalog today, the kits are on page 71 or 72 -- enter "kits" in their search engine.

jack

"Gary Grobe" <wizumwalt@yahoo.com> wrote in message news:wizumwalt-B29DCD.14241527022004@news-server-fe-02.texas.rr.com...
> Hey all,
>
> I'm looking to build a radio and was wondering of any recommendations
> about some really cool ones, good ones, etc... Any of the amateur bands
> will be fine.
>
> Thnxs!

1651. Re: safeguard against brownouts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-28 01:46:56 UTC
From: averyfineman@aol.com
Message-ID: <20040227204656.01632.00000989@mb-m03.aol.com>
Source record: 28238

In article <m4ut30l81vd8bqoqi89qprsll26p450snk@4ax.com>, Paul Keinanen
<keinanen@sci.fi> writes:

>On Tue, 24 Feb 2004 02:05:39 GMT, U <outhouse@midcoast.com> wrote:
>
>>Solar panels and all that stuff is quite expensive, but old car batteries
>>("old" is when it doesn't get my Diesel started in subzero temps) are not.
>
>While a cold diesel is hard to start, the capacity of a car battery
>drops drastically at cold temperatures and assuming you are referring
>to temperatures below 0 F (not 0 C), the capacity of the "old" battery
>is well below nominal even in warm conditions.

Yet they DO start. :-)

I'm familiar with north country snow, ice, and freezing temperatures,
learned to drive in such environments. Automobiles are OUTSIDE
and have to take the entire change of temperatures. An emergency
power backup system does NOT have to have its battery out in the
cold...or hot.

>So even if you can get those cheaply, you may have to have two to get
>to the nominal capacity. The optimal float charging voltage may be
>different for different old batteries and this can be a problem when
>connecting multiple batteries in parallel.

Not absolutely necessary. 12 Volt automobile batteries designed
for LARGE vehicles have rather high ampere-hour ratings.

Do NOT - absolutely - keep batteries in parallel without series
diodes or other protections! One or more batteries in parallel can
effectively "cook" one that is low in voltage.

>Batteries designed for car starter duty often expect some amount of
>vibration, which they do not get when in stationary use.

Outside of bad design and poor quality control, the vehicle battery
source of failure is almost always excessive vibration. When plate
material is shaken off, it collects in the case bottom and can
short out neighboring plates.

>Unless you get several batteries for free, it is not such a big
>bargain as it would look like. I don't know about the car battery
>final disposal costs, but if they are high, collecting a large number
>of reduced capacity old batteries might be quite expensive when they
>are finally disposed.

At most auto parts stores in the USA, one can get a medium-size vehicle lead-acid battery for about $30 and trading in the old one. Prices vary slightly according to region and store. Factory-new batteries, such as Sears "Die-Hard" brand, are available for about twice that, no trade-in. Auto dealership-service centers will probably charge three times that (got stuck for that last year). There is a great variation in lead-acid vehicle battery cost over here so it is worth it to shop around.

My eye doctors' office uses two 12 V lead-acid vehicle batteries for its servers (6 opthalmologists, 2 optometrists)...but only because they have an old UPS designed for 24 V battery back-up. Last year they moved that UPS and batteries to a concealed cabinet instead of being beside the receptionists' desk where all who could see saw it. Much better appearance. :-)

By the way, a small 12 V lead-acid battery designed for motorcycles ought to be good for a heavy QRP rig.

Len Anderson
retired (from regular hours) electronic engineer person

1652. Re: recommended radio kits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-28 02:15:44 UTC
From: john graesser <graesser@tca.net>
Message-ID: <103vub7a7bv6ta3@corp.supernews.com>
Source record: 28239

"Gary Grobe" <wizumwalt@yahoo.com> wrote in message
news:wizumwalt-B29DCD.14241527022004@news-server-fe-02.texas.rr.com...
> Hey all,
>
> I'm looking to build a radio and was wondering of any recommendations
> about some really cool ones, good ones, etc... Any of the amateur bands
> will be fine.
>
> Thnxs!

I can recommend the Tentec tkit line, mine works like a charm.
thanks, John.
KC5DWD

1653. Re: Reciprocal Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-28 15:36:43 UTC
From: Chris Trask <christrask@earthlink.net>
Message-ID: <fA20c.11624$yZ1.3202@newsread2.news.pas.earthlink.net>
Source record: 28240

"Tom Holden" <holden_family@sympatico.ca> wrote in message
news:mRy%b.16400$Mo4.567048@news20.bellglobal.com...
> Chris Trask wrote:
> > I learned by way of Google that there was a thread on
> > this newsgroup last Summer regarding reciprocal
> > detectors. I'm interested in learning what sort of
> > success any of have you have had with regard to noise
> > immunity and adjacent signal suppression.
> >
> This was probably the discussion I triggered on the Reciprocating
> Detector. I had intended to migrate my proto-board version to a
> more rf friendly board this Winter but still have not done so. I
> have done little home brewing and even less experimentation with
> detectors so can't really provide much perspective. I thought it
> worked well on SSB with carrier, such as CHU, but it seemed to
> null the audio at centre lock on DSB signals - as though the
> sidebands were demodulated with opposite phase. Thought it might
> have been a consequence of the strays on the proto-board because
> I am the only one to have observed this phenomenon with the RD.
>
> Additionally its self-oscillation frequency pulled on strong bass
> modulation towards the sideband of SSB suppressed carrier - a kind
> of FM distortion. It likewise was pulled by strong ICW signals.
>

I happened to discover a copy of the original IEEE conference paper in
my files here, and I see that the circuit requires that the input signal be
reduced to a half-wave rectified signal. The Ham Radio articles state that
it was difficult to achieve a faithful half wave signal. I know that I can
overcome this problem with my patented method of augmentation, which I have
used to make very linear 1W HF/VHF/UHF amplifiers. Another problem is that
the circuit needs to be balanced, and in the Ham Radio articles this need is
not faithfully implemented. Looks like there's lots of room for
improvement.

Chris

1654. Re: Converting sig gen to solid state

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-28 18:19:10 UTC
From: fmmck@aol.com
Message-ID: <20040228131910.20365.00000608@mb-m04.aol.com>
Source record: 28241

<< I have an old Heath SG-6 signal generator. It uses two triodes.
I'd like to convert it to solid state. >>

Bill-

Others have supplied more good suggestions than I thought were possible, but I couldn't resist adding to it.

With lower voltage solid state circuits, you probably will need additional amplification to provide the same output you now have. Keeping the output level constant over the entire range could be a challenge.

I seem to recall that there are high voltage FETs available that might be candidates for direct substitution for the tubes. Keeping in mind that a reactive load could stress the FET at double the supply voltage, you might have to reduce B+ slightly.

The suggestion to regulate B+ seems a good idea, but perhaps you only need to do it for the oscillator triode(s). I once replaced a 105 volt VR tube in a Heath HW-100, with a ten watt zener. It was a reverse-polarity diode, so the stud mounted directly to the chassis. That approach might be easier than regulating higher current for the entire circuit.

If you try the approach of keeping the tubes with a regulated DC filament, I wonder if a vacuum tube would be susceptible to the same "filament notching" that panel lamps experience? According to a report I read many years ago, it seems that lamps operating from DC fail sooner on average than lamps operating from AC. Failure analysis showed a notch in the filament develops only on the DC lamps, with failure occuring at that point.

73, Fred, K4DII

1655. Re: safeguard against brownouts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-28 18:26:26 UTC
From: Bruce in Alaska <bruceg@btpost.net>
Message-ID: <bruceg-43235F.09262128022004@netnews.worldnet.att.net>
Source record: 28242

In article <20040227204656.01632.00000989@mb-m03.aol.com>,
averyfineman@aol.com (Avery Fineman) wrote:

> >While a cold diesel is hard to start

Not if you understand the physics of the situation.
Just take your XYL's Hair dryer out and blow hot air
down the air intake. Your diesel will start on the
first crank, first time , every time.

Bruce in alaska
--
add a <2> before @

1656. Quindar Tones (NASA roger beep)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-28 20:57:01 UTC
From: Gery Duyck <Gery@duyck-co.be>
Message-ID: <4041009e$0$1917$ba620e4c@news.skynet.be>
Source record: 28243

I want to make a microphone with quindar tones rogerbeep's.
(as on: http://home.pacifier.com/~garyn/quindar.html)

Anyone knows a circuit for this ?

73'
ON4GDK Gery

1657. Re: recommended radio kits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-28 22:47:13 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <10426k549587jf7@corp.supernews.com>
Source record: 28244

Today there are more really good kits out there then there have ever been. But you need to ask yourself just what are you looking for?

Probably Elecraft is the Cadillac of kits these days ... www.elecraft.com, but their stuff is a little high end. If you are looking to melt some solder after a long hiatus, they may be a little more than you are looking for. On the other hand, their quality and documentation puts the old Heathkits to shame.

Small Wonder Labs has some very nice, lower priced kits www.smallwonderlabs.com. Their stuff is closer to the other end of the price spectrum, but still very highly regarded. Their SW+ series is simple, and has the added advantage of lots and lots of documentation on the net, if you want to re-learn what these things are all about. Their DSW series is one of the most lusted-after rigs among the backpacking set. It's a one man show, however, so deliveries are sometimes a little long.

The American QRP Club www.amqrp.org collects together the kits of a number of QRP clubs. These are often the best deals, but each kit is only available for a short period, so you might not find just what you are looking for at the time you are looking.

If you are looking at low cost and not necessarily the best quality, Dan's has a number of lower end kits www.danssmallpartsandkits.com. Dan's only takes orders by snail mail, so the turnaround is at least two weeks.

For the definitive list, www.qrparci.org/links.html lists many, many places to look for kits.

MFJ and TenTec have been mentioned. MFJ is more on the low quality end, but they are reasonably priced. TenTec has the famous TenTec support behind it, but in my opinion tend to be a little high priced for what you get.

Hope this helps.

..

"Gary Grobe" <wizumwalt@yahoo.com> wrote in message news:wizumwalt-B29DCD.14241527022004@news-server-fe-02.texas.rr.com...
> Hey all,
>
> I'm looking to build a radio and was wondering of any recommendations
> about some really cool ones, good ones, etc... Any of the amateur bands
> will be fine.
>
> Thnxs!

1658. Which DDS chip?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 01:12:41 UTC
From: SWbeginner <SWbeginner@nowhere.com>
Message-ID: <1042f49iu4keg7b@corp.supernews.com>
Source record: 28245

I like to experiment with the Analog Devices DDS for a receiver.
Anyone have a favorite one with good features and least hassle?

1659. Re: recommended radio kits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 01:17:21 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <1042fmnoe1lp117@corp.supernews.com>
Source record: 28147

Boy I wasn't paying attention.

I got the idea you were maybe looking for a receiver, and here is this thing, simple, cheap, unique.

http://www.amqrp.org/kits/tin_ear/

..

1660. Re: Quindar Tones (NASA roger beep)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 01:21:49 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <N8b0c.32891$A12.4287@edtnps84>
Source record: 28246

I dunno about the HAM crowd, but on CB, we throttled people who had those,
other than for skip QSO.

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

1661. Re: Which DDS chip?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 01:27:58 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <1042g3ektf0a6ca@corp.supernews.com>
Source record: 28148

The 9850 seems to be pretty popular. You can plunk one down on a DDS daughtercard from NJQRP or get one of the Far Circuits boards (although in my experience their quality is a tad spotty).

The Tayloe mixer can be fed with a 9854 and that looks like a fun experiment but the 9854 only seems to be available in impossible packages.

..

"SWbeginner" <SWbeginner@nowhere.com> wrote in message news:1042f49iu4keg7b@corp.supernews.com...
> I like to experiment with the Analog Devices DDS for a receiver.
> Anyone have a favorite one with good features and least hassle?
>

1662. Re: Reciprocal Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 01:35:33 UTC
From: Tom Holden <holden_family@sympatico.ca>
Message-ID: <glb0c.24301$253.1641579@news20.bellglobal.com>
Source record: 28149

Chris Trask wrote:
> "Tom Holden" <holden_family@sympatico.ca> wrote in message
> news:mRy%b.16400$Mo4.567048@news20.bellglobal.com...
>> Chris Trask wrote:
>>> I learned by way of Google that there was a thread
>>> on this newsgroup last Summer regarding reciprocal
>>> detectors. I'm interested in learning what sort of
>>> success any of have you have had with regard to noise
>>> immunity and adjacent signal suppression.
>>>
>> This was probably the discussion I triggered on the
>> Reciprocating Detector. I had intended to migrate my
>> proto-board version to a more rf friendly board this
>> Winter but still have not done so. I have done little
>> home brewing and even less experimentation with
>> detectors so can't really provide much perspective. I
>> thought it worked well on SSB with carrier, such as CHU,
>> but it seemed to null the audio at centre lock on DSB
>> signals - as though the sidebands were demodulated with
>> opposite phase. Thought it might have been a consequence
>> of the strays on the proto-board because I am the only
>> one to have observed this phenomenon with the RD.
>>
>> Additionally its self-oscillation frequency pulled on
>> strong bass modulation towards the sideband of SSB
>> suppressed carrier - a kind of FM distortion. It
>> likewise was pulled by strong ICW signals.
>>
>
> I happened to discover a copy of the original IEEE
> conference paper in my files here, and I see that the
> circuit requires that the input signal be reduced to a
> half-wave rectified signal. The Ham Radio articles state
> that it was difficult to achieve a faithful half wave
> signal. I know that I can overcome this problem with my
> patented method of augmentation, which I have used to
> make very linear 1W HF/VHF/UHF amplifiers. Another
> problem is that the circuit needs to be balanced, and in
> the Ham Radio articles this need is not faithfully
> implemented. Looks like there's lots of room for
> improvement.
I would certainly agree that there is need for improvement and hope that
your insight will deliver some!

73, Tom

1663. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 02:21:00 UTC
From: ChipS <spike@vollyball.net>
Message-ID: <40414e08_1@corp.newsgroups.com>
Source record: 28150

Joe,
You seem to be under the impression that SMD's are "new". I obtained my first "flat packs" in 1968. And they were surplus from some type of computer, at that time. Sylvania made them - SUHL was the logic family of these gates and flip-flops; I still have the two boards (less two or three ic's I pulled off to play with) and the data sheets. The data sheets indicate they were made in 1965 and 66.
They couldn't sell the package to anyone but military and commercial customers (neither of which ever wants their boards to be "hackable") then and the DIP became the standard for experimenters. Unfortunately, as you alluded to earlier in this thread, there is not much of an electronic tinkerer's market anymore. Now that more commercial apps. exist, the manufacters can force what few tinkerers there are to accept the more economical to produce SMD packages.
I readily admit that there are only a few options for experimenters when the cold hard facts are faced.
1) gripe and cease building at the cutting edge of ic technology as I have done;
2) buckle down and force oneself to say "SMD soldering is good for me- I deserve it."(I'm sorry, I couldn't resist);
or 3) look for other options - Dave, Mike W, and you have made some good, pertinent comments about daughterboards and adapters (a "Manhattan Style" adapter with the ic soldered on would be just as useable as a DIP adapter - if someone wants to take up Dave's challange.); just to prove that I'm not the old stuck in my ways fart that some probably envision me as, I am investigating DDS out a PCI or AGP slot of a pc (too bad video speed d/a converters are unobtainable.) ;-).
May the hobby continue to grow and be fun for all who find it.

--
Chip
KC5UES
real e-mail address:
trilby1989@yahoo.com

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

1664. Re: safeguard against brownouts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 06:22:09 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <h6p140lnrpgta2dr6i2n7mhcqubpsrbuvt@4ax.com>
Source record: 28151

On Sat, 28 Feb 2004 18:26:26 GMT, Bruce in Alaska <bruceg@btpost.net>
wrote:

>In article <20040227204656.01632.00000989@mb-m03.aol.com>,
> averyfineman@aol.com (Avery Fineman) wrote:
>
>> >While a cold diesel is hard to start
>
>Not if you understand the physics of the situation.
>Just take your XYL's Hair dryer out and blow hot air
>down the air intake. Your diesel will start on the
>first crank, first time , every time.

The problem with diesels is the high compression ratio, so rotating
the crank shaft is the hard part. Just monitor the signal lights in
the dashboard when you try to start.

Running the block heater for half an hour will help a lot, since the
oil flows much more smoothly and the battery will deliver much more
current (if in the engine compartment) due to the higher battery
temperature.

Paul OH3LWR

1665. Surface mount ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 11:53:40 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <kqk0c.993$vY.372@newsfe1-win>
Source record: 28152

In view of all the discussions for and against SMD , it might be useful to point at a component supplier located in Birmingham -England . He is Chris, G8CHW who I recently discovered as having more than 7000 items in stock , even Germanium semiconductors from the 1960s. Have a look at www.modecomponents.co.uk. You'll be surprised what's available,including RF components. He exports to the european continent ,although I imagine he would be happy to also supply US customers .
Another supplier from the Birmingham -England area is JAB Electronics ,who also have various items keeping the radio homebrewer happy : www.jabdog.com . They accept VISA/Mastercard.
Another supplier to check is Sycom , www.sycomcomp.co.uk

Conclusion : Here in the UK there are no problems with getting any electronic components at reasonable prices.

Frank GM0CSZ / KN6WH

1666. Re: Quindar Tones (NASA roger beep)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 12:20:29 UTC
From: Gery Duyck <Gery@duyck-co.be>
Message-ID: <4041d90e$0$1923$ba620e4c@news.skynet.be>
Source record: 28153

It isn't the purpose to transmit these tones!

What I want to do:
Talk over my portable tranceiver all around the house on a couple of
miliwatts.

When I press the PTT button of an extended home brewed microphone
the tone comes up the computer in my shack will set the big tranceiver
active and:
- filter out the tones
- retransmit my signal with the tranceiver

When I release the PTT another tone will be transmitted so the computer
knows to
switch of the tranceiver.

The same way nasa used this I wanna use it to, to remote controll the PTT.
So I can work over a bigger range with less battery power.

The major reason why I want to work with tones is that if outher people are
working
on "my" frequency my rig wil transmit. with the tone it only transmit when I
wan it.

I want to write a computer program that can accept DTMF tones and the "roger
beep" tones.
So I can choose the repeater or freqency I want to operate remotly.

73'
ON4GDK, Gery

"Gregg" <nospam@unknown.org> schreef in bericht
news:N8b0c.32891$A12.4287@edtnps84...
> I dunno about the HAM crowd, but on CB, we throttled people who had those,
> other than for skip QSO.
>
> --
> Gregg
> *It's probably useful, even if it can't be SPICE'd*
> http://geek.scorpiorising.ca

1667. WTD: 222 TRANSVERTER

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 18:47:08 UTC
From: Charlie <okiemansc@yahoo.com>
Message-ID: <Gsq0c.7067$Bz3.3544@okepread05>
Source record: 28154
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.swap

Before I go buy one from DEM just thought I would see if anyone has one they no longer need or is excess to their needs.Homebrew,projects considered.Please state condition and price.
THANKS,
...Charlie...

1668. Re: Quindar Tones (NASA roger beep)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 18:54:47 UTC
From: Rv! <no@spam.here.thanks>
Message-ID: <1078080888.24763.0@damia.uk.clara.net>
Source record: 28155

> Anyone knows a circuit for this ?

More info, but no diagram http://history.nasa.gov/alsj/quindar.html

Rv!

1669. Re: Quindar Tones (NASA roger beep)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 19:19:11 UTC
From: "Dan Richardson"
Message-ID: <hne440p9n86db24qari9tf242du88hhshs@4ax.com>
Source record: 28157

Try a search using "Tone Burst Curcuits"

You should be to find something you can use.

73
Danny, K6MHE

On Sat, 28 Feb 2004 21:57:01 +0100, "Gery Duyck" <Gery@duyck-co.be>
wrote:

>I want to make a microphone with quindar tones rogerbeep's.
>(as on: http://home.pacifier.com/~garyn/quindar.html)
>
>Anyone knows a circuit for this ?
>
>73'
>ON4GDK Gery
>

1670. [Annc] Hybrid DDS/PLL synth project page updated

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 19:30:19 UTC
From: John Miles <jmiles@pop.removethistomailme.net>
Message-ID: <MPG.1aabdda69f913ec69896a3@news-central.giganews.com>
Source record: 28156

For those who were following our earlier thread(s), Richard Hosking's
and my synthesizer article has just been published in the March/April
issue of QEX. I've updated the page at
http://www.qsl.net/ke5fx/synth.html to include a link to our final draft
of the article text in .PDF form (by generous permission from the QEX
editorial staff).

(Hopefully everyone here already has the QEX issue on their desks,
though!)

-- john KE5FX

---
http://www.qsl.net/ke5fx
Note: My E-mail address has been altered to avoid spam

1671. Cap Codes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 19:53:45 UTC
From: Winston <win@here.com>
Message-ID: <0pg440pp4nb2l7dkvb1j2an7s8asdvfrjm@4ax.com>
Source record: 28158

Can anyone tell me that value of cap I am looking at. It reads MP
182k 100v. This is a small disk cap.

Thank you. Win w0lz

1672. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 20:17:53 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <YuacndZiaJij1N_dUSdV9g@ptd.net>
Source record: 28159

"ChipS" <spike@vollyball.net> wrote in message
news:40414e08_1@corp.newsgroups.com...
> I readily admit that there are only a few options for experimenters when
> the cold hard facts are faced.
> 1) gripe and cease building at the cutting edge of ic technology as I have
> done;

A loss - for you *and* for those who might benefit from the fruits of your
experimentation.

> 2) buckle down and force oneself to say "SMD soldering is good for me- I
> deserve it."(I'm sorry, I couldn't resist);

I don't understand the "pain" aspect that folks keep citing ... I'm 53, "my
arms are
too short," and I've had corneal surgery that introduced some very irregular
astigmatism,
but I can still handle SMDs (at least down to 0403). Again, it's a matter
of learning
and using the proper techniques.

You need the following:

One of those adjustable lamps with the circular flourescent lamp and a
magnifier.
An eye loupe (10x) works well for me (for really close inspection).
A couple of small-tiped temperature-controlled soldering irons.
Some flux.
Some solder wick.
Some fine-tipped tweezers (almost needle pointed).
Fine guage solder (for use with the iron). Solder paste is best, though if
you're going to
do much SMD work ... I prefer the "no-clean" type with water soluble flux.

And, the best option, which I have, is a hot air reflow/rework station (I
bought one
brand new on eBay for $315 ... I also bought a "vacuum pen" which is the
easiest way
to pick up SMD parts and place them.)
Note that the hot air station and vacuum pen are NOT necessary to make SMD
work
painless - they are just niceties that I have chosen to invest in to make
the work even
faster and easier.

> or 3) look for other options - Dave, Mike W, and you have made some good,
> pertinent comments about daughterboards and adapters (a "Manhattan Style"
> adapter with the ic soldered on would be just as useable as a DIP
adapter -
> if someone wants to take up Dave's challange.); just to prove that I'm not
> the old stuck in my ways fart that some probably envision me as, I am
> investigating DDS out a PCI or AGP slot of a pc (too bad video speed d/a
> converters are unobtainable.) ;-).

You start kludging all sorts of adaptor boards into the brew and you extend
lead lengths,
making it harder to get decent grounding and introducing all sorts of wierd
impedance
"bumps" - you can get away with it on audio and things that run at really
low clock rates,
but you're asking for trouble with RF or high-speed logic.

> May the hobby continue to grow and be fun for all who find it.

Ah!!! Something we completely agree on :-)

73,
Carl - wk3c

1673. Re: Which DDS chip?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 20:25:13 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <xOKcnf7Lj8Nr19_dUSdV9g@ptd.net>
Source record: 28160

"xpyttl" <xpyttl_nospam@earthling.net> wrote in message
news:1042g3ektf0a6ca@corp.supernews.com...
> The 9850 seems to be pretty popular. You can plunk one down on a DDS
> daughtercard from NJQRP or get one of the Far Circuits boards (although in
> my experience their quality is a tad spotty).
>
> The Tayloe mixer can be fed with a 9854 and that looks like a fun
experiment
> but the 9854 only seems to be available in impossible packages.

The packaging is not "impossible" - it just takes some different techniques
to do the
soldering - read the QEX article on a DDS/PLL synthesiser in the latest
issue of QEX
and check out the SMT stuff on the ARRL website ... DIPs are all but gone -
that is
the reality, and other "through hole" parts are getting (and will continue
to get more and
more) scarce and expensive, as industry has gone to SMT in a BIG way
because:
1) it's better (preformance, due to reduced parasitics from leads, also more
reliable if
done right ...)
2) it's cheaper
3) it allows things to be build smaller
4) it doesn't eat up space on all the layers of the PCB for through holes

73,
Carl - wk3c

1674. Re: Cap Codes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 20:26:11 UTC
From: John Miles <jmiles@pop.removethistomailme.net>
Message-ID: <MPG.1aabeabd1efca9896a4@news-central.giganews.com>
Source record: 28161

In article <0pg440pp4nb2l7dkvb1j2an7s8asdvfrjm@4ax.com>, win@here.com
says...
> Can anyone tell me that value of cap I am looking at. It reads MP
> 182k 100v. This is a small disk cap.
>
> Thank you. Win w0lz
>
>

Sounds like 0.0018 uF, 'K'-tolerance (+/- 10%).

-- jm

---

http://www.qsl.net/ke5fx
Note: My E-mail address has been altered to avoid spam

1675. Re: Cap Codes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 20:31:39 UTC
From: grahamk <g.knott@ntlworld.com>
Message-ID: <j0s0c.1197$qP4.628@newsfe1-win>
Source record: 28162

John Miles wrote:
> In article <0pg440pp4nb2l7dkvb1j2an7s8asdvfrjm@4ax.com>, win@here.com
> says...
>> Can anyone tell me that value of cap I am looking at. It reads MP
>> 182k 100v. This is a small disk cap.
>>
>> Thank you. Win w0lz
>>
>>
>
> Sounds like 0.0018 uF, 'K'-tolerance (+/- 10%).
>
> -- jm
>
> --
> http://www.qsl.net/ke5fx
> Note: My E-mail address has been altered to avoid spam
> --

1800pF
1.8nF

--
--

Beginners and Intermediate Electronics
http://homepage.ntlworld.com/g.knott/index.htm

1676. Re: Quindar Tones (NASA roger beep)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 21:03:14 UTC
From: Gary Schafer <gaschafer@comcast.net>
Message-ID: <6rk440557bsqlu1l4k24h66dpeeie5lee2@4ax.com>
Source record: 28163

Why not use subaudible tones? Much easier to work with and filter out.

73
Gary K4FMX

On Sun, 29 Feb 2004 13:20:29 +0100, "Gery Duyck" <Gery@duyck-co.be>
wrote:

>It isn't the purpose to transmit these tones!
>
>What I want to do:
>Talk over my portable tranceiver all around the house on a couple of
>miliwatts.
>
>When I press the PTT button of an extended home brewed microphone
>the tone comes up the computer in my shack will set the big tranceiver
>active and:
>- filter out the tones
>- retransmit my signal with the tranceiver
>
>When I release the PTT another tone will be transmitted so the computer
>knows to
>switch of the tranceiver.
>
>The same way nasa used this I wanna use it to, to remote controll the PTT.
>So I can work over a bigger range with less battery power.
>
>The major reason why I want to work with tones is that if outher people are
>working
>on "my" frequency my rig wil transmit. with the tone it only transmit when I
>wan it.
>
>I want to write a computer program that can accept DTMF tones and the "roger
>beep" tones.
>So I can choose the repeater or freqency I want to operate remotly.
>
>73'
>ON4GDK, Gery
>
>"Gregg" <nospam@unknown.org> schreef in bericht
>news:N8b0c.32891$A12.4287@edtnps84...
>> I dunno about the HAM crowd, but on CB, we throttled people who had those,
>> other than for skip QSO.
>>
>> --

>> Gregg
>> *It's probably useful, even if it can't be SPICE'd*
>> http://geek.scorpiorising.ca
>

1677. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 21:38:25 UTC
From: averyfineman@aol.com
Message-ID: <20040229163825.08626.00003350@mb-m27.aol.com>
Source record: 28164

In article <40414e08_1@corp.newsgroups.com>, "ChipS" <spike@vollyball.net>
writes:

>Joe,
>You seem to be under the impression that SMD's are "new". I obtained my
>first "flat packs" in 1968. And they were surplus from some type of
>computer, at that time. Sylvania made them - SUHL was the logic family of
>these gates and flip-flops; I still have the two boards (less two or three
>ic's I pulled off to play with) and the data sheets. The data sheets
>indicate they were made in 1965 and 66.

Texas Instruments beat Sylvania by several years with DTL. :-)

I held my first flat pack (from TI), a single DTL flip-flop some time
in 1960. Couldn't believe how TI had managed to cram all that
circuitry in there! :-)

TI beat most of the competition with its introduction of TTL to
replace DTL. Their 7400 and 5400 part numbers have gone into
legacy mode for functional equivalents made by others since.
Those numbers are so common that some CMOS ICs have the
functional-equivalent numbers in their whole part number. :-)

>They couldn't sell the package to anyone but military and commercial
>customers (neither of which ever wants their boards to be "hackable") then
>and the DIP became the standard for experimenters.

The original flat packs were excellent for stacking one on top of the
other in microwelded assemblies for spacecraft. JPL and one maker
of diallyl phthalate plastic holders came up with a kind of "super DIP"
that took the flat packs and etched-copper-foil-on-kapton-film as the
interconnect wiring.

The enemy of the flat packs and first ICs was CO$T. TI and every-
one else had to recoup their ramp-up and development costs and
almost shot themselves doing that. The single DTL flip-flop I held in
1960 cost $24 each! It was cheaper for the mainframe computer
makers to use discrete bipolar circuits than go to DTL and the flat
packs or even to TTL in flat packs. The big break was the
convenience of the dual-inline package and standardization on the
early 0.1 inch layout grid.

It's difficult to hack out welded-in-place flat packs. Many were so
mounted on flat PCBs back before wave-soldering was practical.

A big, big break for hobbyists was RTL from Fairchild. In little round
epoxy bipolar-size packages, those were affordable across the shelf.

My first frequency counter was built from Resistor-Transistor-Logic back in 1968-1969. Cost was prohibitive then to go for TTL in the new DIPs. Problem was that TTL out-performed RTL in speed and ability to progress from SSI to MSI even in the old, original TTL medium-speed family. Once 54H and 74H appeared, RTL was a goner. Mainframe and minicomputer designs standardized on TTL (to TI's delight, no doubt) and the other industrial applications picked up on that. TTL prices dropped. Even more when the 74LS family appeared with PDIP. 74LS became the family of choice for the first microcomputers' "glue" holding them together circuit-wise.

>Unfortunately, as you
>alluded to earlier in this thread, there is not much of an electronic
>tinkerer's market anymore.

I disagree. All kinds of electronic tinkerer's suppliers in certain chain stores (Fry's Electronics in the southwest US has one whole aisle for packaged ICs) and many small mail-order dealers as well as the biggies such as Digi-Key, Mouser, and Newark. Legacy ICs, especially logic, is down to well under $1 per package in singles.

>Now that more commercial apps. exist, the
>manufacters can force what few tinkerers there are to accept the more
>economical to produce SMD packages.

Disagree again. SMT is not necessarily "more economical to produce" compared to DIP. The process is about the same. The driving force is FINISHED ELECTRONIC SYSTEM SIZE and the consumer electronics MARKETPLACE.

Industry estimates put cellular telephones (little two-way 1 GHz radios) at about 3 Billion worldwide. In the USA alone in 2002, the U.S. Bureau of Census stated that there were about 100 Million cell phone subscribers, or roughly one out of three citizens with those tiny "HTs". Cell phones are complex things and are appearing with more and more auxilliary features...the only way to stay in the cell phone market is to make them small and with tiny parts to cram everything in there.

I just replaced the thermostat in my house with a name-brand all-electronic unit having a little LCD indicator (very easy to read, momentary back light) and electronic thermal sensor, battery powered so it won't lose its settings plus several other perqs not possible with the 40-year-old bimetallic strip model. Neat little SMT PCB, no crowding of anything. It is less than half the size of the old one yet has more features.

The MARKET drives certain things, especially so in consumer electronics.

> I readily admit that there are only a few options for experimenters when
>the cold hard facts are faced.

I don't. Looking back over more than a half century of electronics hobby activity the options are FAR more NOW than back then. It's been growing and branching out all that time.

The "cold hard facts" for SOME "experimenters" is that they can't adapt to using semi-discrete ICs in readily-available DIPs but want an all-purpose IC to do the DDS functional dirty work. The heart of a DDS is basically a curious accumulator that must work in a flexible way (several variations on the theme)...that is different than the PLL counter which is just a preset-by-external-control to a fixed countdown. Both share a phase-frequency "detector" (logic circuit) which can be one of two general kinds. The DDS principle is vastly different because of that flexible accumulator and hard to grasp for most folks (took me a long while to get comfortable with it). It takes more wiring in discrete logic than a PLL but both the DDS and PLL can be done that way. "Experimenters" don't always need ultra-small-sized sub-systems for frequency control.

Analog Devices (and some others) have collapsed most of the frequency control sub-system into a single IC. We should ignore the package size and be grateful that one IC saves a lot of discrete packages and wiring. ADI's manufacturing choices are basically market-driven, not "experimenter" driven. There's no guarantee that every ADI IC model will survive in the near future...just like all those other "legacy" ICs, mostly analog, of two and three decades ago that aren't made now. Of about 8 variations of a MOS PLL IC that Motorola made a decade ago (MC145nnn family), only one survives today, the MC145151. Motorola couldn't sustain the cost of continuing to produce something that didn't sell. [Motorola semi split also, but that's another story]

>1) gripe and cease building at the cutting edge of ic technology as I have
>done;

"Cutting edge technology" doesn't require smallness. FUNCTION is the cutting edge. A 5" x 8" PCB DDS made with ordinary logic ICs has the same function as a 1" x 1" area on a PCB done with 1 IC.

>2) buckle down and force oneself to say "SMD soldering is good for me- I
>deserve it."(I'm sorry, I couldn't resist);

An HF-range frequency control sub-system can be made with legacy digitial logic devices off-the-shelf in DIPs. If anyone insists on SMT then they have to get that silly little millimeter soldering iron tip and learn how solder in a small way...or, be inventive like a robotic hobbyist who converted an ordinary toaster-oven into a reflow oven for soldering 60-contact ICs with toothpick-applied solder paste.

Whichever way the construction is done, the prime driver is still FUNCTION.

>or 3) look for other options - Dave, Mike W, and you have made some good,
>pertinent comments about daughterboards and adapters (a "Manhattan Style"
>adapter with the ic soldered on would be just as useable as a DIP adapter -

>if someone wants to take up Dave's challange.); just to prove that I'm not
>the old stuck in my ways fart that some probably envision me as, I am
>investigating DDS out a PCI or AGP slot of a pc (too bad video speed d/a
>converters are unobtainable.) ;-).

"Video speed" D-to-A converters are available. Off the shelf. There's
at least three in every HDTV receiver today. :-)

>May the hobby continue to grow and be fun for all who find it.

Heartily AGREE on that!

Len Anderson
retired (from regular hours) electronic engineer person

1678. Re: Cap Codes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 21:41:10 UTC
From: Winston <win@here.com>
Message-ID: <n2n4405hqg8qb6vbhnt499m2ocmhg15hhk@4ax.com>
Source record: 28165

On Sun, 29 Feb 2004 13:53:45 -0600, Winston <win@here.com> wrote:

>Can anyone tell me that value of cap I am looking at. It reads MP
>182k 100v. This is a small disk cap.
>
>Thank you. Win w0lz

Thank you, both.

Win

1679. Re: Which DDS chip?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 22:32:03 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <1044q3ad7qdig53@corp.supernews.com>
Source record: 28166

"Carl R. Stevenson" <wk3cqth@wk3c.com> wrote in message
news:xOKcnf7Lj8Nr19_dUSdV9g@ptd.net...

> The packaging is not "impossible" - it just takes some different
techniques
> to do the
> soldering - read the QEX article on a DDS/PLL synthesiser in the latest
> issue of QEX

I'm pretty comfortable with SOP's and can get along with a TSSOP's, although I can't say I like it. In that article, he used TQFP's which, although I haven't yet had the need, I suspect I can deal with. I use the same technique for TSSOP's that he describes in the article.

But when I tried to order samples of 9854's the other day, the only choice was BGA's. I have no clue how to deal with them. Yeah, solder paste and an oven MAYBE, but without machine placement seems like a crap shoot.

..

1680. Re: Cap Codes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 22:38:12 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <YGKWyLEUnmQAFAJY@ifwtech.co.uk>
Source record: 28167

John Miles wrote:
>In article <0pg440pp4nb2l7dkvb1j2an7s8asdvfrjm@4ax.com>, win@here.com
>says...
>> Can anyone tell me that value of cap I am looking at. It reads MP
>> 182k 100v. This is a small disk cap.
>>
>> Thank you. Win w0lz
>>
>>
>
>Sounds like 0.0018 uF, 'K'-tolerance (+/- 10%).
>

You can say that "182" as "a 1, an 8 and then 2 zeros, picofarads." So
that's 1 8 00 pF, which is the same as John's .0018uF.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

1681. Homebrewed remote antenna switch.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 22:57:57 UTC
From: James W <change-to-jw22-at-trlp-dot-com@trlp.com>
Message-ID: <1044rjltoqnro85@corp.supernews.com>
Source record: 28168

I'm just starting to think about building a remote antenna switch.

Since I've never played with one of these before.. I'm a bit concerned about what to look for in relays. I'd guess I want SPDT, so that the antennas that are not selected can be grounded. Other than that, I have no idea on what specification I should look for.

I want 12V coils. I need contacts capable of handing ~150W, and just to avoid cooking relays, I guess I need to be concerned about SWR. The antenna switch will be between the exciters and the antenna tuners, to SWR 'should' be low (<2)

Any suggestions on relays?

I, and now to embarrass myself... I'm a bit concerned about the feedline connections.. Most of the antenna switches I've seen, simply connect all the feedline braids to the bulkhead, and run the center connectors to the relays. So.. what does this do to the characteristic impedance of the feedlines? I guess this is the same thing that takes place inside the exiciter, but I just wonder if I need some type of transformers or something..

thanks es 73s

- jim

1682. Re: Which DDS chip?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 23:06:12 UTC
From: John Miles <jmiles@pop.removethistomailme.net>
Message-ID: <MPG.1aac103c48728edb9896a5@news-central.giganews.com>
Source record: 28169

In article <1044q3ad7qdig53@corp.supernews.com>,
xpyttl_nospam@earthling.net says...
> "Carl R. Stevenson" <wk3cqth@wk3c.com> wrote in message
> news:xOKcnf7Lj8Nr19_dUSdV9g@ptd.net...
>
> > The packaging is not "impossible" - it just takes some different
> techniques
> > to do the
> > soldering - read the QEX article on a DDS/PLL synthesiser in the latest
> > issue of QEX
>
> I'm pretty comfortable with SOP's and can get along with a TSSOP's, although
> I can't say I like it. In that article, he used TQFP's which, although I
> haven't yet had the need, I suspect I can deal with. I use the same
> technique for TSSOP's that he describes in the article.

Actually, the 16-pin PLL chips are TSSOPs, while the AD9852/AD9854
packages I used are considered "LQFP" packages. These are a little
thicker than TQFP but are otherwise pretty similar. The DDSes have the
same spacing between pins as the TSSOPs (0.5 mm) but more of 'em (80).

>
> But when I tried to order samples of 9854's the other day, the only choice
> was BGA's. I have no clue how to deal with them. Yeah, solder paste and an
> oven MAYBE, but without machine placement seems like a crap shoot.

That's not good news. BGAs really *are* the end of the world for
homebrewing as far as I'm aware. I have not heard of any techniques for
soldering them by hand.

Interestingly, though, having just checked FindChips.com, Digi-Key
appears to be selling both AD9852ASQs
(http://www.digikey.com/scripts/DkSearch/dksus.dll?PName?Name=AD9852ASQ-
ND&Site=US) and ADF4112 PLLs
(http://www.digikey.com/scripts/DkSearch/dksus.dll?PName?
Name=ADF4112BRU-ND&Site=US). That *is* good news. I'll have to go
update the article page.

-- jm

---
http://www.qsl.net/ke5fx
Note: My E-mail address has been altered to avoid spam

1683. Re: Quindar Tones (NASA roger beep)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 23:11:29 UTC
From: Gery Duyck <Gery@duyck-co.be>
Message-ID: <404271a4$0$310$ba620e4c@news.skynet.be>
Source record: 28170

I saw the info on the nasa website before, that's the idea who made me thinking.

Maybe subaudible tones are better, but anyway I still need a circuit to create a tone
on PTT push and release!
A program is easy written to respond and filter out any tone ...

1684. Re: Reciprocal Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-02-29 23:28:01 UTC
From: "Bob G. Mahrenholz" <bobm@edge.net>
Message-ID: <40427567.634B6433@edge.net>
Source record: 28171

Chris Trask wrote:

> I learned by way of Google that there was a thread on this newsgroup
> last Summer regarding reciprocal detectors. I'm interested in learning what
> sort of success any of have you have had with regard to noise immunity and
> adjacent signal suppression.
>
> Chris
>
> ,----------------------. High Performance Mixers and
> / What's all this \ Amplifiers for RF Communications
> / extinct stuff, anyhow? /
> \ _______,--------------' Chris Trask / N7ZWY
> _ |/ Principal Engineer
> oo\ Sonoran Radio Research
> (__)\ _ P.O. Box 25240
> \ \ .' `. Tempe, Arizona 85285-5240
> \ \ / \
> \ '" \ IEEE Member #40274515
> . ( ) \
> '-|)__| :. \ Email: christrask@earthlink.net
> | | | | \ '. http://www.home.earthlink.net/~christrask
> c__; c__; '-..'>.__
>
> Graphics by Loek Frederiks

I have a reciprocating detector (RD) kit that I purchased from Stirling Olberg, W1SNN, in the early 70's. I have built it into a broadcast band AM receiver to eliminate selective fading distortion. This receiver has switch selection of diode, quasi-synchronous and RD detectors. I could probably run some tests for you using this receiver.

I can also provide a bibliography of articles on the RD if you do not presently have one.

Bob, K4QQK

1685. FS Ad: Electronic Components including TIL311 Hex Displays - LEDs - TTL Chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-01 00:28:16 UTC
From: jrparts@excite.com
Message-ID: <ed45b0c5.0402291628.60f13cd3@posting.google.com>
Source record: 28172
Cross-posted to: rec.ham-radio.swap,rec.radio.amateur.homebrew,uk.radio.amateur

All prices are in US Funds.

QTY. Part # Unit Price Description
---- --------- ---------- -----------
OPTO.

54 TIL311 $7.00 ea. The TI TIL-311 is a Hexadecimal Dot
Matrix Display with integral TTL driver
electronics to accept, store & display
4-bit binary data, Epoxy package
(Note: This part wholesales at about $16.50 each)

8 TIL311A $7.00 ea. The TI TIL-311A is a Hexadecimal Dot
Matrix Display with integral TTL driver
circuit to accept, store & display
4-bit binary data, Plastic package

11 DIS1417 $7.00 ea. The TI DIS-1417 is a Hexadecimal Dot
Matrix Display with integral TTL driver
circuit to accept, store & display
4-bit binary data, Epoxy package

For a copy of the TIL311 Datasheet see:
http://www-s.ti.com/sc/ds/til311.pdf and it is mirrored at
http://umwnt1.physics.lsa.umich.edu/mttc/images/til311.pdf

275 Green LED $0.10 ea. Rectangular 5mm x 2mm face/lens
$17.50 per bag of 250 ($0.07 each) and

7,250 Red LED $0.10 ea. T1 3/4, 5mm Diameter or 0.2" Diameter
Sharp P/N: GL5PR4 (5mA at 1.9V)
$17.50 per bag of 250 ($0.07 each) and
$100 per box of 2000 ($0.05 each)

106 MAN6440 $0.95 ea. Dual Digit, Green 7 Segment display,
0.56" tall character, Common Cathode
$15 per tube of 20 MAN- 6440 ($0.75 ea.)

85 FND6740 $0.95 ea. Dual Digit, Red 7 Segment display,
0.56" tall character, Common Cathode
$15 per tube of 20 FND-6740 ($0.75 ea.)

TTL CHIPS, DIP Package

525 7407N $0.18 ea. $4.00 per tube of 25 ($0.16 each)
Hex Non-Inverted Buffer with
Open-Collector outputs

605 74ALS20AN $0.19 ea. $4.00 per tube of 25 ($0.16 each)
Dual 4-Input Positive NAND Gates

240 74ALS27AN $0.19 ea. $4.00 per tube of 25 ($0.16 each)
Triple 3-Input Positive NOR Gates

1,325 74LS74AN $0.25 ea. $5.00 per tube of 25 ($0.20 each)
Dual D-Type Positive Edge-triggered
Flip-Flops with Preset and Clear.

100 74ALS74AN $0.25 ea. $5.00 per tube of 25 ($0.20 each)
Dual D-Type Positive Edge-triggered
Flip-Flops with Preset and Clear.

RESISTORS

55,900 100 Ohm, 5%, 1/4 Watt Carbon film resistor, $1 per 100,
$15 per box of 5000 or
$100 for 50,000 pieces.

3,400 220 Ohm, 5%, 1/4 Watt Carbon film resistor, $1 per 100,
$12 per box of 3400 or

3,400 680 Ohm, 5%, 1/4 Watt Carbon film resistor, $1 per 100,
$12 per box of 3400 or

A pack of 100 resistors is $4 inclusive shipping to anywhere
in the US and Canada

e-mail: jrparts@excite.com

Minimum purchase $4 including postage.

No shipping is included in the above prices. To quote a
total including shipping, I require your full ZIP code or
postal code in addition to a list of what you are interested
in. Please specify the country for international orders
outside of North America. The shipping you will be quoted
is the cost of the postage stamp (plus insurance if requested).

The only part that I will ship for a total of $4 (by regular
mail) to anywhere in the US and Canada is a pack of 100
resistors.

All components are new. All semi-conductors are stored in
anti-static tubes/bags or on anti-static foam if you purchase
less than a tube/bag.

Offers on the lot are welcome. Keep in mind that I am looking
for a price below wholesale, but more than the commercial buyers
of surplus electronic parts are offering.

1686. Kenwood VFO-820 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-01 02:14:47 UTC
From: "Jim L." <jfladd@flash.net>
Message-ID: <r0x0c.30226$W73.7314@newssvr16.news.prodigy.com>
Source record: 28173

Will appreciate someone emailing me a schematic of Kenwood's remote VFO-820.
Tnx, Jim K8JL, jfladd@flash.net

1687. Re: Which DDS chip?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-01 02:49:01 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <5c6dncu8R4hiOd_dUSdV9g@ptd.net>
Source record: 28174

"xpyttl" <xpyttl_nospam@earthling.net> wrote in message
news:1044q3ad7qdig53@corp.supernews.com...
> "Carl R. Stevenson" <wk3cqth@wk3c.com> wrote in message
> news:xOKcnf7Lj8Nr19_dUSdV9g@ptd.net...
>
> > The packaging is not "impossible" - it just takes some different
> techniques
> > to do the
> > soldering - read the QEX article on a DDS/PLL synthesiser in the latest
> > issue of QEX
>
> I'm pretty comfortable with SOP's and can get along with a TSSOP's,
although
> I can't say I like it. In that article, he used TQFP's which, although I
> haven't yet had the need, I suspect I can deal with. I use the same
> technique for TSSOP's that he describes in the article.
>
> But when I tried to order samples of 9854's the other day, the only choice
> was BGA's. I have no clue how to deal with them. Yeah, solder paste and
an
> oven MAYBE, but without machine placement seems like a crap shoot.

With BGAs you HAVE to reflow solder ... however if the prep is right, they
should
"self-center" (as do most SMDs) on the pads if you're close enough - it's
interesting to
watch manually placed SMD resistors, caps, etc. actually move an center
themselves
up on the pads due to surface tension effects when the solder reflows ... IF
the pads
are well-designed and balanced.

73,
Carl - wk3c

1688. Re: Kenwood VFO-820 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-01 03:43:35 UTC
From: fmmck@aol.com
Message-ID: <20040229224335.24952.00000666@mb-m26.aol.com>
Source record: 28175

<< Will appreciate someone emailing me a schematic of Kenwood's remote VFO-820
>>

Jim-

I don't know if it is any good, but there is one at www.mods.dk:

http://www.mods.dk/downloadmanual.php?File=VFO-820_Schematic.jpg

They have a new web page format with extremely tiny print, but the file size
looks like 625 Kbytes.

73, Fred, K4DII

1689. Space/Astronomy Newsletter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-01 04:30:14 UTC
From: Brian Webb <kd6nrp@earthlink.net>
Message-ID: <q%y0c.15799$aT1.4886@newsread1.news.pas.earthlink.net>
Source record: 28176

Hi All:

I publish a free, e-mail based newsletter regarding missile launches from Vandenberg AFB and other southern California astronomy and space news. Many of the events covered are visible across much of the Southwest.

To subscribe, go to www.spacearchive.info/newsletter.htm

Regards,

Brian Webb

1690. Freeware/shareware ADIF?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-01 14:01:54 UTC
From: fazamy@aol.com
Message-ID: <20040301090154.12281.00000594@mb-m02.aol.com>
Source record: 28177

I'm seeking adif file freeware or shareware. Is this available? I want to do some log combining and need this file.

Tnx
KB2AMY

1691. magazine article sought after

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-01 14:45:58 UTC
From: Reed Park <reedpark@nbnet.nb.ca>
Message-ID: <40434C8E.DF6BD9A2@nbnet.nb.ca>
Source record: 28178

Hi Group

Does anyone have a copy of the September 1963 issue of
Electronics Illustrated ? I am looking for an article called "250 watt
Antenna Tuner" that goes along with the "Scrounger" transmitter
that Ron Evans has been sending out to people who wanted a copy.

If so, would it be possible to scan it and send it to me or have it
posted somewhere ?

Thanks and 7 3
Reed - VE1NU

--

Looking for information on Marconi SMR-3 and
Northern Electric R8119A receivers of WW 2.

ARROW Research (Avro CF-105)
Reed Park
252 Gauvin Road
Dieppe, New Brunswick
Canada E1A1M1

Amateur Radio V E 1 N U
WW II, # 19 SET user
Paraset replica builder and owner of a real one.

1692. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-01 14:58:31 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <qJnqqKAX+0QAFw+$@ddwyer.demon.co.uk>
Source record: 28185

In article <YuacndZiaJij1N_dUSdV9g@ptd.net>, Carl R. Stevenson
<wk3cqth@wk3c.com> writes
>An eye loupe (10x) works well for me (for really close inspection).
I used to have a magnifier that fitted over my glasses but stood forward
by 5 cm or so, this enabled focussing with magnification at a greater
distance in a narrow field , Ive lost it and have hand made another do
others use these.
--
ddwyer

1693. Antenna Tuner

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-01 15:22:47 UTC
From: Tuuk <bangkokbob5001@yahoo.com>
Message-ID: <VFI0c.1543$R37.876@read1.cgocable.net>
Source record: 28181

Hi
I have the MFJ 989C, and I am noticing that I can tune antenna to low SWR but I also have noticed that the SWR often was jumping or spiking and very unusual. I thought it may be coax or antenna or a short but then I noticed also that the inductance coil is very sensitive. If you touch it or tap it this will cause the SWR to spike. Also when it spikes, if you put a little pressure on the Inductance coil knob it will solve the problem. Anyone else have situation such as this? What did you do to fix the problem? I opened it up and cleaned the contacts where I thought the problem was but still didn't correct the problem.
Any ideas ???

1694. Re: Freeware/shareware ADIF?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-01 15:22:52 UTC
From: fazamy@aol.com
Message-ID: <20040301102252.25887.00000557@mb-m01.aol.com>
Source record: 28179

No need to respond to my previous post.
I have found what I was seeking :)

KB2AMY

1695. Re: Freeware/shareware ADIF?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-01 15:36:52 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <1046m53b034gn35@corp.supernews.com>
Source record: 28180

Evan

The question is, what are you trying to do?

ADIF is a file format. It is well documented, and it can be produced with any text editor. Lots of places have the docs, but www.hosenose.com/adif/ seems pretty good.

The ADIF spec, unfortunately, leaves quite a bit of room for interpretation. Different implementors interpret it a bit differently, so you may have a little trouble moving something from one application to another using ADIF.

If you have a paper log that you want to convert to ADIF, most of the logging programs support ADIF exports, although maybe not all the freeware ones. Still, look for any of the popular loggers.

You said you wanted to do some "log file combining". If you have a logger that imports and exports ADIF, simply stick the files together with a text editor. The format is a text format, and if you open an ADIF file with Wordpad it will be pretty obvious what is what.

..

"FAZAMY" <fazamy@aol.com> wrote in message news:20040301090154.12281.00000594@mb-m02.aol.com...
> I'm seeking adif file freeware or shareware. Is this available? I want to do
> some log combining and need this file.
>
> Tnx
> KB2AMY

1696. Re: Kenwood VFO-820 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-01 16:20:33 UTC
From: Bob <balbert@access1.net>
Message-ID: <4M6dnV20ppcl9t7dRVn2gw@ecrii.com>
Source record: 28182

I beleive there is a diagram in the TS-820S manual.

73, Bob

1697. Re: Antenna Tuner

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-01 18:25:27 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <104700n74g5ds7a@corp.supernews.com>
Source record: 28183

" Tuuk" <bangkokbob5001@yahoo.com> wrote in message
news:VFI0c.1543$R37.876@read1.cgocable.net...
> Hi
> I have the MFJ 989C, and I am noticing that I can tune antenna to low SWR
> but I also have noticed that the SWR often was jumping or spiking and very
> unusual. I thought it may be coax or antenna or a short but then I noticed
> also that the inductance coil is very sensitive. If you touch it or tap it
> this will cause the SWR to spike. Also when it spikes, if you put a little
> pressure on the Inductance coil knob it will solve the problem. Anyone
else
> have situation such as this? What did you do to fix the problem? I opened
it
> up and cleaned the contacts where I thought the problem was but still
didn't
> correct the problem.
> Any ideas ???
>
>

1. Check the contacts that you _don't_ think are the problem. Just because it's a roller inductor doesn't mean that you're not the victim of a garden-variety cold solder joint or a loose rivet. I'd check the whole current path from one solder joint to the other (including the other moving contacts -- there's a slip-ring _and_ a roller, yes?).

1a. You might want to try measuring resistance while you wiggle the thing to see where the problem is. This can be difficult and frustrating, but if you manage it you'll know for sure where the problem is.

2. _Only_ after you've verified that it isn't something else, see if you can increase the contact pressure on the questionable joint. I'd think long and hard before I did this on my own equipment, because it'll make it wear out quicker.

1698. Re: Antenna Tuner

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-01 19:09:50 UTC
From: dplatt@radagast.org
Message-ID: <10472julmfa5ufc@corp.supernews.com>
Source record: 28184

>I have the MFJ 989C, and I am noticing that I can tune antenna to low SWR
>but I also have noticed that the SWR often was jumping or spiking and very
>unusual. I thought it may be coax or antenna or a short but then I noticed
>also that the inductance coil is very sensitive. If you touch it or tap it
>this will cause the SWR to spike. Also when it spikes, if you put a little
>pressure on the Inductance coil knob it will solve the problem. Anyone else
>have situation such as this? What did you do to fix the problem? I opened it
>up and cleaned the contacts where I thought the problem was but still didn't
>correct the problem.

I had a problem similar to this with a tuner I bought from a guy at a fleamarket some time ago - a homebrew SPC based on the design in the ARRL handbook of a few years ago. The tuner was worse off than your MFJ - it was jumpy during transmission, _and_ very difficult to get to tune to a low SWR at all.

The problem turned out to be the roller inductor, which (like most of the other parts he'd used) had been recycled from older equipment. It turned out to have two sets of problems:

- The contacts at the end of the main roller were badly gunked up, with dirt and with some form of old lubricant. There was a similar amount of gunk in the bearing area where the contact wheel slides back and forth on its support rod.

- There was a significant amount of pitting on both the contact wheel, and on several sections of the wire on the inductor. I suspect that the previous owner of this inductor had overstressed it, causing arcing which pitted the contact area.

Fortunately, I was able to fix it completely with a bit of effort.

I started out by cleaning all of the dust and dirt off of the roller inductor, using a combination of isopropyl alcohol, and some Caig DeOxIt spray, and wiping with a clean cloth. I also cleaned the contacts at the end of the roller, spraying with DeOxIt and then using cloth to soak up the gunk which had been flushed out by the spray. I repeated this process until all of the contact areas had been flushed out, and no longer emitted any amount of black goo when sprayed. Finally, the contact wheel's central bearing (where it slides/rolls back and forth on a metal rod) needed to be flushed out in the same way.

Fixing the pitting on the roller contact wheel and the wire was the next task. The wheel was easy - it's solid silver, and I was able to burnish it and restore a flat contact surface with a small riffler

file. I used the same approach to buff off the pitting on the roller wire, but in doing so the silver plating on the polished areas was removed and the underlying copper was exposed. I could have left it that way, and just cleaned the wire more often to avoid oxidation, but instead I decided to buy a small silverplating kit (from www.caswellplating.com) and re-plate the wire. Doing so took only a few minutes once I had the kit.

I finished up by giving the wire another cleaning with isopropyl, and then sprayed a small amount of DeOxIt on a clean cotton cloth and wiped down the wire, the roller contact surface, and the metal rod on which the roller slides back and forth. This left all of the electrical-contact surfaces clean, lubricated, and with a thin film of antioxidant protection.

The results were everything I could have hoped for. The "jumpiness" of the roller inductor is completely gone. Once tuned to a low SWR, the SWR stays low during transmission. Fine adjustment of the inductor control result in an easy, smooth change in SWR / reflected power.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

1699. AADE Filter Design SW now free

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-01 20:04:51 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403011204.70764510@posting.google.com>
Source record: 28186

Hi all,

I've occasionally been using the AADE Filter Design software
evaluation version the past couple months, and thought I'd splurge and
spend $25 on it...definitely worth it. But I discovered that I can't
do that now. Now it's free for the downloading.
http://www.aade.com/filter.htm

Thanks to Neil for providing such a great price/performance ratio on
this product. My only connection with AADE so far is as a user of the
previous eval version of Filter Design.

Cheers,
Tom

1700. Re: Frequency Division -- ADI DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-01 22:10:19 UTC
From: Ken Finney <kenneth.c.finney@boeing.com>
Message-ID: <Htx495.GMI@news.boeing.com>
Source record: 28187

"ddwyer" <dd@ddwyer.demon.co.uk> wrote in message
news:qJnqqKAX+0QAFw+$@ddwyer.demon.co.uk...
> In article <YuacndZiaJij1N_dUSdV9g@ptd.net>, Carl R. Stevenson
> <wk3cqth@wk3c.com> writes
> >An eye loupe (10x) works well for me (for really close inspection).
> I used to have a magnifier that fitted over my glasses but stood forward
> by 5 cm or so, this enabled focussing with magnification at a greater
> distance in a narrow field , Ive lost it and have hand made another do
> others use these.

Sewing stores have big magnifiers on arms for people doing needlepoint.
They work very nice.

1701. Re: Kenwood VFO-820 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-01 23:44:29 UTC
From: "Jim L." <jfladd@flash.net>
Message-ID: <xVP0c.30339$q66.2763@newssvr16.news.prodigy.com>
Source record: 28189

Thanks, I found one per Fred's suggestion. Jim

Jim L. <jfladd@flash.net> wrote in message
news:r0x0c.30226$W73.7314@newssvr16.news.prodigy.com...
> Will appreciate someone emailing me a schematic of Kenwood's remote
VFO-820.
> Tnx, Jim K8JL, jfladd@flash.net
>
>

1702. Re: Quindar Tones (NASA roger beep)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-01 23:46:04 UTC
From: Rv! <no@spam.here.thanks>
Message-ID: <1078184765.50007.0@demeter.uk.clara.net>
Source record: 28188

> ...but anyway I still need a circuit to create a tone
> on PTT push and release!

Time to play with a PIC? Use this for PTT delays and the
two tones system or to generate timing and a CTCSS tone.
I prefer the latter. Of course this could be done discretely
for CTCSS using many forms of oscillator and logic.

Rv!

1703. Re: Which DDS chip?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-02 02:14:04 UTC
From: David Bengtson <dbengtson.No.SPAM.please@Remove.me.pobox.com>
Message-ID: <v9r740h8so34in87lb1aejt0jrsjcb811c@4ax.com>
Source record: 28190

On Sun, 29 Feb 2004 15:06:12 -0800, John Miles
<jmiles@pop.removethistomailme.net> wrote:

>In article <1044q3ad7qdig53@corp.supernews.com>,
>xpyttl_nospam@earthling.net says...
>> "Carl R. Stevenson" <wk3cqth@wk3c.com> wrote in message
>> news:xOKcnf7Lj8Nr19_dUSdV9g@ptd.net...
>>
>> > The packaging is not "impossible" - it just takes some different
>> techniques
>> > to do the
>> > soldering - read the QEX article on a DDS/PLL synthesiser in the latest
>> > issue of QEX
>>
>> I'm pretty comfortable with SOP's and can get along with a TSSOP's, although
>> I can't say I like it. In that article, he used TQFP's which, although I
>> haven't yet had the need, I suspect I can deal with. I use the same
>> technique for TSSOP's that he describes in the article.
>
>Actually, the 16-pin PLL chips are TSSOPs, while the AD9852/AD9854
>packages I used are considered "LQFP" packages. These are a little
>thicker than TQFP but are otherwise pretty similar. The DDSes have the
>same spacing between pins as the TSSOPs (0.5 mm) but more of 'em (80).
>
>>
>> But when I tried to order samples of 9854's the other day, the only choice
>> was BGA's. I have no clue how to deal with them. Yeah, solder paste and an
>> oven MAYBE, but without machine placement seems like a crap shoot.
>
>That's not good news. BGAs really *are* the end of the world for
>homebrewing as far as I'm aware. I have not heard of any techniques for
>soldering them by hand.
>

I've done a fair number by hand @ work. They self center nicely, and
don't really require any solder other than the balls. Just some fresh
liquid flux and a heat gun, and a little practice. They do self center
nicely. You can also reflow in a toaster oven if you really want to.
(Not the one in the kitchen, please!).

Dave

1704. Re: WTB: 73 Magazine 5/65-5/66 FOUND

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-02 05:26:23 UTC
From: Ed <none-given@this-time>
Message-ID: <6-ednSOHEL2DgdndRVn-gg@texas.net>
Source record: 28191

Thanks Gary, I looked on his web site without finding them. I did find them elsewhere.
"Gary S." <Idontwantspam@net> wrote in message news:91vr30d7ru5s6i5rth784iaffvsa5m7fqe@4ax.com...
> On Thu, 26 Feb 2004 00:47:59 -0600, "Ed" <none-given@this-time> wrote:
>
> >I would also consider purchasing complete years 1965 and 1966 or individual
> >issues.
> >73, Ed.
> >
> I believe that Wayne Green is still selling back issues, perhaps only
> on CD.
>
> Happy trails,
> Gary (net.yogi.bear)
> --
> at the 51st percentile of ursine intelligence
>
> Gary D. Schwartz, Needham, MA, USA
> Please reply to: garyDOTschwartzATpoboxDOTcom

1705. slow process

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-02 09:57:43 UTC
From: David Lindsay <david@bigpond.com.au>
Message-ID: <0VY0c.2647$KS1.96147@nasal.pacific.net.au>
Source record: 28192

On my first attempt using a recently purchased alcohol still, it took over 6hrs to make around 4 liters of alcohol. We were running the temp steady at around 84 degs. When I finally decided to increase the temp to 90 degs is started flowing faster. Should we have ran it hotter from the start. How long does it usually take to run off 5ltrs.

Any tips would be appreciated

1706. Re: Freeware/shareware ADIF?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-02 13:28:49 UTC
From: fazamy@aol.com
Message-ID: <20040302082849.12315.00000516@mb-m02.aol.com>
Source record: 28193

Thanks xpyttl for your help. I did what I needed to do. The reason for my 1st post was that an explanation I got suggested that I needed to get ADIF from an external source.. However, upon more research, I found that ADIF was already on my logging program. And I exported two log files into ADIF and then imported them into a log file to make one log.

73,
KB2AMY

1707. Re: slow process

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-02 14:33:51 UTC
From: mikea@mikea.ath.cx
Message-ID: <c2260fldo2@puck.litech.org>
Source record: 28194

David Lindsay <david@bigpond.com.au> wrote:
> On my first attempt using a recently purchased alcohol still, it took over
> 6hrs to make around 4 liters of alcohol. We were running the temp steady at
> around 84 degs. When I finally decided to increase the temp to 90 degs is
> started flowing faster. Should we have ran it hotter from the start. How
> long does it usually take to run off 5ltrs.

> Any tips would be appreciated

Well, it appears that in at least one respect .au law _does_ differ
significantly from .us law.

This group, however, is a _radio_ homebrew newsgroup, not an _alcohol_
homebrewing newsgroup -- although some of us resort to alcohol to
recover from the problems inherent in the radio kind of homebrewing.

Just remember that the first 5-10% and the last 5-10% of your run will
be full of things like fusel oils and methanol, and should _not_ be
consumed.

--
"My father, he made whiskey;
His father, he did, too.
We ain't paid no whiskey tax
Since Seventeen-ninety-two."

1708. Re: slow process

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-02 15:35:01 UTC
From: kf4tun@adelphia.net
Message-ID: <wLqdnclqvLIcNNndRVn_iw@adelphia.com>
Source record: 28195

"Mike Andrews" <mikea@mikea.ath.cx> wrote in message
news:c2260f$1do$2@puck.litech.org...
> David Lindsay <david@bigpond.com.au> wrote:
> > On my first attempt using a recently purchased alcohol still, it took
over
> > 6hrs to make around 4 liters of alcohol. We were running the temp steady
at
> > around 84 degs. When I finally decided to increase the temp to 90 degs
is
> > started flowing faster. Should we have ran it hotter from the start. How
> > long does it usually take to run off 5ltrs.
>
> > Any tips would be appreciated
>
> Well, it appears that in at least one respect .au law _does_ differ
> significantly from .us law.
>
> This group, however, is a _radio_ homebrew newsgroup, not an _alcohol_
> homebrewing newsgroup -- although some of us resort to alcohol to
> recover from the problems inherent in the radio kind of homebrewing.
>
> Just remember that the first 5-10% and the last 5-10% of your run will
> be full of things like fusel oils and methanol, and should _not_ be
> consumed.
>
> --
> "My father, he made whiskey;
> His father, he did, too.
> We ain't paid no whiskey tax
> Since Seventeen-ninety-two."

You can still brew it here in the US, but only for personal consumption,
your are allowed 2 or 3 gallons a month per person or each family member.

Best thing to get the info you are looking for is to go to goggle and do a
search for homebrewing.

From personal experience, use the lowest temp, be careful not to scorch the
mash. I was raised in the hills of eastern Kentucky where everyone brewed
their own.

Jim

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).

Version: 6.0.604 / Virus Database: 384 - Release Date: 3/1/04

1709. Re: slow process

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-02 15:42:17 UTC
From: kf4tun@adelphia.net
Message-ID: <rvednXM3MuGqNtndRVn-hw@adelphia.com>
Source record: 28196

<kf4tun@adelphia.net> wrote in message
news:wLqdncIqvLIcNNndRVn_iw@adelphia.com...
>
> "Mike Andrews" <mikea@mikea.ath.cx> wrote in message
> news:c2260fldo2@puck.litech.org...
> > David Lindsay <david@bigpond.com.au> wrote:
> > > On my first attempt using a recently purchased alcohol still, it took
> over
> > > 6hrs to make around 4 liters of alcohol. We were running the temp
steady
> at
> > > around 84 degs. When I finally decided to increase the temp to 90 degs
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> > > started flowing faster. Should we have ran it hotter from the start.
How
> > > long does it usually take to run off 5ltrs.
> >
> > > Any tips would be appreciated
> >
> > Well, it appears that in at least one respect .au law _does_ differ
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> > This group, however, is a _radio_ homebrew newsgroup, not an _alcohol_
> > homebrewing newsgroup -- although some of us resort to alcohol to
> > recover from the problems inherent in the radio kind of homebrewing.
> >
> > Just remember that the first 5-10% and the last 5-10% of your run will
> > be full of things like fusel oils and methanol, and should _not_ be
> > consumed.
> >
> > --
> > "My father, he made whiskey;
> > His father, he did, too.
> > We ain't paid no whiskey tax
> > Since Seventeen-ninety-two."
>
> You can still brew it here in the US, but only for personal consumption,
> your are allowed 2 or 3 gallons a month per person or each family member.
>
> Best thing to get the info you are looking for is to go to goggle and do a
> search for homebrewing.
>
> From personal experience, use the lowest temp, be careful not to scorch
the

> mash. I was raised in the hills of eastern Kentucky where everyone brewed
> their own.
>
> Jim
>
>
Change that goggle search to "moonshine"

Jim

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Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.604 / Virus Database: 384 - Release Date: 3/1/04

1710. Re: slow process

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-02 16:19:21 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <1049j2fiqt9u7a3@corp.supernews.com>
Source record: 28099

<kf4tun@adelphia.net> wrote in message
news:rvednXM3MuGqNtndRVn-hw@adelphia.com...
>
> >
> Change that goggle search to "moonshine"

Back when I was first licensed, I lived down near the corner of Ohio, West Virginia and Kentucky. There were many, many late night QSOs on 6 meter AM. Some of them old boys back in the hills used to have great stories about the revenuers that seemed particularly appropriate in the wee hours.

So, maybe for me it sounds like it is on topic:
rec. --- ummmm, yeah
radio.amateur. --- yeppers - brings back memories
homebrew --- oh yeah

..

1711. Re: safeguard against brownouts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-02 16:44:20 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BC6A2411.B59%outhouse@midcoast.com>
Source record: 28097

Well guys, thanks so much for all this info.

I couldn't access this newsgroup for a few days (server problem) and now I had a whole bunch to read.

First of all in my economic environment (out here in the country) used batteries, their disposal etc. cost next to nothing. Everything else, UPS etc. does cost money.
So good (except for the cold cranking problem, and I will try out the hair dryer routine, I don't discard advice from people in Alaska lightly) batteries of this type will be used. And as Avery pointed out when everything fails even a new battery is quite a bargain.

I read some of the material Roy recommended and it seems that if I keep the battery mostly at constant temperature, and sitting on a cement slab which is heated one can assume relatively constant temperature I would think, I could keep the battery charged (good enough for my purpose) if I attach a voltage limited charger with 13.7 volts.

A battery like that would run a DC circulator pump for days (a pump like this could use 4 amps but it is only ON when the sun is out).

73 Uwe

in article h6p140lnrpgta2dr6i2n7mhcqubpsrbuvt@4ax.com, Paul Keinanen at keinanen@sci.fi wrote on 2/29/04 01:22:

> On Sat, 28 Feb 2004 18:26:26 GMT, Bruce in Alaska <bruceg@btpost.net>
> wrote:
>
>> In article <20040227204656.01632.00000989@mb-m03.aol.com>,
>> averyfineman@aol.com (Avery Fineman) wrote:
>>
>>>> While a cold diesel is hard to start
>>
>> Not if you understand the physics of the situation.
>> Just take your XYL's Hair dryer out and blow hot air
>> down the air intake. Your diesel will start on the
>> first crank, first time , every time.
>
> The problem with diesels is the high compression ratio, so rotating
> the crank shaft is the hard part. Just monitor the signal lights in
> the dashboard when you try to start.
>
> Running the block heater for half an hour will help a lot, since the
> oil flows much more smoothly and the battery will deliver much more

> current (if in the engine compartment) due to the higher battery
> temperature.
>
> Paul OH3LWR
>

1712. Re: slow process

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-02 17:53:30 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403020953.7c732286@posting.google.com>
Source record: 28098

Um, David? Perhaps you should read the group name. This is an amateur radio newsgroup, not a group for homebrew alcohol (or other recreational chemicals). We do get the occasional posting here on those topics, but they're relatively rare.

OTOH, yes, the hotter you run things, the faster they will go, but you'll also carry over more water. That's an advantage of a fractional distillation column, but I suppose you don't have that. You can also make things go faster by increasing the surface area of the liquid in the vessel you're heating: a bigger still. It would also go faster if you pulled a vacuum on the output end, but then be sure to run your condenser cold enough to pull the ethanol out.

"David Lindsay" <david@bigpond.com.au> wrote in message news:<0VY0c.2647$KS1.96147@nasal.pacific.net.au>...
> On my first attempt using a recently purchased alcohol still, it took over
> 6hrs to make around 4 liters of alcohol. We were running the temp steady at
> around 84 degs. When I finally decided to increase the temp to 90 degs is
> started flowing faster. Should we have ran it hotter from the start. How
> long does it usually take to run off 5ltrs.
>
> Any tips would be appreciated

1713. Re: slow process

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-02 18:21:57 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1049k65plg6sj61@corp.supernews.com>
Source record: 28101

<kf4tun@adelphia.net> wrote in message
news:wLqdncIqvLIcNNndRVn_iw@adelphia.com...
>
> "Mike Andrews" <mikea@mikea.ath.cx> wrote in message
> news:c2260fldo2@puck.litech.org...
> > David Lindsay <david@bigpond.com.au> wrote:
> > > On my first attempt using a recently purchased alcohol still, it took
> over
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steady
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> >
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> >
> > Well, it appears that in at least one respect .au law _does_ differ
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> > This group, however, is a _radio_ homebrew newsgroup, not an _alcohol_
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> > Just remember that the first 5-10% and the last 5-10% of your run will
> > be full of things like fusel oils and methanol, and should _not_ be
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> > "My father, he made whiskey;
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>
> You can still brew it here in the US, but only for personal consumption,
> your are allowed 2 or 3 gallons a month per person or each family member.
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> Best thing to get the info you are looking for is to go to goggle and do a
> search for homebrewing.
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> From personal experience, use the lowest temp, be careful not to scorch
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> mash. I was raised in the hills of eastern Kentucky where everyone brewed
> their own.
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> Version: 6.0.604 / Virus Database: 384 - Release Date: 3/1/04
>
>

Better check that. When I started brewing beer in 1980 the law was that you could brew _beer_, but you couldn't distill _anything_ unless it was for fuel and denatured at the catchbasin.

The advice about the first and last of the run is sound, and if you're tight for cash molassas from the feed store is a lot cheaper than buying malted grain or extract (of course, if you know how to malt it yourself you'll do just fine).

1714. ARRL bamboozled by FCC -- BPL Lives, big money talks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-02 18:22:07 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <UtKdnXk5IYmATdndRVn-jQ@comcast.com>
Source record: 28100

the following article appeared in today's Wall Street Journal. Perhaps the suits in Newington believed their own BS. Not a single mention of the interference issues and a whopping endorsement by the FCC's chief engineer.

The Web's New Outlet
Utilities Plan to Send Internet Service
Over Electric Lines, Challenging
Cable Modems and DSL
By KEN BROWN
Staff Reporter of THE WALL STREET JOURNAL

In an age when consumers can choose from 500 TV channels and nearly a dozen phone companies, most who want high-speed Internet access have at best two choices: the local phone company or their cable operator.

Now, another choice may be emerging. Giving new meaning to the phrase "plug and play," a big Midwestern utility is joining with a start-up to offer high-speed Internet access over power lines. The service promises lower prices and more convenience: Consumers can tap into the Internet anywhere they have an electrical outlet in their house.

The new service, announced Tuesday, comes from Cinergy Corp., a Cincinnati-based utility, and Current Communications, a private company controlled by the Berkman family, which made millions on wireless ventures and counts John Malone's Liberty Media Corp. as an investor. All told, the three are putting $70 million into the venture.

The idea of using power lines to send Internet signals to homes has been around for years. It is based on the fact that electricity travels at a far lower frequency than the Internet signal, so the two generally don't interfere. But earlier efforts were disappointments, mostly due to the cost of the equipment needed and technical issues.

Two years ago, a pivotal breakthrough occurred when the industry improved the speed and lowered the price of the modem that plugs into wall sockets to bring the Internet into the home, thanks to advances in semiconductor chips.

The new modem is based on an industry standard called HomePlug, and costs about $30 wholesale. Cinergy will be handing out the modems to customers free of charge. "The modem being there is what drove us to launch this business," says William Berkman, co-founder of Current Communications.

Another technical issue has been how to get the Internet signal through the transformers that step the power down from medium voltage, which runs along the street, to low voltage, which goes into homes. Current Communications says it has solved that problem with a "bridge" that skips the transformer, allowing the signal to go through uninterrupted. It won't say what the

bridge costs.

Top officials at the Federal Communications Commission support such power-line services because they could expand the availability of high-speed, or broadband, Internet access and give consumers more choice of providers, perhaps lowering prices. Last month the agency issued proposed rules for broadband over power lines.

"Is the technology ready for prime time? The answer is yes," says Ed Thomas, the FCC's chief engineer. "The second part of the question is, is the business ready for prime time? The answer is you have to wait and see."

The issue is whether customers will sign up for the service, either by stepping up from dial-up connections or switching from DSL or cable. On the positive side, the power line service is easy to use -- plug in the modem and run a wire to your computer and you're online. But there has been little switching by consumers so far from one broadband service to another, and the growth of broadband has been slowing.

Matt Davis, an analyst with Yankee Group, a Boston-based technology consulting firm, says power-line broadband services lack key features of cable and DSL offerings, such as bundled packages of phone, TV and Internet access. He adds that more than 80% of American households can get high-speed access and that figure will rise to 90% in the next few years. "People continue to say that broadband is unavailable in a lot of places, but that's just not true," Mr. Davis says.

Mr. Berkman says his group has already had discussions about bundling its services, and plans to offer Internet phone service and either video on demand or videogames by the third quarter of this year. He adds that in many places that theoretically can get high-speed access the quality is poor. Cinergy and Current, which tested their offering on 100 homes in the Cincinnati area, say they will target areas where broadband connections are spotty and hope to sign up 20% of homes they pass.

GETTING CONNECTED

Cable modems dominate high-speed Internet access, but some utility companies hope to break into the market by providing broadband connections over their power lines.

Average Cost per Month U.S. Subscribers
(in millions) Growth 2004
(estimate) Pros and Cons
Cable $35-40 15.7 29% Fastest but most expensive
DSL $30-35 6.6 41% Slower but cheaper, especially when bundled with phone services
Power Lines $30-40 N.A. N.A. Fastest for the price, can connect anywhere there's a plug; service is unproven in wide use.
Dial-Up $15-22 39.5 -9% Cheap, but slow and not always on.

Sources: Morgan Stanley; Current Communications

In addition, the partners say they believe they have some cost advantages over DSL service and cable modems, in part because they don't have to send a technician to a customer's house to start service. Instead, customers are simply given the modems, which look like big cellphone chargers. If customers want to work in another room, they plug the adapter into an outlet there. Wireless adapters that broadcast a Wi-Fi signal are also available.

"Now it's up to us to prove the economics," Mr. Berkman says.

This effort appears to be the largest rollout of such power communications to date. Cinergy will start with two neighborhoods in the Cincinnati area and hopes to offer the service to 60,000 of its 1.5 million electricity customers by the end of the year.

The two companies have a second venture to bring high-speed Internet access to 24 million customers elsewhere served by smaller municipal and cooperatively owned power companies, often in rural areas where cable and DSL are not available.

The executives say their service will beat high-speed cable and phone connections on price, convenience and speed. Current and Cinergy plan to sell their service for $29.95 to $39.95 a month, depending on the connection speed. Cable connections typically go for $35 to $40 a month, while DSL lines are $30 to $35, with discounts for bundled services. Most dial-up connections range from $15 to $22 a month.

"We believe we are now the last-mile solution," says Bill Grealis, executive vice president of Cinergy and president of Cinergy Broadband Inc., speaking of the issue of getting high-speed lines to homes. "We are cheaper and faster than DSL or cable."

Several other companies also are in trials of power-line Internet service involving dozens to hundreds of homes and hope to begin commercial service in the next year. The systems have an added benefit for utilities: They can alert them to power outages by monitoring the lines, and can read electric meters automatically and let the utilities manage the use of power during peak demand periods.

These power-line services, if they take off, could be a boon to Internet service providers such as EarthLink Inc. and long-distance companies such as AT&T Corp., both of which are desperate to get direct connections into consumers' homes rather than relying on lines owned by local-phone or cable companies. AT&T demonstrated a voice-over-Internet phone service using power lines at an analysts meeting last week.

This is the second effort by the Berkman family, which made millions as an early investor in cellphone systems, to provide an alternate broadband service. The family, led by Myles Berkman and two sons, William and David, started Teligent Inc., a once high-flying company that hoped to use high-speed wireless connections to provide broadband services to businesses.

The family sold its stake in Teligent as part of a deal to sell its company, the Associated Group, to Mr. Malone's Liberty Media for $3 billion in 1999. Teligent collapsed two years later after it tried to expand too quickly.

With that in mind, Mr. Berkman has focused on keeping costs low and will roll out the power-line service slowly. "Looking at the lessons we learned in the whole telecom boom and bust, we have to be conservative and drive the cash flow," he says of the investment. "We don't do this often, we do this every five or 10 years."

Write to Ken Brown at ken.brown@wsj.com1

1715. Re: slow process

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-02 19:42:32 UTC
From: Roger Gt <not@here.net>
Message-ID: <ls51c.32650$qr7.31174@newssvr25.news.prodigy.com>
Source record: 28102

"Tom Bruhns" wrote
: Um, David? Perhaps you should read the group name. This is an
: amateur radio newsgroup, not a group for homebrew alcohol (or
other
: recreational chemicals). We do get the occasional posting here
on
: those topics, but they're relatively rare.

IT does say "Homebrew" and I believe THAT is homebrew!

Besides most hams I know also make either beer of wine as well as
ham gear!

1716. Re: ARRL bamboozled by FCC -- BPL Lives, big money talks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-02 20:21:42 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <j261c.2646$zu.658@newsfe1-win>
Source record: 28103

> Mr. Berkman says his group has already had discussions about bundling its
> services, and plans to offer Internet phone service and either video on
> demand or videogames by the third quarter of this year. He adds that in
many
> places that theoretically can get high-speed access the quality is poor.
> Cinergy and Current, which tested their offering on 100 homes in the
> Cincinnati area, say they will target areas where broadband connections
are
> spotty and hope to sign up 20% of homes they pass.
==========
Wonder if there are any radio amateurs (hams) in the Cincinetti area where
the system was 'tested'
And if so ,whether they have reported any interference resulting from BPL. I
am sure ARRL will be happy to hear from them.

Let's wait and see.

Here in the UK ,it has gone quiet re PLT = Power Line Transmission (BPL).
In rural areas where telephone exhanges have not as yet been prepared for
ADSL ,people can register their interest in ADSL on the Web.
As soon as a trigger level ,set by British Telecom, has been reached ,
broadband facilities will be installed.
In my telephone area (covering a maximum of 1000 phone connections) the
trigger level is 150 ,whereas to date only 51 have
registered.....So I might enjoy broadband comms during 'after
life' ;)).
However the 'absence of PLT ' (a blessing) will most definitely make me
stick with ham radio.

Frank GM0CSZ / KN6WH

1717. 433MHz or 916MHz ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-02 21:33:29 UTC
From: stanandsue2000REMOVE@yahooREMOVE.com
Message-ID: <4044fc51.25110232@news.compuserve.com>
Source record: 28104

hi, I'm still in process of designing some little tracking transmitters (10-50mw) for model airplanes (take my tech test on Saturday!!) and I'm trying to decide if to go the 400 or 800MHz band approach. The higher frequency would allow a little shorter antenna .. but would be a little more directional (?) ... considering what I'm trying to locate may be out in the weeds somewhere does anyone have any experience which one would be better and why ? TIA stan

1718. Re: 433MHz or 916MHz ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-02 22:26:31 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <104a2gjoro27ec5@corp.supernews.com>
Source record: 28105

"stan" <stanandsue2000REMOVE@yahooREMOVE.com> wrote in message
news:4044fc51.25110232@news.compuserve.com...
> hi, I'm still in process of designing some little tracking
> transmitters (10-50mw) for model airplanes (take my tech test on
> Saturday!!) and I'm trying to decide if to go the 400 or 800MHz band
> approach. The higher frequency would allow a little shorter antenna
> .. but would be a little more directional (?) ... considering what
> I'm trying to locate may be out in the weeds somewhere does anyone
> have any experience which one would be better and why ? TIA stan
>
>

800MHz? That's one question you'll miss...

They'll both be line-of-sight, 900MHz will theoretically have a bit more absorbtion by the vegatation and the circuit will be touchier, but 900MHz is less used -- the ARRL will thank you for populating the band better, and the 70cm crowd will thank you for not adding to the band congestion.

If you can design transmitters you should be taking the Extra. 5WPM is a joke to learn, too. My kid is studying for the tech, since the speed requirement is so absurdly low I'm thinking of upgrading to Extra myself.

Tim Wescott, KG7LI
Wescott Design Services
http://www.wescottdesign.com

1719. Re: 433MHz or 916MHz ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-02 22:43:49 UTC
From: S <fn30@optonline.net>
Message-ID: <F681c.33963$5M6.8602700@news4.srv.hcvlny.cv.net>
Source record: 28106

most newer generation ELT devices are on 406.028, so using 70cm is probably better for longer range, not as much line of site. another thing to realize is what mode you will be using , im guessing some type of FSK.

for what you lack on transmit power, a better designed antenna system and ground tracking receivers wll make up the difference .in range for you

i know you want to build it yourslef, but ou might want to check out ramsey electronics website. they sell 433 and 916MC transmitters and recievers. i have used them in model rockets (433) and they worked great up to about 2000 feet high. i used a 70cm ht with a small beam. to track it.

"Tim Wescott" <tim@wescottnospamdesign.com> wrote in message
news:104a2gjoro27ec5@corp.supernews.com...
>
> "stan" <stanandsue2000REMOVE@yahooREMOVE.com> wrote in message
> news:4044fc51.25110232@news.compuserve.com...
> > hi, I'm still in process of designing some little tracking
> > transmitters (10-50mw) for model airplanes (take my tech test on
> > Saturday!!) and I'm trying to decide if to go the 400 or 800MHz band
> > approach. The higher frequency would allow a little shorter antenna
> > .. but would be a little more directional (?) ... considering what
> > I'm trying to locate may be out in the weeds somewhere does anyone
> > have any experience which one would be better and why ? TIA stan
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> >
>
> 800MHz? That's one question you'll miss...
>
> They'll both be line-of-sight, 900MHz will theoretically have a bit more
> absorbtion by the vegatation and the circuit will be touchier, but 900MHz
is
> less used -- the ARRL will thank you for populating the band better, and
the
> 70cm crowd will thank you for not adding to the band congestion.
>
> If you can design transmitters you should be taking the Extra. 5WPM is a
> joke to learn, too. My kid is studying for the tech, since the speed
> requirement is so absurdly low I'm thinking of upgrading to Extra myself.
>
> --
> Tim Wescott, KG7LI
> Wescott Design Services
> http://www.wescottdesign.com
>

>

1720. Re: ARRL bamboozled by FCC -- BPL Lives, big money talks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-03 00:37:18 UTC
From: wa8ulx@aol.com
Message-ID: <20040302193718.10197.00000684@mb-m03.aol.com>
Source record: 28107

>Perhaps the
>suits in Newington believed their own BS. Not a single mention of the
>interference issues and a whopping endorsement by the FCC's chief engineer.

I truly hope no one really believed the "CBRRL" had any chance in Hell of
winning, or even to be takeb serious

1721. Re: ARRL bamboozled by FCC -- BPL Lives, big money talks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-03 02:45:06 UTC
From: asdf <asdf@qwerty.com>
Message-ID: <Xns94A0C8ED71B20asdfqwerty@68.6.19.6>
Source record: 28108

WA8ULX wrote:

>>Perhaps the
>>suits in Newington believed their own BS. Not a single mention of the
>>interference issues and a whopping endorsement by the FCC's chief
>>engineer.
>
> I truly hope no one really believed the "CBRRL" had any chance in Hell
> of winning, or even to be takeb serious
>

Of course not...they don't contribute enough money to Bush et. al. and they
don't have any lucrative jobs to offer ex-FCC Commissioners...

The technical details are immaterial, only the money matters...

1722. designing a 1240-1300MHz VCO

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-03 14:59:08 UTC
From: St&#65533;phane Rey <sre_prolem@yahoo.com>
Message-ID: <4045f2bc@news.deckpoint.ch>
Source record: 28109

Hello everybody,

I would like to design a VCO able to cover from 1240 and up to 1300 MHz in a PLL system.
This will be part of the 23cm transceiver project.

I've seen that Maxim has the MAX2754, intended for 1.2GHz operation. The datasheet shows it can reach 1300MHz.
Has anybody experienced this component in PLL at such frequencies ?

Otherwise, do you have some schematic examples to suggest with transistor but without PCB coils

Regards

Stephane, F1TJJ

1723. Buy and Sell your Tube Gear!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-03 16:15:59 UTC
From: Jeff James <cbstv@optonline.net>
Message-ID: <3xn1c.43237$5M6.11475096@news4.srv.hcvlny.cv.net>
Source record: 28110

```
The Boatanchor Classifieds
http://www.dealamerica.com/deal/cgi-bin/ads/bcads.cgi
Dedicated to vintage amateur radio!
```

1724. Shaft Coupling Source?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-03 17:20:40 UTC
From: "Dan Richardson"
Message-ID: <9p4c409j2a2mqpdjhrde9s71u43ta01f2i@4ax.com>
Source record: 28112

Can anyone point me to a source for shaft couplings used to add
extensions to ï¿½ inch diameter variable capacitor and/or rotary switch
shafts.

Thanks
Danny, K6MHE

1725. Using Multimedia Headsets

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-03 17:40:38 UTC
From: clvspamblock@yahoo.com
Message-ID: <2d818e2a.0403030940.30300b8@posting.google.com>
Source record: 28111

Hello,

I have a project that requires more than 10 headsets that get lots of rough uses.

I have looked at using multimedia headsets as a cheap source. But worry about impedance matching and making a remote PTT for them. This is all for GMRS radios (several brands)using the common mono 1/8 speaker mono 3/32 mic connector.

I have made an experimental box with two stereo 1/8 jacks that just carry the speakers straight thru and use a simple push button for the mic's PTT. But get a load "spisszt" just as I press the button.

--Chris Vancil

1726. Re: Shaft Coupling Source?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-03 17:57:31 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <104c74667f37eff@corp.supernews.com>
Source record: 28113

"Dan Richardson @mendolink.com>" <<ChangeThisToCallSign> wrote in message
news:9p4c409j2a2mqpdjhrde9s71u43ta01f2i@4ax.com...
> Can anyone point me to a source for shaft couplings used to add
> extensions to inch diameter variable capacitor and/or rotary switch
> shafts.
>
> Thanks
> Danny, K6MHE
>

Surplus Sales of Nebraska (www.surplussales.com) should have these.

1727. Re: Shaft Coupling Source?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-03 18:32:43 UTC
From: ChipS <spike@vollyball.net>
Message-ID: <404627b1$1_4@corp.newsgroups.com>
Source record: 28114

"Dan Richardson @mendolink.com>" <<ChangeThisToCallSign> wrote in message
news:9p4c409j2a2mqpdjhrde9s71u43ta01f2i@4ax.com...
> Can anyone point me to a source for shaft couplings used to add
> extensions to inch diameter variable capacitor and/or rotary switch
> shafts.
>
> Thanks
> Danny, K6MHE
>
There is a cheap technique for making your own that I have used. A regular
plastic soda straw fits closely around a 1/4" shaft. Either glue or clamp it
onto the shaft and have the rest of the straw filled with epoxy or a glued
in wooden dowel to the length you need . Makes a nice insulated shaft
extension.

--
Chip
KC5UES
real e-mail address:
trilby1989@yahoo.com

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

1728. Re: Antenna Tuner

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-03 19:14:34 UTC
From: Tuuk <bangkokbob5001@yahoo.com>
Message-ID: <l8q1c.4078$n37.195141@read2.cgocable.net>
Source record: 28115

Thanks for the advice,
Are there any concerns to having the case off that piece of equipment and transmitting? I mean having your tools touching certain parts along the transmission trail while transmitting or any rf problems with the unit open.

Thanks again

"Dave Platt" <dplatt@radagast.org> wrote in message news:10472julmfa5ufc@corp.supernews.com...
> >I have the MFJ 989C, and I am noticing that I can tune antenna to low SWR
> >but I also have noticed that the SWR often was jumping or spiking and very
> >unusual. I thought it may be coax or antenna or a short but then I noticed
> >also that the inductance coil is very sensitive. If you touch it or tap it
> >this will cause the SWR to spike. Also when it spikes, if you put a little
> >pressure on the Inductance coil knob it will solve the problem. Anyone else
> >have situation such as this? What did you do to fix the problem? I opened it
> >up and cleaned the contacts where I thought the problem was but still didn't
> >correct the problem.
>
> I had a problem similar to this with a tuner I bought from a guy at a
> fleamarket some time ago - a homebrew SPC based on the design in the
> ARRL handbook of a few years ago. The tuner was worse off than your
> MFJ - it was jumpy during transmission, _and_ very difficult to get to
> tune to a low SWR at all.
>
> The problem turned out to be the roller inductor, which (like most of
> the other parts he'd used) had been recycled from older equipment. It
> turned out to have two sets of problems:
>
> - The contacts at the end of the main roller were badly gunked up, with
> dirt and with some form of old lubricant. There was a similar
> amount of gunk in the bearing area where the contact wheel slides
> back and forth on its support rod.
>
> - There was a significant amount of pitting on both the contact wheel,
> and on several sections of the wire on the inductor. I suspect that
> the previous owner of this inductor had overstressed it, causing
> arcing which pitted the contact area.

>
> Fortunately, I was able to fix it completely with a bit of effort.
>
> I started out by cleaning all of the dust and dirt off of the roller
> inductor, using a combination of isopropyl alcohol, and some Caig
> DeOxIt spray, and wiping with a clean cloth. I also cleaned the
> contacts at the end of the roller, spraying with DeOxIt and then using
> cloth to soak up the gunk which had been flushed out by the spray. I
> repeated this process until all of the contact areas had been flushed
> out, and no longer emitted any amount of black goo when sprayed.
> Finally, the contact wheel's central bearing (where it slides/rolls
> back and forth on a metal rod) needed to be flushed out in the same
> way.
>
> Fixing the pitting on the roller contact wheel and the wire was the
> next task. The wheel was easy - it's solid silver, and I was able to
> burnish it and restore a flat contact surface with a small riffler
> file. I used the same approach to buff off the pitting on the roller
> wire, but in doing so the silver plating on the polished areas was
> removed and the underlying copper was exposed. I could have left it
> that way, and just cleaned the wire more often to avoid oxidation, but
> instead I decided to buy a small silverplating kit (from
> www.caswellplating.com) and re-plate the wire. Doing so took only a
> few minutes once I had the kit.
>
> I finished up by giving the wire another cleaning with isopropyl, and
> then sprayed a small amount of DeOxIt on a clean cotton cloth and
> wiped down the wire, the roller contact surface, and the metal rod on
> which the roller slides back and forth. This left all of the
> electrical-contact surfaces clean, lubricated, and with a thin film of
> antioxidant protection.
>
> The results were everything I could have hoped for. The "jumpiness"
> of the roller inductor is completely gone. Once tuned to a low SWR,
> the SWR stays low during transmission. Fine adjustment of the
> inductor control result in an easy, smooth change in SWR / reflected
> power.
>
> --
> Dave Platt <dplatt@radagast.org> AE6EO
> Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
> I do _not_ wish to receive unsolicited commercial email, and I will
> boycott any company which has the gall to send me such ads!

1729. Re: Antenna Tuner

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-03 20:05:35 UTC
From: dplatt@radagast.org
Message-ID: <104cekf9o8tt52c@corp.supernews.com>
Source record: 28117

In article <l8q1c.4078$n37.195141@read2.cgocable.net>,
Tuuk <bangkokbob5001@yahoo.com> wrote:

>Thanks for the advice,

>Are there any concerns to having the case off that piece of equipment and
>transmitting? I mean having your tools touching certain parts along the
>transmission trail while transmitting or any rf problems with the unit open.

There are certainly high voltages present inside the tuner when you're
transmitting. I would not ever touch the tuner components or wiring,
with fingers or tools, when transmitting. The _most_ I might to,
would be to transmit at low power into a dummy load, and tap various
components with a long well-insulated stick of some sort, to see if
the SWR jumped around... and if I were doing this I'd certainly apply
standard high-voltage precautions (wear insulated shoes, hold stick in
one hand and keep other hand in back pocket).

As to RF coming out with the cover off - I've always heard that a
well-designed-and-constructed tuner will not radiate a significant
amount of RF even if the case is not a shielded one. Cebik, for
example, writes that "Well-wired ATUs do not radiate, consisting of
passive components only, so a metal case is not required" and
constructed an L-C-L tuner with a case made out of plexiglass.

"Aluminum L-stock pieces around the case perimeter link the sides and
bottom of the case, with an independent top piece of plexiglass and a
rim of L-stock to hold it in place. Vertical L-stock at the corners is
electrically connected to the grounded chassis rails. Only the top
perimeter pieces float, but have shown no detectable RF, either to my
finger tips or by detuning the circuit from semi-assembled settings."

http://www.cebik.com/lclatu.html

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

1730. Re: Shaft Coupling Source?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-03 20:49:57 UTC
From: denton <denton@oregontrail.net>
Message-ID: <c25fttfic1@news.oregontrail.net>
Source record: 28118

Look in parts bins at hardware store for nylon washer area....
"Dan Richardson @mendolink.com>" <<ChangeThisToCallSign> wrote in message
news:9p4c409j2a2mqpdjhrde9s71u43ta01f2i@4ax.com...
> Can anyone point me to a source for shaft couplings used to add
> extensions to inch diameter variable capacitor and/or rotary switch
> shafts.
>
> Thanks
> Danny, K6MHE
>

1731. Re: Antenna Tuner

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-03 21:06:08 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <104ci62fc3fuid1@corp.supernews.com>
Source record: 28119

Dave Platt wrote:
> . . .
> As to RF coming out with the cover off - I've always heard that a
> well-designed-and-constructed tuner will not radiate a significant
> amount of RF even if the case is not a shielded one. Cebik, for
> example, writes that "Well-wired ATUs do not radiate, consisting of
> passive components only, so a metal case is not required" and
> constructed an L-C-L tuner with a case made out of plexiglass.
> . . .

I guess we each have our own definition of "significant". Get a small fluorescent tube. Hold it near one end and wave the other near the tuner coil. Depending on your power level, tuner setting, and antenna impedance, the result might spur you to think about the meaning of "significant".

Roy Lewallen, W7EL

1732. request for introduction

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-03 21:51:51 UTC
From: GARY WAINWRIGHT <noblehouse@yebo.co.za>
Message-ID: <c25cat$b1m$5@ctb-nnrp2.saix.net>
Source record: 28116

HI
MY NAME IS GARY WAINWRIGHT AND I`M FROM NOBLEHOUSE INFACT I OWN THE COMPANY
NOBLEHOUSE SUPPLIES SOLUTIONS TO PEOPLE WHO HAVE A DESIRE TO SUPPLEMENT THEIR INCOME WITH
HASSLE FREE AND NON TIME CONSUMING ACTIVITIES

I HAVE YET TO MEET A HOUSEHOLD THAT COULD NOT DO WITH A FEW EXTRA`S. PLEASE DONT GET ME
WRONG I DO NOT KNOW YOUR FULL POTENTIAL SO I CANNOT MAKE CLAIMS TO FAME AND RICHES HOWEVER
I FEEL I HAVE AN OBLIGATION TO AT LEAST ALLOW OTHERS TO REACH FOR THEIR STARS
IGNORANCE IS NOT BLISS!
WILL YOU HAVE THE COURAGE TO AT LEAST ALLOW YOUR DOWNLINERS TO TRY ?
TO GET MORE INFO E-MAIL NOBLEHOUSE@YEBO.CO.ZA
AND WRITE WHATS UP BUD ? IN THE SUBJECT LINE
WHATS UP BUD ?
WHATS UP BUD ?
PS.
IF YOU HAVE A THORN IN YOUR FOOT YOU ARE GOING TO NEED A NEEDLE TO TAKE IT OUT. HAS
EVERYONE OUT THERE GOT A NEEDLE? MR. SCROOGE ARE YOU GOING TO DUMP ME BECAUSE YOU DON`T
WANT TO SHARE YOUR NEEDLES?
I KNOW MR GOOD GUY WANTS TO SHARE !!!
YOU ARE MR. GOOD GUY ARN`T YOU.

WHY NOT JUST USE THIS LINK BELOW?
http://freeadguru.com/cgi-bin/i.pl?c=a&i=19740

REGARDS AND TAKE CARE

MAF Anti-Spam ID: 20040301133119L7u4YfM2

1733. Re: Shaft Coupling Source?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 01:33:49 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <4046877D.4E61DD0C@rica.net>
Source record: 28120

"Dan Richardson <" wrote:
>
> Can anyone point me to a source for shaft couplings used to add
> extensions to ¼ inch diameter variable capacitor and/or rotary switch
> shafts.
>
> Thanks
> Danny, K6MHE

Ask for a catalog from these people:
http://www.sdp-si.com/D790/D790cat.htm

--
John Popelish

1734. Re: ARRL bamboozled by FCC -- BPL Lives, big money talks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 02:51:40 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <9xw1c.30495$Tn.26100@bignews5.bellsouth.net>
Source record: 28121

Frank Dinger wrote:
>>Mr. Berkman says his group has already had discussions about bundling its
>>services, and plans to offer Internet phone service and either video on
>>demand or videogames by the third quarter of this year. He adds that in
>
> many
>
>>places that theoretically can get high-speed access the quality is poor.
>>Cinergy and Current, which tested their offering on 100 homes in the
>>Cincinnati area, say they will target areas where broadband connections
>
> are
>
>>spotty and hope to sign up 20% of homes they pass.
>
> ==========
> Wonder if there are any radio amateurs (hams) in the Cincinetti area where
> the system was 'tested'
> And if so ,whether they have reported any interference resulting from BPL. I
> am sure ARRL will be happy to hear from them.
>
> Let's wait and see.
>
> Here in the UK ,it has gone quiet re PLT = Power Line Transmission (BPL).
> In rural areas where telephone exhanges have not as yet been prepared for
> ADSL ,people can register their interest in ADSL on the Web.
> As soon as a trigger level ,set by British Telecom, has been reached ,
> broadband facilities will be installed.
> In my telephone area (covering a maximum of 1000 phone connections) the
> trigger level is 150 ,whereas to date only 51 have
> registered.....So I might enjoy broadband comms during 'after
> life' ;)).
> However the 'absence of PLT ' (a blessing) will most definitely make me
> stick with ham radio.
>
> Frank GM0CSZ / KN6WH
>
>
>
OK Hams in Cincy. When you can't hear anything because the band is full
of BPL crap fire up your linears and rotate your beams toward the noise,
then call CQ all night. The BPL people will find their internet not
working because of the 'QRM' and there ain't a thing they can legally do
about it! When the customers demand their money back maybe the power

companies will call the experiment a failure.

1735. Re: Shaft Coupling Source?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 02:59:26 UTC
From: "Dan Richardson"
Message-ID: <2s6d40triudtr5n2hrf32iem3o5ppc6vbc@4ax.com>
Source record: 28122

On Wed, 03 Mar 2004 20:33:49 -0500, John Popelish <jpopelish@rica.net>
wrote:

>Ask for a catalog from these people:
>http://www.sdp-si.com/D790/D790cat.htm
>
>--
>John Popelish

Great site. Thanks

Danny

1736. Re: ARRL bamboozled by FCC -- BPL Lives, big money talks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 03:30:29 UTC
From: John Moriarity <k6qq@hdo.net>
Message-ID: <104d8mprg2qdic6@corp.supernews.com>
Source record: 28123

> OK Hams in Cincy. When you can't hear anything because the band is full
> of BPL crap fire up your linears and rotate your beams toward the noise,
> then call CQ all night. The BPL people will find their internet not
> working because of the 'QRM' and there ain't a thing they can legally do
> about it!

Yeah, but...

Remember, this is a country where the majority
rules, and laws can be changed. Hams are a
minority.

This is a very serious issue, and could spell the
end of our hobby. I sincerely hope not.

73, John - K6QQ

1737. 455 KC oscillator = CB jamming device

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 04:00:22 UTC
From: kxto@yahoo.com
Message-ID: <4f21d3b.0403032000.77158e1d@posting.google.com>
Source record: 28124

when I lived in Reno, NV there was a person who was not very friendly on the radio. He was always getting drunk and once he was full of liquid courage, would swear, throw dead carriers, drive the drivers and us locals crazy. So a cb/ham operator made a device that was real small,,,it was placed in close proximity to his house, within 1/4 mile. When he would key up on ch-19, it would start a audio carrier that was intermittant,,it was like a pulse for 5-7 minutes, he would key up again and once again get this pulsating tone, is the best way to describe it. Needless to say he cleaned up his act, and started to come around. So now I am in willamette valley and have the same problem. the person who made that "toy" has passed on,so now I am looking to get something of the same concept made. Any ideas? JPT.

1738. Re: 433MHz or 916MHz ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 04:18:45 UTC
From: KD7TOG <kd7tog@earthlink.net>
Message-ID: <F6y1c.18258$yZ1.17013@newsread2.news.pas.earthlink.net>
Source record: 28125

Don't shortchange 4-8kHz... an audible, high intensity piezo buzzer can be heard for quite some distance :-)

"stan" <stanandsue2000REMOVE@yahooREMOVE.com> wrote in message news:4044fc51.25110232@news.compuserve.com...
> hi, I'm still in process of designing some little tracking
> transmitters (10-50mw) for model airplanes (take my tech test on
> Saturday!!) and I'm trying to decide if to go the 400 or 800MHz band
> approach. The higher frequency would allow a little shorter antenna
> .. but would be a little more directional (?) ... considering what
> I'm trying to locate may be out in the weeds somewhere does anyone
> have any experience which one would be better and why ? TIA stan
>
>

1739. Re: request for introduction

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 04:42:01 UTC
From: bunnydawg <r.heenan@sympatico.ca>
Message-ID: <4xy1c.16883$qA2.946526@news20.bellglobal.com>
Source record: 28126

Gee spam in all capital letters.
Wonder what scam he/she is running ?
Robert

"GARY WAINWRIGHT" <noblehouse@yebo.co.za> wrote in message
news:c25cat$b1m$5@ctb-nnrp2.saix.net...
> HI
> MY NAME IS GARY WAINWRIGHT AND I`M FROM NOBLEHOUSE INFACT I OWN THE
COMPANY
> NOBLEHOUSE SUPPLIES SOLUTIONS TO PEOPLE WHO HAVE A DESIRE TO SUPPLEMENT
THEIR INCOME WITH HASSLE FREE AND NON TIME CONSUMING ACTIVITIES
>
> I HAVE YET TO MEET A HOUSEHOLD THAT COULD NOT DO WITH A FEW EXTRA`S.
PLEASE DONT GET ME WRONG I DO NOT KNOW YOUR FULL POTENTIAL SO I CANNOT MAKE
CLAIMS TO FAME AND RICHES HOWEVER I FEEL I HAVE AN OBLIGATION TO AT LEAST
ALLOW OTHERS TO REACH FOR THEIR STARS
> IGNORANCE IS NOT BLISS!
> WILL YOU HAVE THE COURAGE TO AT LEAST ALLOW YOUR DOWNLINERS TO TRY ?
> TO GET MORE INFO E-MAIL NOBLEHOUSE@YEBO.CO.ZA
> AND WRITE WHATS UP BUD ? IN THE SUBJECT LINE
> WHATS UP BUD ?
> WHATS UP BUD ?
> PS.
> IF YOU HAVE A THORN IN YOUR FOOT YOU ARE GOING TO NEED A NEEDLE TO
TAKE IT OUT. HAS EVERYONE OUT THERE GOT A NEEDLE? MR. SCROOGE ARE YOU GOING
TO DUMP ME BECAUSE YOU DON`T WANT TO SHARE YOUR NEEDLES?
> I KNOW MR GOOD GUY WANTS TO SHARE !!!
> YOU ARE MR. GOOD GUY ARN`T YOU.
>
> WHY NOT JUST USE THIS LINK BELOW?
> http://freeadguru.com/cgi-bin/i.pl?c=a&i=19740
>
> REGARDS AND TAKE CARE
>
>
> ---
> MAF Anti-Spam ID: 20040301133119L7u4YfM2
>
>

1740. Re: Using Multimedia Headsets

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 06:33:04 UTC
From: Doug Smith W9WI <w9wi@invalid.invalid>
Message-ID: <4046CDA0.1050804@invalid.invalid>
Source record: 28127

CL Vancil wrote:
> Hello,
>
> I have a project that requires more than 10 headsets that get lots of
> rough uses.
>
> I have looked at using multimedia headsets as a cheap source. But
> worry about impedance matching and making a remote PTT for them. This
> is all for GMRS radios (several brands)using the common mono 1/8
> speaker mono 3/32 mic connector.
>
> I have made an experimental box with two stereo 1/8 jacks that just
> carry the speakers straight thru and use a simple push button for the
> mic's PTT. But get a load "spisszt" just as I press the button.

I've used these with success with HF gear. (TS-940, IC-765, FT-1000MP)

They require DC bias on the mike element. The HF gear has a source of
+8 or +9V DC on the mike jack - I connect that to the tip of the mike
jack through a 10-20K resistor, then tap the audio from the same point
using a 1uF tantalum blocking capacitor. Works great.

Of course the headphone part works fine without modification.

Finding the DC biasing voltage on the GMRS radios might be a problem.
--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com

1741. Re: 455 KC oscillator = CB jamming device

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 07:47:46 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <CaB1c.129276$Hy3.812@edtnps89>
Source record: 28128

Just "pin" his coax.

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

1742. Re: request for introduction

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 10:00:29 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <kmtd401u1qkht5ciovirvovu911vvvequm@4ax.com>
Source record: 28129

On Wed, 3 Mar 2004 23:42:01 -0500, "bunnydawg" <r.heenan@sympatico.ca>
wrote:

>Gee spam in all capital letters.
>Wonder what scam he/she is running ?
>Robert

So thoughtful of you to repost it all again.
--

The BBC: Licensed at public expense to spread lies.

1743. Re: 455 KC oscillator = CB jamming device

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 10:00:30 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <dqtd40pearu2fsmjlv6ajodlk7r3p66uu4@4ax.com>
Source record: 28130

On Thu, 04 Mar 2004 07:47:46 GMT, Gregg <nospam@unknown.org> wrote:

>Just "pin" his coax.

Isn't that likely to disrupt his characteristic transmission line
impedance? ;-)

--

The BBC: Licensed at public expense to spread lies.

1744. Re: Shaft Coupling Source?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 11:41:18 UTC
From: Adrian brentnall <adrian@ambquality.co.uk>
Message-ID: <gc5e401l7v0brp97rv90k84oe1f42rk0ln@4ax.com>
Source record: 28131

Hi Danny

>Can anyone point me to a source for shaft couplings used to add
>extensions to ï¿½ inch diameter variable capacitor and/or rotary switch
>shafts.

Funny you should ask - I've got one of these For Auction on ebay at
the moment.... <g>

http://cgi.ebay.co.uk/ws/eBayISAPI.dll?ViewItem&category=1502&item=3082010124

Regards
Adrian G0THW
Suffolk UK

1745. Re: 455 KC oscillator = CB jamming device

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 12:07:02 UTC
From: acepilot <acepilot@bloomer.net>
Message-ID: <rVE1c.169$KG2.337@reggie.win.bright.net>
Source record: 28132

I guess I always get confused by these posts. What good does it do to jam the offenders receiver? He can't hear it until he unkeys. If he keeps getting that annoying tone in his receiver, the easiest way to get rid of it is to go key down again.

Scott
N0EDV

Guy wrote:
> when I lived in Reno, NV there was a person who was not very friendly
> on the radio. He was always getting drunk and once he was full of
> liquid courage, would swear, throw dead carriers, drive the drivers
> and us locals crazy. So a cb/ham operator made a device that was real
> small,,,it was placed in close proximity to his house, within 1/4
> mile. When he would key up on ch-19, it would start a audio carrier
> that was intermittant,,it was like a pulse for 5-7 minutes, he would
> key up again and once again get this pulsating tone, is the best way
> to describe it. Needless to say he cleaned up his act, and started to
> come around. So now I am in willamette valley and have the same
> problem. the person who made that "toy" has passed on,so now I am
> looking to get something of the same concept made. Any ideas? JPT.

1746. Re: 455 KC oscillator = CB jamming device

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 13:15:33 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.0000006e.003e68f5@btinternet.com>
Source record: 28133

Hi,

The way I read the post is that the pulsing noise would
come out of the rig of the offending individual each time
he keyed-up which puts this 'device' in the urban-legend
category.

Cheers - Joe

1747. Re: 455 KC oscillator = CB jamming device

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 13:38:07 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.0000006f.00531107@btinternet.com>
Source record: 28134

Hi,

OOPS! On a second reading I think that I misunderstood the posting and realise now that the device was meant to generate an annoying signal for a few minutes 'after' he had released the pressel. Were it close enough to the offending station, it would only need to be of quite low power and limited sensitivity so restricting it to the offending individual.

As we all know, one of the intentions of those who seek to disrupt a channel is to subsequently wallow in the result of their efforts. This signal then would help prevent them from enjoying the fruit of their labours. Unfortunately though there doesn't appear to be a newsgroup equivalent.

Cheers - Joe

1748. Re: ARRL bamboozled by FCC -- BPL Lives, big money talks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 14:15:05 UTC
From: N2EY@AOL.COM
Message-ID: <c2356669.0403040615.48d00e9c@posting.google.com>
Source record: 28135

http://www.arrl.org/news/stories/2004/03/03/104/?nc=1

73 de Jim, N2EY

1749. Re: Shaft Coupling Source?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 14:23:55 UTC
From: Hans Summers <Hans.Summers@Tudor.Com>
Message-ID: <c27e5s$1qbl2q$1@ID-61331.news.uni-berlin.de>
Source record: 28136

"Dan Richardson @mendolink.com>" <<ChangeThisToCallSign> wrote in message
news:9p4c409j2a2mqpdjhrde9s71u43ta01f2i@4ax.com...
> Can anyone point me to a source for shaft couplings used to add
> extensions to inch diameter variable capacitor and/or rotary switch
> shafts.

Try Jackson Brothers http://www.mainlinegroup.co.uk/jacksonbrothers/

and specifically part number 4636:
http://www.mainlinegroup.co.uk/jacksonbrothers/4636.htm

73 Hans G0UPL
http://www.HansSummers.com

1750. 1N414B

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 15:43:24 UTC
From: "Prof. Peter Konlechner" <peter.konlechner@aon.at>
Message-ID: <40474ea6$0$23362$91cee783@newsreader01.highway.telekom.at>
Source record: 28137

hello all:

could anybody name to me equivalent diodes for 1N414 B which are not
available in Vienna.
Many thanks,
Peter

1751. Re: request for introduction

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 15:55:34 UTC
From: mikea@mikea.ath.cx
Message-ID: <c27jhl$f94$1@puck.litech.org>
Source record: 28138

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote:
> On Wed, 3 Mar 2004 23:42:01 -0500, "bunnydawg" <r.heenan@sympatico.ca>
> wrote:

> >Gee spam in all capital letters.
> >Wonder what scam he/she is running ?
> >Robert

> So thoughtful of you to repost it all again.

sigh

Complaints have been sent to the abuse contacts for the spammer's
providers. I hope he has trouble finding a new provider.

--
Mike Andrews
mikea@mikea.ath.cx
Tired old sysadmin

1752. Re: 1N414B

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 16:30:50 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <104emdj1puvg129@corp.supernews.com>
Source record: 28139

"Prof. Peter Konlechner" <peter.konlechner@aon.at> wrote in message
news:40474ea6$0$23362$91cee783@newsreader01.highway.telekom.at...
> hello all:
>
> could anybody name to me equivalent diodes for 1N414 B which are not
> available in Vienna.
> Many thanks,
> Peter
>
>

Are you sure you don't mean the common-as-dirt 1N4148, silicon switching
diode in an axial-leaded glass package?

1753. Re: 455 KC oscillator = CB jamming device

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 16:59:59 UTC
From: Eddie Haskel <wiseguy@clever.com>
Message-ID: <jgJ1c.5897$0c7.1284@newssvr27.news.prodigy.com>
Source record: 28140

Dont bother with RF toys, go over to the guys electrical feedpoint and OPEN
THE NEUTRAL LINE :)
He will be so busy putting out fires that he wont have time to get on the
air (if it still works)...Eddie

"Bill Turner" <noway@nohow.com> wrote in message
news:8ubd405mtqq9117vttjchj894pgbqhq31h@4ax.com...
> On 3 Mar 2004 20:00:22 -0800, kxto@yahoo.com (Guy) wrote:
>
> >when I lived in Reno, NV there was a person who was not very friendly
> >on the radio. He was always getting drunk and once he was full of
> >liquid courage, would swear, throw dead carriers, drive the drivers
> >and us locals crazy. So a cb/ham operator made a device that was real
> >small,,,it was placed in close proximity to his house, within 1/4
> >mile. When he would key up on ch-19, it would start a audio carrier
> >that was intermittant,,it was like a pulse for 5-7 minutes, he would
> >key up again and once again get this pulsating tone, is the best way
> >to describe it. Needless to say he cleaned up his act, and started to
> >come around. So now I am in willamette valley and have the same
> >problem. the person who made that "toy" has passed on,so now I am
> >looking to get something of the same concept made. Any ideas? JPT.
>
> ----------
>
> So, you want us to help you do some illegal jamming of an illegal
> jammer?
>
> Go away.
>
> --
> Bill, W6WRT
>

1754. Re: 1N414B

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 18:39:24 UTC
From: Bruce in Alaska <bruceg@btpost.net>
Message-ID: <bruceg-A4D49F.09392604032004@netnews.worldnet.att.net>
Source record: 28141

In article <40474ea6$0$23362$91cee783@newsreader01.highway.telekom.at>,
"Prof. Peter Konlechner" <peter.konlechner@aon.at> wrote:

> hello all:
>
> could anybody name to me equivalent diodes for 1N414 B which are not
> available in Vienna.
> Many thanks,
> Peter
>
>

How about 1n415c, would that do you?

Bruce in alaska
--
add a <2> before @

1755. Re: slow process

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 22:41:24 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c28be6geb1@newshost.mot.com>
Source record: 28145

Cute!

--
Steve N, K,9;d, c. i My email has no u's.
"David Lindsay" <david@bigpond.com.au> wrote in message
news:0VY0c.2647$KS1.96147@nasal.pacific.net.au...
> On my first attempt using a recently purchased alcohol still, it took over
> 6hrs to make around 4 liters of alcohol. We were running the temp steady
at
> around 84 degs. When I finally decided to increase the temp to 90 degs is
> started flowing faster. Should we have ran it hotter from the start. How
> long does it usually take to run off 5ltrs.
>
> Any tips would be appreciated
>
>

1756. Re: 455 KC oscillator = CB jamming device

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 22:46:25 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c28bnh$go9$1@newshost.mot.com>
Source record: 28144

"Joe McElvenney" <ximac@btinternet.com> wrote in message
news:VA.0000006f.00531107@btinternet.com...
> Hi,
>
> OOPS! On a second reading I think that I misunderstood
> the posting and realise now that the device was meant to
> generate an annoying signal for a few minutes 'after' he
> had released the pressel. Were it close enough to the
> offending station, it would only need to be of quite low
> power and limited sensitivity so restricting it to the
> offending individual.

That's what I got. To do this @ 455KHz would require lots of antenna
or power. 1/2 mile is very long. I used to interfere with other kids
transistor radios by tuning mine 455 away so that the LO in mine was on
their Rx freq. weeeeoooeeee. Only works a few feet.

--
Steve N, K,9;d, c. i My email has no u's.

>
> As we all know, one of the intentions of those who seek
> to disrupt a channel is to subsequently wallow in the
> result of their efforts. This signal then would help
> prevent them from enjoying the fruit of their labours.
> Unfortunately though there doesn't appear to be a newsgroup
> equivalent.
>
>
> Cheers - Joe
>
>

1757. Re: 433MHz or 916MHz ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 22:48:31 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c28bre$h30$1@newshost.mot.com>
Source record: 28047

GOOD POINT !

You can turn it on with full up elevator to save batteries. Assuming your
crash isn't fatal.

"KD7TOG" <kd7tog@earthlink.net> wrote in message
news:F6y1c.18258$yZ1.17013@newsread2.news.pas.earthlink.net...
> Don't shortchange 4-8kHz... an audible, high intensity piezo buzzer can be
> heard for quite some distance :-)
>
> "stan" <stanandsue2000REMOVE@yahooREMOVE.com> wrote in message
> news:4044fc51.25110232@news.compuserve.com...
> > hi, I'm still in process of designing some little tracking
> > transmitters (10-50mw) for model airplanes (take my tech test on
> > Saturday!!) and I'm trying to decide if to go the 400 or 800MHz band
> > approach. The higher frequency would allow a little shorter antenna
> > .. but would be a little more directional (?) ... considering what
> > I'm trying to locate may be out in the weeds somewhere does anyone
> > have any experience which one would be better and why ? TIA stan
> >
> >
>
>

1758. Is www.mailman.net down ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 22:58:13 UTC
From: mike@corn2.freeserve.co.uk
Message-ID: <4047b469.135522828@news.freeserve.net>
Source record: 28142

Is www.mailman.net down ?

I've not had an e-mail from any of the Mailing lists I'm subscribed to
with mailman.net (qsl.net's list server) for about 48 hours.
Specifically

QRP-L, ELECRAFT or HAM-PIC

I have been getting stuff from Yahoo's GQRP Mailing list and from
Yahoo's PICLIST without problem.

atb Mike W

1759. One Tube Superhet

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 23:02:10 UTC
From: dougwix@aol.com
Message-ID: <20040304180210.22806.00000780@mb-m10.aol.com>
Source record: 28143

I'm interested in identifying the Elementary Electronics Magazine issue that contains the One Tube Superhet project. It is from about 1970. I built this project, back then, and still have the radio but not the magazine. I have salvaged a few parts over the years for other projects but bringing it back to it's former glory will be easy. Thank you, doug

1760. Re: 1N414B

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 23:05:40 UTC
From: mike@corn2.freeserve.co.uk
Message-ID: <4047b528.135713853@news.freeserve.net>
Source record: 28146

On Thu, 4 Mar 2004 16:43:24 +0100, "Prof. Peter Konlechner"
<peter.konlechner@aon.at> wrote:

>hello all:
>
>could anybody name to me equivalent diodes for 1N414 B
As others have commented, its possibly a 1N4148, its easy to read a 8
for an B, and with small computer text/print the 0 when you use the
European? version can be mistaken for a 0 a B or an 8.

1761. Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 23:43:21 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <34ff40pdgam1qv9db89his2b651kvmkv96@4ax.com>
Source record: 28048
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Hi all,

I need a simple design for a BPF with a centre frequency of 17.2Mhz.,
corner frequencies one Meg or therabouts either side of that and a
reasonably good shape factor (nothing critical here). I don't mind
having to do a bit of tweaking of values myself if anyone has
something close to that they can post. Passive L/C combinations only,
please. (assume the usual 50R nominal Zs.)
Thanks,

p.
--

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1762. Re: Using Multimedia Headsets

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-04 23:57:50 UTC
From: clvspamblock@yahoo.com
Message-ID: <2d818e2a.0403041557.27a41ed6@posting.google.com>
Source record: 28049

Doug Smith W9WI <w9wi@invalid.invalid> wrote in message
news:<4046CDA0.1050804@invalid.invalid>...
> CL Vancil wrote:
> > Hello,
> >
> > I have a project that requires more than 10 headsets that get lots of
> > rough uses.
> >
> > I have looked at using multimedia headsets as a cheap source. But
> > worry about impedance matching and making a remote PTT for them. This
> > is all for GMRS radios (several brands)using the common mono 1/8
> > speaker mono 3/32 mic connector.
> >
> > I have made an experimental box with two stereo 1/8 jacks that just
> > carry the speakers straight thru and use a simple push button for the
> > mic's PTT. But get a load "spisszt" just as I press the button.
>
> I've used these with success with HF gear. (TS-940, IC-765, FT-1000MP)
>
> They require DC bias on the mike element. The HF gear has a source of
> +8 or +9V DC on the mike jack - I connect that to the tip of the mike
> jack through a 10-20K resistor, then tap the audio from the same point
> using a 1uF tantalum blocking capacitor. Works great.
>
> Of course the headphone part works fine without modification.
>
> Finding the DC biasing voltage on the GMRS radios might be a problem.

I don't really have access to all the radios to do some hunting and
modifying to each. So it would seem a bias circuit using a battery in
the PTT box is in order. That is if getting rid of this minor
distortion is worth the effort. Something like a .5 uf cap between
the switch and the mic element with a 1K resistor and a single AA
going to ground? Sound about right?

--Chris Vancil

1763. Re: Is www.mailman.net down ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 00:35:31 UTC
From: TOM <noname@noprovider.nodomain>
Message-ID: <nXP1c.58908$C65.46427@nwrddc01.gnilink.net>
Source record: 28050

Perhaps you mean mailman.qth.net?
It appears to be down - cannot access any of the archives or mail listing
for the last two days.

-- Tom

"Mike W" <mike@corn2.freeserve.co.uk> wrote in message
news:4047b469.135522828@news.freeserve.net...
> Is www.mailman.net down ?
>
> I've not had an e-mail from any of the Mailing lists I'm subscribed to
> with mailman.net (qsl.net's list server) for about 48 hours.
> Specifically
>
> QRP-L, ELECRAFT or HAM-PIC
>
> I have been getting stuff from Yahoo's GQRP Mailing list and from
> Yahoo's PICLIST without problem.
>
> atb Mike W

1764. Re: Is www.mailman.net down ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 00:38:44 UTC
From: TOM <noname@noprovider.nodomain>
Message-ID: <o_P1c.58957$C65.57157@nwrddc01.gnilink.net>
Source record: 28051

mailman.qth.net is back up now... (Thursday 7:38 EST)

"Mike W" <mike@corn2.freeserve.co.uk> wrote in message
news:4047b469.135522828@news.freeserve.net...
> Is www.mailman.net down ?
>
> I've not had an e-mail from any of the Mailing lists I'm subscribed to
> with mailman.net (qsl.net's list server) for about 48 hours.
> Specifically
>
> QRP-L, ELECRAFT or HAM-PIC
>
> I have been getting stuff from Yahoo's GQRP Mailing list and from
> Yahoo's PICLIST without problem.
>
> atb Mike W

1765. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 00:41:11 UTC
From: "Peter O. Brackett" <no_such_address@ix.netcom.com>
Message-ID: <H0Q1c.30088$W74.16336@newsread1.news.atl.earthlink.net>
Source record: 28052
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul:

[snip]
> I need a simple design for a BPF with a centre frequency of 17.2Mhz.,
> corner frequencies one Meg or therabouts either side of that and a
> reasonably good shape factor (nothing critical here). I don't mind
> having to do a bit of tweaking of values myself if anyone has
> something close to that they can post. Passive L/C combinations only,
> please. (assume the usual 50R nominal Zs.)
[snip]

Such a design can be achieved with a vert simple formula and a pocket calculator or slide rule. Why don't you just use Bennett's simple formula for the maximally flat approximation all pole element values, or Takashi's simple formulae for the equiripple approximation all pole element values?

Oh... perhaps you want elliptic [Cauer or Darlington] designs or perhaps a completely general parameter design in that case ypu will need a computer and will need to do some programming or buy some programming, or better yet...

Hire a consultant... :-)

Hey, I've designed literally thousands of LC filters over decades in most frequency ranges, for clients who have paid me well. I have access to very sophisticated and comprehensive general parameter LC filter design programs that I have written [In Fortran BTW] over lo these many years and they are immediately at my disposal.

But... unfortunately for some... I never design filters for free!

I'll do it for you at my usual consulting rates.

My rates are reasonable. Just call or email me to discuss the terms and conditions.

:-)

--
Peter
Professional Consultant - Signal Processing and Analog Electronics
Indialantic By-the-Sea, FL
peter dot brackett at "eye" triple "e" dot org.
USA area code three two one, number seven two three, nine two five five.

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:34ff40pdgam1qv9db89his2b651kvmkv96@4ax.com...

> Hi all,
>
> I need a simple design for a BPF with a centre frequency of 17.2Mhz.,
> corner frequencies one Meg or therabouts either side of that and a
> reasonably good shape factor (nothing critical here). I don't mind
> having to do a bit of tweaking of values myself if anyone has
> something close to that they can post. Passive L/C combinations only,
> please. (assume the usual 50R nominal Zs.)
> Thanks,
>
> p.
> --
>
> The BBC: Licensed at public expense to spread lies.

1766. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 01:49:12 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <s0R1c.41827$ko6.364923@attbi_s02>
Source record: 28053
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Conversely, go to the WB6BLD website and download the free student version
of Elsie and do it yourself, will take an hour to learn the software and 5
minutes to design the filter. Another good filter program that is free and
available and relatively easy to use is at the AADE website.

Would be worth your while to learn even if you seldom design a filter.

W4ZCB
"Peter O. Brackett" <no_such_address@ix.netcom.com> wrote in message
news:H0Q1c.30088$W74.16336@newsread1.news.atl.earthlink.net...
> Paul:
>
> [snip]
> > I need a simple design for a BPF with a centre frequency of 17.2Mhz.,
> > corner frequencies one Meg or therabouts either side of that and a
> > reasonably good shape factor (nothing critical here). I don't mind
> > having to do a bit of tweaking of values myself if anyone has
> > something close to that they can post. Passive L/C combinations only,
> > please. (assume the usual 50R nominal Zs.)
> [snip]
>
> Such a design can be achieved with a vert simple formula and a pocket
> calculator or slide rule. Why don't you just use Bennett's simple formula
> for the maximally flat approximation all pole element values, or Takashi's
> simple formulae for the equiripple approximation all pole element values?
>
> Oh... perhaps you want elliptic [Cauer or Darlington] designs or perhaps a
> completely general parameter design in that case ypu will need a computer
> and will need to do some programming or buy some programming, or
> better yet...
>
> Hire a consultant... :-)
>
> Hey, I've designed literally thousands of LC filters over decades in most
> frequency ranges, for clients who have paid me well. I have access to
very
> sophisticated and comprehensive general parameter LC filter design
> programs that I have written [In Fortran BTW] over lo these many years
> and they are immediately at my disposal.
>
> But... unfortunately for some... I never design filters for free!
>
> I'll do it for you at my usual consulting rates.
>

> My rates are reasonable. Just call or email me to discuss the terms and
> conditions.
>
> :-)
>
> --
> Peter
> Professional Consultant - Signal Processing and Analog Electronics
> Indialantic By-the-Sea, FL
> peter dot brackett at "eye" triple "e" dot org.
> USA area code three two one, number seven two three, nine two five five.
>
>
> "Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
> news:34ff40pdgam1qv9db89his2b651kvmkv96@4ax.com...
> > Hi all,
> >
> > I need a simple design for a BPF with a centre frequency of 17.2Mhz.,
> > corner frequencies one Meg or therabouts either side of that and a
> > reasonably good shape factor (nothing critical here). I don't mind
> > having to do a bit of tweaking of values myself if anyone has
> > something close to that they can post. Passive L/C combinations only,
> > please. (assume the usual 50R nominal Zs.)
> > Thanks,
> >
> > p.
> > --
> >
> > The BBC: Licensed at public expense to spread lies.
>
>

1767. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 01:58:26 UTC
From: John Larkin <jjlarkin@highSNIPlandTHIStechPLEASEnology.com>
Message-ID: <91lf405kpk8p1e6lv2te00915ucbaih0fl@4ax.com>
Source record: 28054
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Thu, 04 Mar 2004 23:43:21 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>Hi all,
>
>I need a simple design for a BPF with a centre frequency of 17.2Mhz.,
>corner frequencies one Meg or therabouts either side of that and a
>reasonably good shape factor (nothing critical here). I don't mind
>having to do a bit of tweaking of values myself if anyone has
>something close to that they can post. Passive L/C combinations only,
>please. (assume the usual 50R nominal Zs.)
>Thanks,
>
>p.

The usual technique is to get a book that has tables of normalized LC
lowpass filters of various types, pick a response you like, and scale
it and map to a bandpass. Williams' "Electronic Filter Design
Handbook" has all this stuff.

It's mildly tedious, so I won't offer to do one for you.

John

1768. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 02:03:27 UTC
From: Jeffrey Turner <jturner@localnet.com>
Message-ID: <104fnvh168rm34c@corp.supernews.com>
Source record: 28055
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge wrote:

> Hi all,
>
> I need a simple design for a BPF with a centre frequency of 17.2Mhz.,
> corner frequencies one Meg or therabouts either side of that and a
> reasonably good shape factor (nothing critical here). I don't mind
> having to do a bit of tweaking of values myself if anyone has
> something close to that they can post. Passive L/C combinations only,
> please. (assume the usual 50R nominal Zs.)

If you have Office 2002 (XP), you can use this web site.

http://www.rfcafe.com/references/_spreadsheets/bp_butter_plot_ss.htm

--
A man, a plan, a cat, a canal - Panama!

Ho, ho, ho, hee, hee, hee
and a couple of ha, ha, has;
That's how we pass the day away,
in the merry old land of Oz.

1769. Re: 455 KC oscillator = CB jamming device

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 02:35:49 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <SqR1c.22692$rB4.11836@bignews6.bellsouth.net>
Source record: 28056

Steve Nosko wrote:
> "Joe McElvenney" <ximac@btinternet.com> wrote in message
> news:VA.0000006f.00531107@btinternet.com...
>
>>Hi,
>>
>> OOPS! On a second reading I think that I misunderstood
>>the posting and realise now that the device was meant to
>>generate an annoying signal for a few minutes 'after' he
>>had released the pressel. Were it close enough to the
>>offending station, it would only need to be of quite low
>>power and limited sensitivity so restricting it to the
>>offending individual.
>
>
> That's what I got. To do this @ 455KHz would require lots of antenna
> or power. 1/2 mile is very long. I used to interfere with other kids
> transistor radios by tuning mine 455 away so that the LO in mine was on
> their Rx freq. weeeeoooeeee. Only works a few feet.
>
A friend of mine was thinking of building a small transmitter that would
put out on 262khz, 455khz (am) and 10.7mhz fm. It was to be a low power
portable transmitter to be used mobile when he got cut off my some
***hole on the road. He could then curse the guy out over his radio
(assuming he had the radio on).

1770. Re: 455 KC oscillator = CB jamming device

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 02:44:27 UTC
From: CL <does_it_matter@noreply.com>
Message-ID: <EQR1c.7418$5M.249451@dfw-read.news.verio.net>
Source record: 28057

Maybe this was touched on before, but since we're discussing the designing of jamming devices for idiot radio operators, how about something to jam the audio of the ass holes who insist on playing their stereos full blast in the cars? Now "that" would be a treat! I'd love to replace that deep thumping crap with a nice high pitched squeal. CL

1771. Elecraft

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 02:54:33 UTC
From: bhockenberry@verizon.net
Message-ID: <4047ebb0.41790781@news.verizon.net>
Source record: 28058

Cost of K2. Anyone know the cost of the K2. Elecrafts web page is confusing with two different prices listed.

1772. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 03:08:22 UTC
From: maxfoo <maxfooHeadFromButt@punkass.com>
Message-ID: <ferf40hlvo22ncd2dtnvqirtntqh34e4u8@4ax.com>
Source record: 28059
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Thu, 04 Mar 2004 23:43:21 +0000, Paul Burridge <pb@osiris1.notthisbit.co.uk>
wrote:

>Hi all,
>
>I need a simple design for a BPF with a centre frequency of 17.2Mhz.,
>corner frequencies one Meg or therabouts either side of that and a
>reasonably good shape factor (nothing critical here). I don't mind
>having to do a bit of tweaking of values myself if anyone has
>something close to that they can post. Passive L/C combinations only,
>please. (assume the usual 50R nominal Zs.)
>Thanks,
>
>p.

Try this 5 pole Chebychev with 0.1dB ripple

Fc=17.2MHz BW=1MHz

CAP 1 2 C=27PF
PLC 2 0 L=1uH C=56PF
CAP 2 3 C=4PF
PLC 3 0 L=.1uH C=80PF
CAP 3 4 C=3PF
PLC 4 0 L=1uH C=80PF
CAP 4 5 C=3PF
PLC 5 0 L=1uH C=80PF
CAP 5 6 C=4PF
PLC 6 0 L=1uH C=56PF
CAP 6 7 C=27PF

tia,

Remove "HeadFromButt", before replying by email.

1773. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 03:25:25 UTC
From: maxfoo <maxfooHeadFromButt@punkass.com>
Message-ID: <uhsf4051trcib7tes401ihjvtdi8djo3va@4ax.com>
Source record: 28060
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Fri, 05 Mar 2004 03:08:22 GMT, maxfoo <maxfooHeadFromButt@punkass.com> wrote:

>On Thu, 04 Mar 2004 23:43:21 +0000, Paul Burridge <pb@osiris1.notthisbit.co.uk>
>wrote:
>
>>Hi all,
>>
>>I need a simple design for a BPF with a centre frequency of 17.2Mhz.,
>>corner frequencies one Meg or therabouts either side of that and a
>>reasonably good shape factor (nothing critical here). I don't mind
>>having to do a bit of tweaking of values myself if anyone has
>>something close to that they can post. Passive L/C combinations only,
>>please. (assume the usual 50R nominal Zs.)
>>Thanks,
>>
>>p.
>
>Try this 5 pole Chebychev with 0.1dB ripple
>
>Fc=17.2MHz BW=1MHz
>
>CAP 1 2 C=27PF
>PLC 2 0 L=1uH C=56PF
>CAP 2 3 C=4PF
>PLC 3 0 L=.1uH C=80PF <<<<<<< L=1uH sorry!
>CAP 3 4 C=3PF
>PLC 4 0 L=1uH C=80PF
>CAP 4 5 C=3PF
>PLC 5 0 L=1uH C=80PF
>CAP 5 6 C=4PF
>PLC 6 0 L=1uH C=56PF
>CAP 6 7 C=27PF
>
>

how did that decimal point get there on plc 3 0??
inductors should all be 1 microhenry.

Remove "HeadFromButt", before replying by email.

1774. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 03:34:35 UTC
From: qrk <mark@reson.DELETE.ME.com>
Message-ID: <etrf405g5k905mh0g368fskssgvadk42kb@4ax.com>
Source record: 28061
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Thu, 04 Mar 2004 23:43:21 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>Hi all,
>
>I need a simple design for a BPF with a centre frequency of 17.2Mhz.,
>corner frequencies one Meg or therabouts either side of that and a
>reasonably good shape factor (nothing critical here). I don't mind
>having to do a bit of tweaking of values myself if anyone has
>something close to that they can post. Passive L/C combinations only,
>please. (assume the usual 50R nominal Zs.)

Lots of books out there with normalized tables. Go to a technical university library and spend a few hours pouring thru some filter books. You can use Linear Technology's FilterCad to see what sort of filter type and order you need. Then hit the tables and make an LC filter. The best book I have found is "Simplified Modern Filter Design" by Philip Geffe, circa 1963. You can sometimes find this book in a university technical library. It has an excellent treatment of basic filter design and how to go from a low-pass prototype to other filter types.

For your particular filter, you might consider a loose-coupled design, also called coupled resonators. Good for Q > 10. Your design will just fit into this category if you don't mind some imperfection. This type of design produces nice component values. "Electronic Filter Design Handbook", by Arthur Williams and Fred Taylor (ISBN 0-07-070434-1), page 5-19 has info.

Mark

1775. Re: Is www.mailman.net down ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 03:44:24 UTC
From: empee@em-pee.com
Message-ID: <9605756.0403041944.f509df7@posting.google.com>
Source record: 28062

mike@corn2.freeserve.co.uk (Mike W) wrote in message
news:<4047b469.135522828@news.freeserve.net>...
> Is www.mailman.net down ?
>
> I've not had an e-mail from any of the Mailing lists I'm subscribed to
> with mailman.net (qsl.net's list server) for about 48 hours.
> Specifically
>
> QRP-L, ELECRAFT or HAM-PIC
>
> I have been getting stuff from Yahoo's GQRP Mailing list and from
> Yahoo's PICLIST without problem.
>
> atb Mike W

Mike, I have seen your test posting to HAM-PIC, but am also
experiencing no messages from QRP-L. The last one of these I have is
digest number 3211 from 2/28/04.

mikep
KV4FN

1776. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 04:47:30 UTC
From: John <jmort@despammed.com>
Message-ID: <c29c40$t2m$1@newsg2.svr.pol.co.uk>
Source record: 28070
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

AADE http://www.aade.com/filter.htm

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:34ff40pdgam1qv9db89his2b651kvmkv96@4ax.com...
> Hi all,
>
> I need a simple design for a BPF with a centre frequency of 17.2Mhz.,
> corner frequencies one Meg or therabouts either side of that and a
> reasonably good shape factor (nothing critical here). I don't mind
> having to do a bit of tweaking of values myself if anyone has
> something close to that they can post. Passive L/C combinations only,
> please. (assume the usual 50R nominal Zs.)
> Thanks,
>
> p.
> --
>
> The BBC: Licensed at public expense to spread lies.

1777. Re: 455 KC oscillator = CB jamming device

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 05:27:48 UTC
From: budgie <me@privacy.net>
Message-ID: <pt3g40pnr9lo19s19nn0ams6cl40tvos2m@4ax.com>
Source record: 28063

On Thu, 4 Mar 2004 21:44:27 -0500, "CL" <does_it_matter@noreply.com> wrote:

>Maybe this was touched on before, but since we're discussing the designing
>of jamming devices for idiot radio operators, how about something to jam the
>audio of the ass holes who insist on playing their stereos full blast in the
>cars? Now "that" would be a treat! I'd love to replace that deep thumping
>crap with a nice high pitched squeal. CL

me too, but the source seems to invariably a CD stacker.

1778. FA: Eico 667 Tube Tester

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 05:51:25 UTC
From: tw@emailaccount.com
Message-ID: <d7bc9941.0403042151.50a9112a@posting.google.com>
Source record: 28064
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Dynamic conductance model; also tests transistors. Checked out and working. Factory wired, with manuals:

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=3801545272

Auction ends March 7.

1779. Re: Using Multimedia Headsets

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 06:01:45 UTC
From: Doug Smith W9WI <w9wi@invalid.invalid>
Message-ID: <404817CF.1030709@invalid.invalid>
Source record: 28065

CL Vancil wrote:
> I don't really have access to all the radios to do some hunting and
> modifying to each. So it would seem a bias circuit using a battery in
> the PTT box is in order. That is if getting rid of this minor
> distortion is worth the effort. Something like a .5 uf cap between
> the switch and the mic element with a 1K resistor and a single AA
> going to ground? Sound about right?

I've tried it with 10K and a 9V battery. I suppose a single cell and 1K
might be about right, not too sure.
--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com

1780. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 06:20:34 UTC
From: Robert C Monsen <rcsurname@comcast.net>
Message-ID: <S_U1c.180578$uV3.775539@attbi_s51>
Source record: 28066
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:34ff40pdgam1qv9db89his2b651kvmkv96@4ax.com...
> Hi all,
>
> I need a simple design for a BPF with a centre frequency of 17.2Mhz.,
> corner frequencies one Meg or therabouts either side of that and a
> reasonably good shape factor (nothing critical here). I don't mind
> having to do a bit of tweaking of values myself if anyone has
> something close to that they can post. Passive L/C combinations only,
> please. (assume the usual 50R nominal Zs.)
> Thanks,
>
> p.
> --
>
> The BBC: Licensed at public expense to spread lies.

Download the freeware filter design software from

http://www.nuhertz.com/

Their UI is, uh, colorful, but it seems to work. Pay attention to the source and load impedance. Also, it doesn't like 'engineering' notation (eg: 17.2Meg), so use scientific notation like 17.2e6 instead.

The freeware only designs filters to 3rd order, so if you need better than that, either dig it out of a book or buy the software. However, it does both passive and active filters. Its a bargain at twice the price... ;)

Regards,
Bob Monsen

1781. Re: designing a 1240-1300MHz VCO

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 06:38:28 UTC
From: Richard Hosking <richardh@iinet.net.au>
Message-ID: <40482146$0$22519$5a62ac22@freenews.iinet.net.au>
Source record: 28067

Stephane

If you get QEX, the latest issue has a DDS/PLL board that might suit you
Alternatively, see http://www.qsl.net/ke5fx/synth.html
for details
Instead of the Minicircuits ROS 2100VW specified, use a ROS 1410 or ROS
1500. Are far as I am aware, they are pin compatible. You would need to
make some adjustments to the loop filter values and supply volts etc.

Richard
VK6BRO

Stï¿½phane Rey wrote:
> Hello everybody,
>
> I would like to design a VCO able to cover from 1240 and up to 1300 MHz in a
> PLL system.
> This will be part of the 23cm transceiver project.
>
> I've seen that Maxim has the MAX2754, intended for 1.2GHz operation. The
> datasheet shows it can reach 1300MHz.
> Has anybody experienced this component in PLL at such frequencies ?
>
>
> Otherwise, do you have some schematic examples to suggest with transistor
> but without PCB coils
>
> Regards
>
> Stephane, F1TJJ
>
>

1782. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 06:50:10 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403042250.29de2aa6@posting.google.com>
Source record: 28068
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Download RFSim99 and let it do it for you. Download Filter Design
from AADE's site and let it do it for you. Download NuHertz's demo
version of their filter design software and let it do it for you.
There may even be web aplets that will do it for you. And then you
can play with configurations and shape factors and the inevitable
tradeoffs between complexity and shape factor.

Cheers,
Tom

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:<34ff40pdgam1qv9db89his2b651kvmkv96@4ax.com>...
> Hi all,
>
> I need a simple design for a BPF with a centre frequency of 17.2Mhz.,
> corner frequencies one Meg or therabouts either side of that and a
> reasonably good shape factor (nothing critical here). I don't mind
> having to do a bit of tweaking of values myself if anyone has
> something close to that they can post. Passive L/C combinations only,
> please. (assume the usual 50R nominal Zs.)
> Thanks,
>
> p.

1783. Re: One Tube Superhet

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 07:00:19 UTC
From: R J Carpenter <rcarpen@erols.com>
Message-ID: <40482548$0$3103$61fed72c@news.rcn.com>
Source record: 28069

Pulling this thread a little to one side:

The "Radiotron Designer's Handbook" from the Amalgamated Wireless Valve Company (Australia) had a number of tricks to reduce the tube count in radios. Its main interests are AM and shortwave broadcast radios.

The book was sold by RCA in the USA. Anyone interested in tube radios should have a copy. It's a couple of inches thick. It was last issued in the 1950s - mine includes info on FM broadcast receivers.

1784. Re: Is www.mailman.net down ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 08:30:06 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <kCOZzODOqDSAFAuv@ifwtech.co.uk>
Source record: 28075

TOM Wrote:

>> Is www.mailman.net down ?
>>
>> I've not had an e-mail from any of the Mailing lists I'm subscribed to
>> with mailman.net (qsl.net's list server) for about 48 hours.

>mailman.qth.net is back up now... (Thursday 7:38 EST)
>

QSB

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

1785. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 10:34:57 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c29l4h$m0g$1@sparta.btinternet.com>
Source record: 28071
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

For a very simple bandpass design program download program BANDPAS1 from
website below. Also obtain response versus frequency. Download in a few
seconds and run immediately.
--
....
Regards from Reg, G4FGQ
For Free Radio Design Software go to
http://www.btinternet.com/~g4fgq.regp
....

1786. Re: designing a 1240-1300MHz VCO

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 10:45:35 UTC
From: St&#65533;phane Rey <sre_prolem@yahoo.com>
Message-ID: <c29m1u$s48$1@rex.ip-plus.net>
Source record: 28072

Richard,

I had the idea, but minicircuits ROSxxxx are quite expensive here in France.
more than 40 euros each.
I've found a schematic for a VCO covering 1050 to 1350 MHz, quite simple,
without PCB coils. Cost should be less than 2 or 3 euros.
I'll try to design something upon this base.

Stephane

"Richard Hosking" <richardh@iinet.net.au> wrote in message
news:40482146$0$22519$5a62ac22@freenews.iinet.net.au...
> Stephane
>
> If you get QEX, the latest issue has a DDS/PLL board that might suit you
> Alternatively, see http://www.qsl.net/ke5fx/synth.html
> for details
> Instead of the Minicircuits ROS 2100VW specified, use a ROS 1410 or ROS
> 1500. Are far as I am aware, they are pin compatible. You would need to
> make some adjustments to the loop filter values and supply volts etc.
>
> Richard
> VK6BRO
>
>
> St&#65533;phane Rey wrote:
> > Hello everybody,
> >
> > I would like to design a VCO able to cover from 1240 and up to 1300 MHz
in a
> > PLL system.
> > This will be part of the 23cm transceiver project.
> >
> > I've seen that Maxim has the MAX2754, intended for 1.2GHz operation. The
> > datasheet shows it can reach 1300MHz.
> > Has anybody experienced this component in PLL at such frequencies ?
> >
> >
> > Otherwise, do you have some schematic examples to suggest with
transistor
> > but without PCB coils
> >
> > Regards
> >

> > Stephane, F1TJJ
> >
> >
>

1787. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 11:28:51 UTC
From: Active8 <reply2group@ndbbm.invalid>
Message-ID: <ygthpyqjzsdd$.adyl3xnt03zb.dlg@40tude.net>
Source record: 28073
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Thu, 04 Mar 2004 17:58:26 -0800, John Larkin wrote:

> On Thu, 04 Mar 2004 23:43:21 +0000, Paul Burridge
> <pb@osiris1.notthisbit.co.uk> wrote:
>
>>Hi all,
>>
>>I need a simple design for a BPF with a centre frequency of 17.2Mhz.,
>>corner frequencies one Meg or therabouts either side of that and a

>>reasonably good shape factor (nothing critical here).

wtf?

> I don't mind
>>having to do a bit of tweaking of values myself if anyone has
>>something close to that they can post. Passive L/C combinations only,
>>please. (assume the usual 50R nominal Zs.)
>>Thanks,
>>
>>p.
>
> The usual technique is to get a book that has tables of normalized LC
> lowpass filters of various types, pick a response you like, and scale
> it and map to a bandpass. Williams' "Electronic Filter Design
> Handbook" has all this stuff.
>
> It's mildly tedious, so I won't offer to do one for you.
>
> John

He already has a book with a fair amount of tables and all the
explainations on how to go about the design. I'm wondering WTF
here. Hey paul. wtf?

--
Best Regards,
Mike

1788. Re: designing a 1240-1300MHz VCO

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 13:04:57 UTC
From: Richard Hosking <richardh@iinet.net.au>
Message-ID: <40487bdc$0$22519$5a62ac22@freenews.iinet.net.au>
Source record: 28074

Sure - the whole thing would cost several hundred Euros I would guess.
Phase noise would not be ideal as the VCO is covering 500 MHz when you
only need 70 MHz
Still, I suspect VCO design even for a narrow bandwidth is not for the
fainthearted....

Richard

Sti¿½phane Rey wrote:
> Richard,
>
> I had the idea, but minicircuits ROSxxxx are quite expensive here in France.
> more than 40 euros each.
> I've found a schematic for a VCO covering 1050 to 1350 MHz, quite simple,
> without PCB coils. Cost should be less than 2 or 3 euros.
> I'll try to design something upon this base.
>
> Stephane
>
> "Richard Hosking" <richardh@iinet.net.au> wrote in message
> news:40482146$0$22519$5a62ac22@freenews.iinet.net.au...
>
>>Stephane
>>
>>If you get QEX, the latest issue has a DDS/PLL board that might suit you
>>Alternatively, see http://www.qsl.net/ke5fx/synth.html
>>for details
>>Instead of the Minicircuits ROS 2100VW specified, use a ROS 1410 or ROS
>>1500. Are far as I am aware, they are pin compatible. You would need to
>>make some adjustments to the loop filter values and supply volts etc.
>>
>>Richard
>>VK6BRO
>>
>>
>>Sti¿½phane Rey wrote:
>>
>>>Hello everybody,
>>>
>>>I would like to design a VCO able to cover from 1240 and up to 1300 MHz
>
> in a
>
>>>PLL system.
>>>This will be part of the 23cm transceiver project.

>>>
>>>I've seen that Maxim has the MAX2754, intended for 1.2GHz operation. The
>>>datasheet shows it can reach 1300MHz.
>>>Has anybody experienced this component in PLL at such frequencies ?
>>>
>>>
>>>Otherwise, do you have some schematic examples to suggest with
>
> transistor
>
>>>but without PCB coils
>>>
>>>Regards
>>>
>>>Stephane, F1TJJ
>>>
>>>
>>
>
>

1789. Re: Elecraft

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 14:02:46 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <104h2e2krnve224@corp.supernews.com>
Source record: 28076

Only two? I thought you could pick anything between about 600 and 2000
depending on whether you wanted leather seats, the high end stereo, etc.

The base rig on the order page is 599, I assume that's authoritative. Looks
like you're in for a grand for a reasonably decked-out, QRP CW rig.
Expensive compared to your typical rice box, but cheap compared to anything
with a similar receiver.

..

"Ross Hockenberry" <bhockenberry@verizon.net> wrote in message
news:4047ebb0.41790781@news.verizon.net...
> Cost of K2. Anyone know the cost of the K2. Elecrafts web page is
> confusing with two different prices listed.

1790. Re: designing a 1240-1300MHz VCO

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 14:54:31 UTC
From: St&#65533;phane Rey <sre_prolem@yahoo.com>
Message-ID: <c2a4koht1@rex.ip-plus.net>
Source record: 28077

I've already designed some VCO but at lower frequencies.
This will be my first design above 1GHz.

This VCO will be the base for a 1240-1300MHz Narrow Band FM transceiver. I'm going to include it in a PLL system based on the LMX2326 National Semiconductor PLL chip.

Concerning DDS, I'm designing an hybrid DDS/PLL for 144MHz. In fact it should be usable for any frequency.
I would like to design a SSB transceiver. Once again, I've never tried SSB demodulation above HF bands

Ham-radio is experimentation so... I will experiment.

Thanks for your comments Richard

Best regards
Stephane

"Richard Hosking" <richardh@iinet.net.au> wrote in message news:40487bdc$0$22519$5a62ac22@freenews.iinet.net.au...
> Sure - the whole thing would cost several hundred Euros I would guess.
> Phase noise would not be ideal as the VCO is covering 500 MHz when you
> only need 70 MHz
> Still, I suspect VCO design even for a narrow bandwidth is not for the
> fainthearted....
>
> Richard
>
> St&#65533;phane Rey wrote:
> > Richard,
> >
> > I had the idea, but minicircuits ROSxxxx are quite expensive here in France.
> > more than 40 euros each.
> > I've found a schematic for a VCO covering 1050 to 1350 MHz, quite simple,
> > without PCB coils. Cost should be less than 2 or 3 euros.
> > I'll try to design something upon this base.
> >
> > Stephane
> >
> > "Richard Hosking" <richardh@iinet.net.au> wrote in message
> > news:40482146$0$22519$5a62ac22@freenews.iinet.net.au...
> >

> >>Stephane
> >>
> >>If you get QEX, the latest issue has a DDS/PLL board that might suit you
> >>Alternatively, see http://www.qsl.net/ke5fx/synth.html
> >>for details
> >>Instead of the Minicircuits ROS 2100VW specified, use a ROS 1410 or ROS
> >>1500. Are far as I am aware, they are pin compatible. You would need to
> >>make some adjustments to the loop filter values and supply volts etc.
> >>
> >>Richard
> >>VK6BRO
> >>
> >>
> >>St�phane Rey wrote:
> >>
> >>>Hello everybody,
> >>>
> >>>I would like to design a VCO able to cover from 1240 and up to 1300 MHz
> >
> > in a
> >
> >>>PLL system.
> >>>This will be part of the 23cm transceiver project.
> >>>
> >>>I've seen that Maxim has the MAX2754, intended for 1.2GHz operation.
The
> >>>datasheet shows it can reach 1300MHz.
> >>>Has anybody experienced this component in PLL at such frequencies ?
> >>>
> >>>
> >>>Otherwise, do you have some schematic examples to suggest with
> >
> > transistor
> >
> >>>but without PCB coils
> >>>
> >>>Regards
> >>>
> >>>Stephane, F1TJJ
> >>>
> >>>
> >>
> >
> >
>

1791. Re: ARRL bamboozled by FCC -- BPL Lives, big money talks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 15:16:59 UTC
From: Harv nelson <harv@whatever.net>
Message-ID: <404899EB.8030207@whatever.net>
Source record: 28078

> OK Hams in Cincy. When you can't hear anything because the band is full
> of BPL crap fire up your linears and rotate your beams toward the noise,
> then call CQ all night. The BPL people will find their internet not
> working because of the 'QRM' and there ain't a thing they can legally do
> about it! When the customers demand their money back maybe the power
> companies will call the experiment a failure.

My reaction (below) to the "QRM solution" (quoted above) was previously posted on QRZ.net.

This is not a suggested course of action.

The power companies know all about the Part 15 rules. They will never attempt to prosecute you or harass you via the FCC or Federal Courts.

You WILL find yourself in a LOCAL court room, before a LOCAL judge, and a LOCAL District Attorney. You will be prosecuted as a ï¿½Public Nuisance" under the same laws used to protect the public from dogs running at large, kids who squeel their car tires, and people who leave piles of garbage laying about.

The judge will likely issue a "cease and desist" order. If you ignore it, and fire up your rig anew, the LOCAL sherriff will be ordered to take possesion of your equipment and probably take down your antennas (at your expence), as well.

You can appeal these actions ... and you will very likely win your case on appeal. But, only after two or more years of gut wrenching legalistics and an expenditure reaching the $100,000 range ... probably several hunderd thousand dollars. Each and every ham like you, will likely have to fight this same battle, over, and over again ... for himself, by himself, in each and every jurisdiction. The ARRL doesn't have the money or staff to help you.

If you think its not possible, ask the guys from New York, who were prosecuted under the "scanner laws", if their rigs have been returned to them, yet. They won their cases.

You're going to get BPL, in one form or another. The reasons have nothing to do with an advance in technology. They have everything to do with MONEY and POLITICS. You're going to get BPL. And, quite frankly, you deserve it.

The FCC, The US Congress, The US Court systems ... are the very best that MONEY can buy. The Commissioners of the FCC are NOT technologists ... they are bookkeepres, accountants, would-be/failed politicians (or, their sons, daughters, brothers, and sisters), and lobbyists. They are

NOT your "friends-in-high-places". They've been bought and paid for. They "take the king's coin, and do his bidding".

Why? You, Amateur Radio as a group, are mostly old, mostly fat, selfish, lazy ....and, you don't VOTE regularly and knowledgeably. When you do vote, it is on issues having little to do with your own self interest, your community, or your hobby.

At present, the FCC records some 900,000 licences for the Amateur service. Of these, at least 15% are dead people. That leaves about 800,000 "living" hams. Of those, less than 20 % vote regularly. So, you have a total influence with the US Congress of aproximately 160,000 votes .... scattered across 450 odd districts. Not much for political "Clout".

You are selfish. Your promote your hobby as an exclusionary fraternity. You are NOT, at this date, an inclusive, accepting, welcoming union of like minded and interested individuals. Rather, you link your hobby to additional exclusionary protocols ... religious belief (I throw "morse" and Christianity in the same pot), sexual orientation (or just gender), language, race, and social origin. If you doubt me, you haven't been listening to much of the chatter on 20 and 75 meter SSB. On my local 2 meter repeater, there are "extras" who won't even chat with a "no-code tech" or "queer CB'er". Heaven help you if they hear you practicing your Spanish with someone from Cuba.

What the hobby needs to force a repeal/reconsideration of BPL is an infussion of about 10 million kids each of whom has 2 parents and 4 grand-parents ... all of voting age. 60 million votes ... thats CLOUT!

But, given the history of such things as 'Incentive Licensing", the "Save Eleven" fiasco, and the religious "Rite of Morse", there is little chance of seeing any such infusion before the entire hobby is history.

You are going to get BPL!

In short, don't invest in a new Icom rig, or that fantastiic Orion. Instead, buy fishing gear ... find a new hobby, 'cuz this one is all but dead.

Harv Nelson, AI9NL
Washburn, WI

1792. Re: ARRL bamboozled by FCC -- BPL Lives, big money talks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 16:16:25 UTC
From: Arnold <pigs@pink.floyd>
Message-ID: <tJ12c.70356$eL2.3979164@twister.southeast.rr.com>
Source record: 28080

On Fri, 05 Mar 2004 09:16:59 -0600, Harv nelson stood up and said:
>
> The power companies know all about the Part 15 rules. They will never
> attempt to prosecute you or harass you via the FCC or Federal Courts.
>
> You WILL find yourself in a LOCAL court room, before a LOCAL judge, and
> a LOCAL District Attorney. You will be prosecuted as a ?Public
> Nuisance" under the same laws used to protect the public from dogs
> running at large, kids who squeel their car tires, and people who leave
> piles of garbage laying about.
>
> The judge will likely issue a "cease and desist" order. If you ignore
> it, and fire up your rig anew, the LOCAL sherriff will be ordered to
> take possesion of your equipment and probably take down your antennas
> (at your expence), as well.
>
> You can appeal these actions ... and you will very likely win your case
> on appeal. But, only after two or more years of gut wrenching
> legalistics and an expenditure reaching the $100,000 range ... probably
> several hunderd thousand dollars. Each and every ham like you, will
> likely have to fight this same battle, over, and over again ... for
> himself, by himself, in each and every jurisdiction. The ARRL doesn't
> have the money or staff to help you.
>
> If you think its not possible, ask the guys from New York, who were
> prosecuted under the "scanner laws", if their rigs have been returned to
> them, yet. They won their cases.
>
> You're going to get BPL, in one form or another. The reasons have
> nothing to do with an advance in technology. They have everything to do
> with MONEY and POLITICS. You're going to get BPL. And, quite frankly,
> you deserve it.
>
> The FCC, The US Congress, The US Court systems ... are the very best
> that MONEY can buy. The Commissioners of the FCC are NOT technologists
> ... they are bookkeepres, accountants, would-be/failed politicians (or,
> their sons, daughters, brothers, and sisters), and lobbyists. They are
> NOT your "friends-in-high-places". They've been bought and paid for.
> They "take the king's coin, and do his bidding".
>
> Why? You, Amateur Radio as a group, are mostly old, mostly fat, selfish,
> lazy ....and, you don't VOTE regularly and knowledgeably. When you do
> vote, it is on issues having little to do with your own self interest,
> your community, or your hobby.

>
> At present, the FCC records some 900,000 licences for the Amateur
> service. Of these, at least 15% are dead people. That leaves about
> 800,000 "living" hams. Of those, less than 20 % vote regularly. So,
> you have a total influence with the US Congress of aproximately 160,000
> votes .... scattered across 450 odd districts. Not much for political
> "Clout".
>
> You are selfish. Your promote your hobby as an exclusionary fraternity.
> You are NOT, at this date, an inclusive, accepting, welcoming union
> of like minded and interested individuals. Rather, you link your hobby
> to additional exclusionary protocols ... religious belief (I throw
> "morse" and Christianity in the same pot), sexual orientation (or just
> gender), language, race, and social origin. If you doubt me, you
> haven't been listening to much of the chatter on 20 and 75 meter SSB.
> On my local 2 meter repeater, there are "extras" who won't even chat
> with a "no-code tech" or "queer CB'er". Heaven help you if they hear
> you practicing your Spanish with someone from Cuba.
>
> What the hobby needs to force a repeal/reconsideration of BPL is an
> infussion of about 10 million kids each of whom has 2 parents and 4
> grand-parents ... all of voting age. 60 million votes ... thats CLOUT!
>
> But, given the history of such things as 'Incentive Licensing", the
> "Save Eleven" fiasco, and the religious "Rite of Morse", there is little
> chance of seeing any such infusion before the entire hobby is history.
>
> You are going to get BPL!
>
> In short, don't invest in a new Icom rig, or that fantastiic Orion.
> Instead, buy fishing gear ... find a new hobby, 'cuz this one is all but
> dead.
>
> Harv Nelson, AI9NL
> Washburn, WI

Hammer, meet the head of nail. Nice job.

1793. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 16:18:32 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <ku9h40ddm95tsrprea3l983d1onimv3kc6@4ax.com>
Source record: 28079
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Fri, 05 Mar 2004 11:28:51 GMT, Active8 <reply2group@ndbbm.invalid>
wrote:

>He already has a book with a fair amount of tables and all the
>explainations on how to go about the design. I'm wondering WTF
>here. Hey paul. wtf?

Fair point. I just wondered if anyone had a design similar to
requirements *already* lying around they might post it, that's all.
Save me a bit of scrawling and button-pushing. I didn't wish to put
anyone out.
Thanks to all who responded, BTW. Some very useful steers.
--

The BBC: Licensed at public expense to spread lies.

1794. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 16:21:08 UTC
From: Pete KE9OA <n.gianakopoulos@worldnet.att.net>
Message-ID: <UN12c.76110$aH3.2332381@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28081
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Hi Paul,
E-mail me directly and let me know how many poles you need. I
have the AADE program, and I will be glad to do that for you.

Pete

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:ku9h40ddm95tsrprea3l983d1onimv3kc6@4ax.com...
> On Fri, 05 Mar 2004 11:28:51 GMT, Active8 <reply2group@ndbbm.invalid>
> wrote:
>
> >He already has a book with a fair amount of tables and all the
> >explainations on how to go about the design. I'm wondering WTF
> >here. Hey paul. wtf?
>
> Fair point. I just wondered if anyone had a design similar to
> requirements *already* lying around they might post it, that's all.
> Save me a bit of scrawling and button-pushing. I didn't wish to put
> anyone out.
> Thanks to all who responded, BTW. Some very useful steers.
> --
>
> The BBC: Licensed at public expense to spread lies.

1795. Contest Group PA6F Website

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 16:31:49 UTC
From: Chris <nomail@nospam.com>
Message-ID: <VX12c.9563$C_5.9436@fe04.usenetserver.com>
Source record: 28082

Dear Om's

For the people who are interested.

The is now a website from the Contest Group PA6F from The Netherlands.

Please Visit the website for more Information.

http://www.pa6f.com

Thanx for your visit and reading this message.

Greetings the team.

1796. Help required info on HiMARK DM1461 PLL chip

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 16:38:03 UTC
From: ukmonitor@hotmail.com
Message-ID: <ed985fdb.0403050838.2b353180@posting.google.com>
Source record: 28083

Hi,

Can any one help me with an application note or circuit for a 2.4GHz
PLL circuit using a HiMARK DM1461 PLL chip ?

I'm hoping to modify a handheld 2.4GHz Video RX for continuous tuning
but I can't find info on the HiMARK website.

The PLL uses two varicap diodes in some sort of push push arrangement
driven directly from the PLL chip.

I've not seen anything like this before, so I'm looking for some info.

UKM

1797. Re: Elecraft

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 18:21:33 UTC
From: N2EY@AOL.COM
Message-ID: <c2356669.0403051021.7da72dd0@posting.google.com>
Source record: 28085

bhockenberry@verizon.net (Ross Hockenberry) wrote in message news:<4047ebb0.41790781@news.verizon.net>...
> Cost of K2. Anyone know the cost of the K2. Elecrafts web page is
> confusing with two different prices listed.

I only find one price: $599.00

That's for the bare-bones K2 (CW only, 80/40/30/20/17/12/15/10 meters, 15 watts max) with no options, and less shipping and tax (if applicable).

Options include (this may not be a complete list - they keep adding goodies!)

- Noise blanker
- SSB adapter
- 160 meters/2nd rx antenna
- QRP ATU
- Analog audio filter/real time clock
- DSP audio filter/real time clock
- Internal battery
- Serial link
- 100 watt internal power amp/serial link
- 100 watt ATU (mounts externally)
- External band interface box

And lots more.

What prices do you see?

73 de Jim, N2EY

1798. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 18:23:31 UTC
From: John Jardine <john@jjdesigns.fsnet.co.uk>
Message-ID: <c2ag6b$774$1@news8.svr.pol.co.uk>
Source record: 28084
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:34ff40pdgam1qv9db89his2b651kvmkv96@4ax.com...
> Hi all,
>
> I need a simple design for a BPF with a centre frequency of 17.2Mhz.,
> corner frequencies one Meg or therabouts either side of that and a
> reasonably good shape factor (nothing critical here). I don't mind
> having to do a bit of tweaking of values myself if anyone has
> something close to that they can post. Passive L/C combinations only,
> please. (assume the usual 50R nominal Zs.)
> Thanks,
>
> p.
> --
>
> The BBC: Licensed at public expense to spread lies.

The simplest filter that'll get you by, is this one. (a couple of tuned
circuits with a bit of top-coupling :-) ...

___ ||C1
-|_R_------.----.-------||-------.----.-------, O/p
Source |L2 |C2 || |C2 |L2 |
I/p | | | | .-.
C| --- --- C| | |load R
C| --- --- C| |R|
C| | | C| '-'
| | | | |
=== === === === ===
GND GND GND GND GND

F1=16.2e6 'lower limit MHz
F2=18.2e6 'upper limit MHz
R=50 'Ohms source and load impedance
Pi=3.142

C1 = (F1+F2) / (4 x Pi x F1 x F2 x R)
C2 = F1 /(Pi x F2 x (F2-F1) x R)/2
L2 = 2xR /(4 x Pi) x (1/F1 - 1/F2)

The inductors end up being quite small but a couple of loops of wire cost
nothing. At 25megs the output is down to about 3% , which is not bad.

This particular style is the "3 element" design and from the traditional
"Constant K" filter stable. The pleasantly simple to design "constant K's"

and associated "M derived" filters, can be easily and freely used for most day-to-day electronics work.

Exact Filter design, or 'synthesis' as they nowadays prefer to call it, can be a nightmare if you're coming in from scratch. Even using a filter design programme requires a good knowledge of filter types/performance/spec's before data can begin to be entered.
If not using a prog' you move onto the more vexing method of having to design an initial (prototype) low-pass filter, either via precalculated tables or computing the required co-efficients, then mathematically transforming the low-pass values into a bandpass (etc) design. For higher order filters it can be ball-acheing drudgery and even then inductor resistance has a nasty habit of spoiling that pristine work of art. (not a problem with DSP filters).

I can't suggest a decent book, as the general purpose books seem over complicated and destined to be written by maths people for maths people. (The old GPO line-comm's manuals have useful notes on the 'K and M ' filters).
regards
john

1799. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 18:27:38 UTC
From: bg <bg@nospam.com>
Message-ID: <c2agou$k1l$1@terabinaries.xmission.com>
Source record: 28086
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

```
Go to Alt Binaries Schematics -
bg
Paul Burridge wrote in message
<34ff40pdgam1qv9db89his2b651kvmkv96@4ax.com>...
>Hi all,
>
>I need a simple design for a BPF with a centre frequency of 17.2Mhz.,
>
```

1800. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 18:28:51 UTC
From: Joel Kolstad <JKolstad71HatesSpam@Yahoo.Com>
Message-ID: <c2agv0gag1@news.oregonstate.edu>
Source record: 28087
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

John Jardine <john@jjdesigns.fsnet.co.uk> wrote:
> I can't suggest a decent book, as the general purpose books seem over
> complicated and destined to be written by maths people for maths people.

I'd suggest Temes and LaPatra, "Circuit Synthesis and Design." Now out of print, but occasionally you can find a cheap old copy used.

I'd also suggest the original poster does a couple of the exercises (he might have already), doing what you describe with building a low frequency prototype filter and then transforming it to a different type and frequency range, but just for, e.g., a second order filter. There's not much to be gained by doing the 'drudgery,' as you say, for a higher order filter other than proficiency in aithrmetic.

---Joel Kolstad

1801. WAS: Re: 455 KC oscillator = CB jamming device/NOW Jamming hip-hop assholes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 19:48:03 UTC
From: Eddie Haskel <wiseguy@clever.com>
Message-ID: <TP42c.6336$Cy.3269@newssvr27.news.prodigy.com>
Source record: 28088

Jamming the (hip-hop/rap crap)assholes with their high powered car radios blasting that hip-hop crap is EASY! try this...(I do it a lot) take two transmitters(I use 2 50 watt 2 meter TX's) and key them both at the same time. Set the frequency to something not used a lot (I use 146.565).The resulting hetrodyne will come out of ANYTHING non-linear! It tears their system a new asshole.If one of the radios is VFO (like my IC-706MKII-G) you can swing it around and set it for the most annoying tone.
It usually hits their power amplifier directly, they dont have control of it from the head.In fact when we tested it on a guys system(he was a willing sucker) it got worse as he turned down the volume!! Seems it forms a ground loop and the RF gets into the power amp even better. By the time they figure it out, damage is done. a pair of 2 meter "spikes" is hard to see and they dont know what they are for...have fun! Eddie

"CL" <does_it_matter@noreply.com> wrote in message
news:EQR1c.7418$5M.249451@dfw-read.news.verio.net...
> Maybe this was touched on before, but since we're discussing the designing
> of jamming devices for idiot radio operators, how about something to jam
the
> audio of the ass holes who insist on playing their stereos full blast in
the
> cars? Now "that" would be a treat! I'd love to replace that deep thumping
> crap with a nice high pitched squeal. CL
>
>
>

1802. Re: Elecraft

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 20:53:34 UTC
From: bhockenberry@verizon.net
Message-ID: <4048e865.16424962@news.verizon.net>
Source record: 28089

On 5 Mar 2004 10:21:33 -0800, N2EY@AOL.COM (N2EY) wrote:
The K2 is listed at 599. The 100W kit lis listed as K2 359.00 + the
amplifier section.

>bhockenberry@verizon.net (Ross Hockenberry) wrote in message
news:<4047ebb0.41790781@news.verizon.net>...
>> Cost of K2. Anyone know the cost of the K2. Elecrafts web page is
>> confusing with two different prices listed.
>
>I only find one price: $599.00
>
>That's for the bare-bones K2 (CW only, 80/40/30/20/17/12/15/10 meters,
>15 watts max) with no options, and less shipping and tax (if
>applicable).
>
>Options include (this may not be a complete list - they keep adding
>goodies!)
>
>- Noise blanker
>- SSB adapter
>- 160 meters/2nd rx antenna
>- QRP ATU
>- Analog audio filter/real time clock
>- DSP audio filter/real time clock
>- Internal battery
>- Serial link
>- 100 watt internal power amp/serial link
>- 100 watt ATU (mounts externally)
>- External band interface box
>
>And lots more.
>
>What prices do you see?
>
>73 de Jim, N2EY

1803. Re: Re: 455 KC oscillator = CB jamming device/NOW Jamming hip-hop assholes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 21:41:56 UTC
From: CL <does_it_matter@noreply.com>
Message-ID: <6v62c.7456$5M.250366@dfw-read.news.verio.net>
Source record: 28090

Thanks! I'll have to give that a try.... CL

"Eddie Haskel" <wiseguy@clever.com> wrote in message
news:TP42c.6336$Cy.3269@newssvr27.news.prodigy.com...
> Jamming the (hip-hop/rap crap)assholes with their high powered car radios
> blasting that hip-hop crap is EASY! try this...(I do it a lot) take two
> transmitters(I use 2 50 watt 2 meter TX's) and key them both at the same
> time. Set the frequency to something not used a lot (I use 146.565).The
> resulting hetrodyne will come out of ANYTHING non-linear! It tears their
> system a new asshole.If one of the radios is VFO (like my IC-706MKII-G)
you
> can swing it around and set it for the most annoying tone.
> It usually hits their power amplifier directly, they dont have control of
it
> from the head.In fact when we tested it on a guys system(he was a willing
> sucker) it got worse as he turned down the volume!! Seems it forms a
ground
> loop and the RF gets into the power amp even better. By the time they
figure
> it out, damage is done. a pair of 2 meter "spikes" is hard to see and they
> dont know what they are for...have fun! Eddie
>
>
> "CL" <does_it_matter@noreply.com> wrote in message
> news:EQR1c.7418$5M.249451@dfw-read.news.verio.net...
> > Maybe this was touched on before, but since we're discussing the
designing
> > of jamming devices for idiot radio operators, how about something to jam
> the
> > audio of the ass holes who insist on playing their stereos full blast in
> the
> > cars? Now "that" would be a treat! I'd love to replace that deep
thumping
> > crap with a nice high pitched squeal. CL
> >
> >
> >
>
>

1804. FA:Chge-over relay 115v, Plugin coils+

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 21:44:25 UTC
From: Heytubeguy <heytubeguy@worldnet.att.net>
Message-ID: <Zw62c.76951$aH3.2353600@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28091

See it and other items at:

http://cgi6.ebay.com/ws/eBayISAPI.dll?ViewSellersOtherItems&userid=heytubeguy&completed=0&sort=3&since=-1&include=0&page=1&rows=25

Tnx 73 heytubeguy

1805. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 22:36:03 UTC
From: averyfineman@aol.com
Message-ID: <20040305173603.21457.00004446@mb-m10.aol.com>
Source record: 28093

In article <3200347.0403042250.29de2aa6@posting.google.com>, k7itm@aol.com (Tom Bruhns) writes:

>Download RFSim99 and let it do it for you. Download Filter Design
>from AADE's site and let it do it for you. Download NuHertz's demo
>version of their filter design software and let it do it for you.
>There may even be web aplets that will do it for you. And then you
>can play with configurations and shape factors and the inevitable
>tradeoffs between complexity and shape factor.

Or, you can ask me for a free package of LCie4 that I first wrote back in '93 and have revised only slightly since then. DOS level, no fancy screens or prettyness in graphics...but LCie4 allows individual component value variations, actual unloaded Q values, and Sensitivity (output response or input impedance) to any specified tolerance of all-Cs or all-Ls. Works under Win98 and WinXP.

Does 3 to 9 section Lowpass, Highpass, Bandpass, and Bandstop and 2 to 9 section "resonator" Bandpass filters with choice of "high" or "low" impedance coupling by C or L. Butterworth, Tchebyshev (or Chebyshev, heh heh), or one kind of Elliptic, choice of minimum L or minimum C configurations on odd sections (or 'orders' as some insist on calling them).

Output Response and Input Impedance are separate analyses, not part of the calculation of filter component Synthesis. Q of all Cs or all Ls is frequency-independent; i.e., same specified value at all frequencies of analysis. That's a compromise to simplify analysis; purists want a SPICE-like thing, no doubt, where they can model everything...:-) Chances are those purists never built a real one to experience the joy of transmutation of paper into hardware.

A "parts listing" command yields a half-S version of a "schematic" good enough to show the values of separate components, on-screen or on paper. LCie4 is fast and thorough, lets one play with values and affect on response until one gets tired of doing so. :-)

Less than 250K in total package size, sent as an e-mail attachment in response to polite e-mail inquiry. It's free...do not ask for money back if dissatisfied...

Len Anderson
retired (from regular hours) electronic engineer person

1806. Re: One Tube Superhet

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 22:36:08 UTC
From: averyfineman@aol.com
Message-ID: <20040305173608.21457.00004447@mb-m10.aol.com>
Source record: 28092

In article <40482548$0$3103$61fed72c@news.rcn.com>, "R J Carpenter"
<rcarpen@erols.com> writes:

>Pulling this thread a little to one side:
>
>The "Radiotron Designer's Handbook" from the Amalgamated Wireless Valve
>Company (Australia) had a number of tricks to reduce the tube count in
>radios. Its main interests are AM and shortwave broadcast radios.
>
>The book was sold by RCA in the USA. Anyone interested in tube radios
>should have a copy. It's a couple of inches thick. It was last issued in the
>1950s - mine includes info on FM broadcast receivers.

A CD version was published and sold three years ago by Audio
Amateur Publications Inc., Peterborough, New Hampshire. I got mine
from Old Colony Sound Lab through their website...don't know if it is
still there. It's a nice keepsake and reminder of old times in vacuum
state electronics. CD beats the heck out of the thick paper version
someone snaffled from me years ago. :-)

Len Anderson
retired (from regular hours) electronic engineer person

1807. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-05 23:40:43 UTC
From: Active8 <reply2group@ndbbm.invalid>
Message-ID: <zpmil8ep9blp$.dlg@news.individual.net>
Source record: 28094
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Fri, 05 Mar 2004 16:18:32 +0000, Paul Burridge wrote:

> On Fri, 05 Mar 2004 11:28:51 GMT, Active8 <reply2group@ndbbm.invalid>
> wrote:
>
>>He already has a book with a fair amount of tables and all the
>>explainations on how to go about the design. I'm wondering WTF
>>here. Hey paul. wtf?
>
> Fair point. I just wondered if anyone had a design similar to
> requirements *already* lying around they might post it, that's all.
> Save me a bit of scrawling and button-pushing. I didn't wish to put
> anyone out.
> Thanks to all who responded, BTW. Some very useful steers.

Yes. I had to check my disorganized drive to make sure I'd been to
all those links. BTDT. I like having tools like that around to
compare what they say with what I figgered out on paper.
--
Best Regards,
Mike

1808. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-06 03:11:57 UTC
From: qrk <mark@reson.DELETE.ME.com>
Message-ID: <kffi40hdetb0e9qn4n29d2g1g6qqs3h0tn@4ax.com>
Source record: 28095
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Thu, 04 Mar 2004 23:43:21 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>Hi all,
>
>I need a simple design for a BPF with a centre frequency of 17.2Mhz.,
>corner frequencies one Meg or therabouts either side of that and a
>reasonably good shape factor (nothing critical here). I don't mind
>having to do a bit of tweaking of values myself if anyone has
>something close to that they can post. Passive L/C combinations only,
>please. (assume the usual 50R nominal Zs.)
>Thanks,

Since your too lazy to do this, here, have a few designs. You can run
these on LTSpice. What is reasonably good shape factor?
Mark

```
Butterworth, pi-input, 1st-order low-pass prototype
Vin 1 0 AC 2.0000V
Rin 1 2 50.000
L1 2 0 26.899n
C1 2 0 3.1831n
Rout 2 0 50.000
.AC DEC 396 253.58kHz 1.1667GHz
.PROBE
.END
```

```
Butterworth, pi-input, 2nd-order low-pass prototype
Vin 1 0 AC 2.0000V
Rin 1 2 50.000
L1 2 0 38.041n
C1 2 0 2.2508n
L2 2 3 5.6270u
C2 3 4 15.216p
Rout 4 0 50.000
.AC DEC 792 5.7378MegHz 51.560MegHz
.PROBE
.END
```

```
Butterworth, loose coupled, 2nd-order low-pass prototype
Vin 1 0 AC 2.0000V
Rin 1 2 50.000
C1 2 0 2.0654nF
L1 2 0 38.046nH
C2 2 3 185.01pF
```

```
C3 3 0 2.0654nF
L2 3 0 38.046nH
Rout 3 0 50.000
.AC DEC 792 5.7378MegHz 51.560MegHz
.PROBE
.END
```

```
Butterworth, pi-input, 3rd-order low-pass prototype
Vin 1 0 AC 2.0000V
Rin 1 2 50.000
L1 2 0 53.798n
C1 2 0 1.5915n
L2 2 3 7.9577u
C2 3 4 10.760p
L3 4 0 53.798n
C3 4 0 1.5915n
Rout 4 0 50.000
.AC DEC 1188 10.224MegHz 28.937MegHz
.PROBE
.END
```

```
Butterworth, loose coupled, 3rd-order low-pass prototype
Vin 1 0 AC 2.0000V
Rin 1 2 50.000
C1 2 0 1.4607nF
L1 2 0 53.798nH
C2 2 3 130.84pF
C3 3 0 1.3299nF
L2 3 0 53.798nH
C4 3 4 130.84pF
C5 4 0 1.4607nF
L3 4 0 53.798nH
Rout 4 0 50.000
.AC DEC 1188 10.224MegHz 28.937MegHz
.PROBE
.END
```

```
Butterworth, loose coupled, 8th-order low-pass prototype
Vin 1 0 AC 2.0000V
Rin 1 2 50.000
C1 2 0 511.07pF
L1 2 0 137.94nH
C2 2 3 109.63pF
C3 3 0 457.95pF
L2 3 0 137.94nH
C4 3 4 53.121pF
C5 4 0 527.60pF
L3 4 0 137.94nH
C6 4 5 39.985pF
C7 5 0 543.91pF
L4 5 0 137.94nH
```

```
C8 5 6 36.809pF
C9 6 0 543.91pF
L5 6 0 137.94nH
C10 6 7 39.985pF
C11 7 0 527.60pF
L6 7 0 137.94nH
C12 7 8 53.121pF
C13 8 0 457.95pF
L7 8 0 137.94nH
C14 8 9 109.63pF
C15 9 0 511.07pF
L8 9 0 137.94nH
Rout 9 0 50.000
.AC DEC 3170 15.208MegHz 19.453MegHz
.PROBE
.END
```

1809. vfo question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-06 08:26:28 UTC
From: KU4YP <ku4yp@verizon.net>
Message-ID: <UWf2c.70794$C65.10561@nwrddc01.gnilink.net>
Source record: 28096

hello all,

i have a vfo from a heathkit hw-101. i also have a knight kit t-60.
question is what would it take and how much trouble would it be to build an
external vfo for my t-60 transmitter using this vfo? i have read some of the
old hanbooks but wanted to hear from the group.

tnx and 73 mike

--
73 de KU4YP Member Flying Pigs QRP
Michael Prevatt #225
Bartow, Florida Member Florida Contest Group

1810. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-06 14:06:58 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c2clu1$oo1$1@sparta.btinternet.com>
Source record: 27997
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

> I need a simple design for a BPF with a centre frequency of 17.2Mhz.,

==========

Hello Paul,

I'm not in the habit of fishing for compliments but, out of curiosity, did you find my program BANDPAS1 of more use to you than the many other responses to your query.

By the way, the Pi-network filter can be matched to ANY pair of terminating impedances by tapping down the coils at each end. Been there - done that. It also allows the most convenient component values to be used.

.....
Regards from Reg, G4FGQ
For Free Radio Design Software go to
http://www.btinternet.com/~g4fgq.regp
.....

1811. wtb large inductor

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-06 14:12:36 UTC
From: larry d clark <buddycl@swbell.net>
Message-ID: <o%k2c.7854$fd4.1346@newssvr23.news.prodigy.com>
Source record: 27998

wtb a large,13 - 14 inch long, 5X5 inch square,
50 - 60 uh, edge wound inductor something like
depicted in the following picture:

http://home.swbell.net/buddycl/bigind.jpg

larry
kd5foy

1812. Re: simple synchronous detector?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-06 14:18:20 UTC
From: Chris Trask <christrask@earthlink.net>
Message-ID: <M4l2c.24433$aT1.13022@newsread1.news.pas.earthlink.net>
Source record: 27999

"Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote in message
news:bujkpqbaf1@newshost.mot.com...
> Steve's imbedded comments:
>
> "Avery Fineman" <averyfineman@aol.com> wrote in message
> news:20040119225825.21642.00003872@mb-m01.aol.com...
> > In article <buho5fcgv1@newshost.mot.com>, "Steve Nosko"
> > <suteuve.nosukowicuz@moutouroula.com> writes:
> >
> > >What's the essence of an AM sync detector? Extract the carrier
> > >(filter/clip/amplify the bajeebers out of it) then product detect the
> > >sidebands ? Steve N, K,9;d, c. i My email has no u's.
> >
> > ...locking a local mixing oscillator to the carrier frequency and
> > mixing that with the whole thing.
>
> Ah yes! need a reliable LO.
>

Absolutely not. In a homodyne receiver, it's only necessary to recover
the carrier by way of a limiting amplifier.

>
> > ... A carrier in-phase lock allows separate
> > detection of the sidebands...which could be used to
> > advantage such as having binaural audio modulation with AM.
>
> Ah yes... Back to the old three methods of generating / detecting
> sideband signals.
>

What's being suggested here is a synchrodyne receiver, where an
oscillator is locked to the carrier of the incoming signal. This requires a
Costas loop and is not at all necessary for simple AM detection. A homodyne
is sufficient.

Chris

,----------------------. High Performance Mixers and
/ What's all this \ Amplifiers for RF Communications
/ extinct stuff, anyhow? /
\ _______,--------------' Chris Trask / N7ZWY
_ |/ Principal Engineer
oo\ Sonoran Radio Research
(__)\ _ P.O. Box 25240
\ \ .' `. Tempe, Arizona 85285-5240

\ \ / \
\ '" \ IEEE Member #40274515
. ( ) \
'-|)__| :. \ Email: christrask@earthlink.net
| | | | \ '. http://www.home.earthlink.net/~christrask
c__; c__; '-..'>.__

Graphics by Loek Frederiks

1813. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-06 14:19:35 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c2cmln$q45$1@sparta.btinternet.com>
Source record: 28000
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Error. My previous message was intended to be by private e-mail.

Reg

1814. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-06 14:44:46 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <86oj409g7dkh1bt26kughv41gbqdgk6197@4ax.com>
Source record: 28002
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Fri, 05 Mar 2004 23:40:43 GMT, Active8 <reply2group@ndbbm.invalid>
wrote:

>Yes. I had to check my disorganized drive to make sure I'd been to
>all those links. BTDT. I like having tools like that around to
>compare what they say with what I figgered out on paper.

Indeed. Legendary Reg's programs are always well worth a look at, of
course. I did try out his filter design one last night, just out of
curiosity. Looks pretty neat. I'll run some sims through it later to
see what sort of results it gives. Might post the results later if
time permits...

--

The BBC: Licensed at public expense to spread lies.

1815. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-06 14:44:48 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <gfoj405chmj1kl6mitovqj36iggsub40jj@4ax.com>
Source record: 28003
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 6 Mar 2004 14:06:58 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@ZZZbtinternet.com> wrote:

>> I need a simple design for a BPF with a centre frequency of 17.2Mhz.,
>
>============================
>
>Hello Paul,
>
>I'm not in the habit of fishing for compliments but, out of curiosity, did
>you find my program BANDPAS1 of more use to you than the many other
>responses to your query.

Thanks, Reg. See my reply to Mike (Active8) elsewhere on this thread.
I'm one of your biggest admirers and you've always been something of a
folk hero to me. :-)

>By the way, the Pi-network filter can be matched to ANY pair of terminating
>impedances by tapping down the coils at each end. Been there - done that.
>It also allows the most convenient component values to be used.

Noted.
--

The BBC: Licensed at public expense to spread lies.

1816. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-06 14:44:50 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <inoj40tabcpai3vqi56lij4birm8j7p8ig@4ax.com>
Source record: 28004
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Fri, 05 Mar 2004 19:11:57 -0800, qrk <mark@reson.DELETE.ME.com>
wrote:

>Since your too lazy to do this, here, have a few designs. You can run
>these on LTSpice. What is reasonably good shape factor?
>Mark

Thanks Mark (and everyone else who responded) I will certainly check
this lot out later today.
I've got more than enough designs and pointers to design programs now,
so no more *please*!!! A chap *can* have too much help sometimes. :-)
--

The BBC: Licensed at public expense to spread lies.

1817. Astronomy / Space Newsletter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-06 14:57:09 UTC
From: Brian Webb <kd6nrp@earthlink.net>
Message-ID: <9FI2c.21735$yZ1.18354@newsread2.news.pas.earthlink.net>
Source record: 28005

Hi All:

I publish a free newsletter that provides information on upcoming Vandenberg AFB missile launches plus space and astronomy news of interest to California and the Southwest. It occassionally also has a ham- or radio-related news item.

For information, go to:

http://www.spacearchive.info/newsletter.htm

Regards,

Brian, KD6NRP

1818. Re: vfo question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-06 17:08:31 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c2d0if$2h1$1@freenet9.carleton.ca>
Source record: 28006

"KU4YP" (ku4yp@verizon.net) writes:
> hello all,
>
> i have a vfo from a heathkit hw-101. i also have a knight kit t-60.
> question is what would it take and how much trouble would it be to build an
> external vfo for my t-60 transmitter using this vfo? i have read some of the
> old hanbooks but wanted to hear from the group.
>
I don't think it's a good choice.

The vfo from the SSB transceiver has a fixed range, I believe 5 to 5.5MHz,
and must have been linearized so the dial comes up properly.

The T60, or any AM/CW transmitter of that vintage uses a 3.5MHz or
7MHz (and that might change with the band) and multiplies up for the higher
bands.

In order to use the first with the second, you'll have to shift the
VFO down in frequency, likely by changing the coil. You'll kill
the linear tuning, and unless you do a good job, you may mess with
the stability. If the dial is still attached to the VFO, you will no
longer have the proper display of frequency.

The best way, though not the simplest, would be to feed the VFO into
a mixer, and then feed a crystal oscillator output into the other port
of the mixer. The output of the mixer will be the 3.5MHz or 7MHz that
the T60 needs, and the frequency readout of the VFO will remain true.
Tradeoffs are that if you don't put a good filter on the output of the mixer,
you will get spurious signals, and while the readout will remain accurate,
it will not show the actual frequency, since the T60 will be multiplying
it's output frequency. On the higher bands, as multiplication goes up,
the actual band will be covered by a smaller swing of the dial, though
that applies to any VFO used with a multiplying transmitter.

Michael VE2BVW

1819. F.S. Vintage Tubes/Valves, Radio Parts, & equipment

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-06 17:17:38 UTC
From: Christiane Cloutier <christiane.cloutier@sympatico.ca>
Message-ID: <T6l2c.16921$JZ6.575487@news20.bellglobal.com>
Source record: 28001

Reduced for quick sale, first $300.00 Cdn, takes all!
Please check website for pictures and info.

http://ve2owb.tripod.com/

Dan (613) 590-1398

Email: ve2owb@hotmail.com

1820. Re: Which DDS chip?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-06 17:41:51 UTC
From: "Mark J. Dulcey" <mark@buttery.org>
Message-ID: <pan.2004.03.06.17.41.49.101091@buttery.org>
Source record: 28007

On Sun, 29 Feb 2004 01:12:41 +0000, SWbeginner wrote:

> I like to experiment with the Analog Devices DDS for a receiver.
> Anyone have a favorite one with good features and least hassle?

Well, it all depends on what sort of design you are doing.

If you're working on a very low power portable design, you want to look at the AD9834. This baby consumes a mere 8ma at 2.5 to 5 volts. The reference clock is limited to 50 MHz, which means that 20 MHz output is about its limit with reasonable spectral purity, though you might get up to the 15 meter band with careful filtering.

The AD9850 and AD9851 are popular for a lot of ham designs. The AD9850 has a maximum reference clock of 125 MHz, so it's good through the 6 meter band; the AD9851 can handle a reference clock of up to 180 MHz. These chips consume around 100ma at 5 volts (somewhat less if run at 3.3 volts, but then the reference clock speed limit is lower); not ideal for a battery powered design, but still reasonable. The New Jersey QRP Club offers a small daughterboard designed for the AD9850, and there is lots of code available online to control them.

The AD9950 series is the new kid on the block. These run at 400 MHz, making operation up to the 2 meter band feasible. They have a 14-bit DAC, rather than the 10-bit one used in the older devices, so spectral purity should be significantly improved. They consume about 85ma; reasonable for this level of performance. There are some drawbacks... they come in a tiny package that's hard to solder by hand. They run at 1.8v, and the inputs only accept voltages up to 3.3v, so you'll want to design with lower voltage control logic. Still, if you want to push the state of the DDS art, these are your chips.

I haven't heard of any ham experimentation with the AD9858. This one can take a reference clock up to 1 GHz, which means that 450 MHz output might be possible with careful design. It's power-hungry, though; around 750mA.

You will also see some designs using older chips. The AD9830, the first readily available DDS chip that could handle a 50 MHz reference clock, and its serial input cousin the AD9835, were popular for a while, but the much lower power AD9834 is more appealing for new designs unless you need very fast frequency changes (the serial input lowers the possible rate of change). The AD9852 and AD9854 have seen some experimentation, but these chips are power hogs (they can consume more than an amp of power!), so they are definitely out of the question for portable designs, and it's hard to see a reason for using one of these in most designs rather than the AD9950 series. The AD9854 does have the unique feature of having TWO

synthesizers on the same chip, which could be useful for people
experimenting with high-speed digital data modes.

1821. Re: ARRL bamboozled by FCC -- BPL Lives, big money talks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-06 19:15:02 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <U9p2c.21884$JN2.7005@bignews4.bellsouth.net>
Source record: 28008

Harv nelson wrote:
>
>> OK Hams in Cincy. When you can't hear anything because the band is
>> full of BPL crap fire up your linears and rotate your beams toward the
>> noise, then call CQ all night. The BPL people will find their
>> internet not working because of the 'QRM' and there ain't a thing they
>> can legally do about it! When the customers demand their money back
>> maybe the power companies will call the experiment a failure.
>
>
> My reaction (below) to the "QRM solution" (quoted above) was previously
> posted on QRZ.net.
>
> This is not a suggested course of action.
>
The FCC regulations do require us to use the minimum amount of power to
get the job done. Is trying to overcome QRN a good reason to switch to
high power? I think the FCC regs would support that. I'm sure that if
we just operate as we normally do, perhaps switch to high power if
necessary (but still remain within the law as far as all requirements
apply) we are not anymore a Public Nuisance than we ever were. It's
like the guy who moved next door to an airport and then complains about
the noise. He KNEW the airport was there. Same here, the BPL providers
KNEW about part 15, they just have to live with it.

> The power companies know all about the Part 15 rules. They will never
> attempt to prosecute you or harass you via the FCC or Federal Courts.
>
> You WILL find yourself in a LOCAL court room, before a LOCAL judge, and
> a LOCAL District Attorney. You will be prosecuted as a ï¿½Public
> Nuisance" under the same laws used to protect the public from dogs
> running at large, kids who squeel their car tires, and people who leave
> piles of garbage laying about.
>
> The judge will likely issue a "cease and desist" order. If you ignore
> it, and fire up your rig anew, the LOCAL sherriff will be ordered to
> take possesion of your equipment and probably take down your antennas
> (at your expence), as well.
>
A good attorney would point out that federal law trumps local law.
There is probably enough prior cases dealing with TVI to act as such a
defense.

> You can appeal these actions ... and you will very likely win your case
> on appeal. But, only after two or more years of gut wrenching

> legalistics and an expenditure reaching the $100,000 range ... probably
> several hunderd thousand dollars. Each and every ham like you, will
> likely have to fight this same battle, over, and over again ... for
> himself, by himself, in each and every jurisdiction. The ARRL doesn't
> have the money or staff to help you.
>
> If you think its not possible, ask the guys from New York, who were
> prosecuted under the "scanner laws", if their rigs have been returned to
> them, yet. They won their cases.

As for the rest of your comments, I suppose you have made up your mind
and have burned your license, framed the ashes, and sold your radio gear
to the CB'er next door. I think there IS hope for the hobby, attitudes
about Morse are changing, the old farts in the ARRL being replaced by
younger blood. I personally think SOME way of keeping CW from totally
disapearing is needed, just to keep the diversity alive. It IS time for
a CW free HF license with mainline privilages. Keep the Extra class cw
bands exclusive, we can afford setting aside 25khz on several bands for
this. Keep some segments of all bands reserved for CW and other 'narrow
bandwith' modes, according to their usage. The ARRL's new band plans at
least sound like a start toward making ham radio more accessable to
everyone. BUT some sort of work IS needed to get a license, or we will
be left with nothing but the kaos that CB became. (If you don't put
some effort into getting yourself license, will you have enough pride in
it to respect it?)

As for BPL, I think in a decade it will be nothing but a memory, killed
off by better technology. Some of the power companies that are getting
into the broadband business are doing so by opening up their own
networks (which are fiber and rf based) to their end customers. The
term BPL in this case refers NOT to the method of delivery, but to the
provider. The power companies use a network to control power loading
transfering data between distribution points.
>
> You're going to get BPL, in one form or another. The reasons have
> nothing to do with an advance in technology. They have everything to do
> with MONEY and POLITICS. You're going to get BPL. And, quite frankly,
> you deserve it.
>
> The FCC, The US Congress, The US Court systems ... are the very best
> that MONEY can buy. The Commissioners of the FCC are NOT technologists
> ... they are bookkeepres, accountants, would-be/failed politicians (or,
> their sons, daughters, brothers, and sisters), and lobbyists. They are
> NOT your "friends-in-high-places". They've been bought and paid for.
> They "take the king's coin, and do his bidding".
>
> Why? You, Amateur Radio as a group, are mostly old, mostly fat, selfish,
> lazy ....and, you don't VOTE regularly and knowledgeably. When you do
> vote, it is on issues having little to do with your own self interest,
> your community, or your hobby.
>

> At present, the FCC records some 900,000 licences for the Amateur
> service. Of these, at least 15% are dead people. That leaves about
> 800,000 "living" hams. Of those, less than 20 % vote regularly. So,
> you have a total influence with the US Congress of aproximately 160,000
> votes .... scattered across 450 odd districts. Not much for political
> "Clout".
>
> You are selfish. Your promote your hobby as an exclusionary fraternity.
> You are NOT, at this date, an inclusive, accepting, welcoming union of
> like minded and interested individuals. Rather, you link your hobby to
> additional exclusionary protocols ... religious belief (I throw "morse"
> and Christianity in the same pot), sexual orientation (or just gender),
> language, race, and social origin. If you doubt me, you haven't been
> listening to much of the chatter on 20 and 75 meter SSB. On my local 2
> meter repeater, there are "extras" who won't even chat with a "no-code
> tech" or "queer CB'er". Heaven help you if they hear you practicing
> your Spanish with someone from Cuba.
>
> What the hobby needs to force a repeal/reconsideration of BPL is an
> infussion of about 10 million kids each of whom has 2 parents and 4
> grand-parents ... all of voting age. 60 million votes ... thats CLOUT!
>
> But, given the history of such things as 'Incentive Licensing", the
> "Save Eleven" fiasco, and the religious "Rite of Morse", there is little
> chance of seeing any such infusion before the entire hobby is history.
>
> You are going to get BPL!
>
> In short, don't invest in a new Icom rig, or that fantastiic Orion.
> Instead, buy fishing gear ... find a new hobby, 'cuz this one is all but
> dead.
>
> Harv Nelson, AI9NL
> Washburn, WI

1822. Re: ARRL bamboozled by FCC -- BPL Lives, big money talks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-06 20:08:41 UTC
From: Arnold <pigs@pink.floyd>
Message-ID: <ddq2c.51377$%d3.4302191@twister.southeast.rr.com>
Source record: 28009

On Sat, 06 Mar 2004 19:15:02 +0000, Ken Scharf stood up and said:
>
> As for the rest of your comments, I suppose you have made up your mind
> and have burned your license, framed the ashes, and sold your radio gear
> to the CB'er next door.

I think you missed the point of his post. It is an editorial on the state of the hobby and I think it drives home the current attitudes many (no all, of course) hams have towards the proposed changes the ARRL are supporting. It's really human nature; many people are resistant to change for variety of reasons and sometimes it takes a long, hard look in the mirror to see how silly this resistance is. The point being, if one insists on "living in the past", then their is no future. This applies to everything, not just amateur radio.

And I don't think the original poster has burned his license. He's probably doing more than you or I to save the hobby by shoving the egocentrism that many hams exhibit right back in their face. And for the record, I don't think the ARRL went far enough in their recommendations. I believe their should only be two licenses: a beginners with VHF/UHF access and limited HF access, and a "general" license with full privileges and no CW required. Before you (or anybody else) flame me for this, note that I do know CW. The only reason I learned it was to get HF privileges. I maybe had 3 or 4 QSOs using CW but it's not for me. I find other digital modes like PSK31 to be more fun. But that's just me.

1823. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-06 22:46:07 UTC
From: jmeyer@nektonresearch.com
Message-ID: <21ede509.0403061446.40e36102@posting.google.com>
Source record: 28011
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message

> I've got more than enough designs and pointers to design programs now,
> so no more *please*!!! A chap *can* have too much help sometimes. :-)

Note to Paul but also to everyone else:

For every person who posts a question and/or response there are
probably a thousand people who read and benefit from the information
in a thread but never post anything. You may be full up Paul, there
may also be many more readers who need more information but won't or
can't ask.

Please, everyone, continue to contribute as long as you can.

Jim

1824. FA: Antique Radio Belts+RF Switch.....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-06 23:07:35 UTC
From: Heytubeguy <heytubeguy@worldnet.att.net>
Message-ID: <XQs2c.160512$hR.2982476@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28012

See at

http://cgi6.ebay.com/ws/eBayISAPI.dll?ViewSellersOtherItems&userid=heytubeguy&completed=0&sort=3&since=-1&include=0&page=1&rows=25

+others too 73 heytubeguy

1825. Re: ARRL bamboozled by FCC -- BPL Lives, big money talks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-06 23:27:55 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <pvGdnRjMG-AqzdfdRVn-uA@ctc.net>
Source record: 28010

> The power companies know all about the Part 15 rules. They will never
> attempt to prosecute you or harass you via the FCC or Federal Courts.
>
> You WILL find yourself in a LOCAL court room, before a LOCAL judge, and
> a LOCAL District Attorney. You will be prosecuted as a ?Public
> Nuisance" under the same laws used to protect the public from dogs
> running at large, kids who squeel their car tires, and people who leave
> piles of garbage laying about.

Wouldn't it be easy to point at the back of one of the part 15 devices and show the judge where it says the device must not cause any interfearance to licensed devices and must accept any interferance from the licened devices ? Then counter sue the power company for interferance and being a public nuisance to you.

1826. Re: 455 KC oscillator = CB jamming device

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-07 00:07:30 UTC
From: Zombie Wolf <zombie489@tds.net>
Message-ID: <1rednfXslewi-tfdRVn-ug@giganews.com>
Source record: 28013

try taking a look at the ubiquitous 555 timer chip - one could rig the thing so that it would key up a radio upon recieving a carrier that was above a certain level - something like taking the signal from the s-meter and using it for a trigger signal works real well, and ensures that only the local area gets qrmed. naturally, the interval it keys up for is up to the builder, with the 555. Another interesting thing is , that if this is placed real close to the guy's house, very little power will be needed to operate it. a motorcycle battery would last a long time at a 100 milliwatt level..... and if close enough, would give him 20-over s-9. Think i remember someone doing this once, but cant remember just who it was... <G>

"Guy" <kxto@yahoo.com> wrote in message
news:4f21d3b.0403032000.77158e1d@posting.google.com...
> when I lived in Reno, NV there was a person who was not very friendly
> on the radio. He was always getting drunk and once he was full of
> liquid courage, would swear, throw dead carriers, drive the drivers
> and us locals crazy. So a cb/ham operator made a device that was real
> small,,,it was placed in close proximity to his house, within 1/4
> mile. When he would key up on ch-19, it would start a audio carrier
> that was intermittant,,it was like a pulse for 5-7 minutes, he would
> key up again and once again get this pulsating tone, is the best way
> to describe it. Needless to say he cleaned up his act, and started to
> come around. So now I am in willamette valley and have the same
> problem. the person who made that "toy" has passed on,so now I am
> looking to get something of the same concept made. Any ideas? JPT.

1827. Hand soldering QFN package?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-07 01:57:19 UTC
From: Tom Kreyche <tkreyche@well.com>
Message-ID: <3kv2c.193428$uV3.794492@attbi_s51>
Source record: 28014

Has anyone tried hand soldering leads on a QFN package? perhaps dead-bug style using wrap wire? Or?

I have 20 or 32 pin QFN chips I'd like to play with but the tiny size is rather intimidating. I have successfully soldered SSOPs.

thanks, Tom

1828. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-07 02:08:27 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c2e06r$r1d$1@sparta.btinternet.com>
Source record: 28015
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

> For every person who posts a question and/or response there are
> probably a thousand people who read and benefit from the information
> in a thread but never post anything. You may be full up Paul, there
> may also be many more readers who need more information but won't or
> can't ask.
>
> Please, everyone, continue to contribute as long as you can.
============================

Unfortunately, only about 5 percent of the 'information' published on this and other newsgroups is of any use. Much of the remainder is misleading. And the most serious of the problems is most folks' inability to distinguish between wheat and chaff.

Many who are satisfied and immediately say thank you are too hasty, later finding it won't work. Too much of the information falls into the category of old wive's tales. If it sounds OK then it must be right!

The frequency of arguments between 'experts' gives the show away.

But most of you know this anyway. So why do I bother to say so?

Entertainment value is another matter. It stimulates the mind. Hence the group's popularity.

Reg.

1829. Re: One Tube Superhet

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-07 02:52:12 UTC
From: "Geoffrey G. Rochat" <777geoff777@777pkworks777.777com777>
Message-ID: <c2e2moftg1@news.utelfla.com>
Source record: 28016

> I'm interested in identifying the Elementary Electronics Magazine issue
that
> contains the One Tube Superhet project. It is from about 1970. I built
this
> project, back then, and still have the radio but not the magazine. I have
> salvaged a few parts over the years for other projects but bringing it
back to
> it's former glory will be easy. Thank you, doug

The September 1956 "Popular Electronics" had the following article on a
one-tube superhet, the "Minidyne", built around a 6U8:

http://home.gwi.net/~jdebell/pe/PEIntro.htm

1830. 1N414B

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-07 09:47:38 UTC
From: "Prof. Peter Konlechner" <peter.konlechner@aon.at>
Message-ID: <404aefbc$0$18852$91cee783@newsreader02.highway.telekom.at>
Source record: 28017

Thank you all for the qick advise. It seems actually to be a typo, which is contained in the help file of the MixW program.

Regards,
Peter
OE1TKU

1831. Re: Hand soldering QFN package?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-07 14:22:27 UTC
From: maxfoo <maxfooHeadFromButt@punkass.com>
Message-ID: <7ebm40pj288hlu92ici9502o80ece5qhpm@4ax.com>
Source record: 28018

On Sun, 07 Mar 2004 01:57:19 GMT, "Tom Kreyche" <tkreyche@well.com> wrote:

>Has anyone tried hand soldering leads on a QFN package? perhaps dead-bug
>style using wrap wire? Or?
>
>I have 20 or 32 pin QFN chips I'd like to play with but the tiny size is
>rather intimidating. I have successfully soldered SSOPs.
>
>thanks, Tom
>

Best way that works for me is using a hot plate to heat up the pcb to 170C.
then apply a drop of flux on the bottom of the chip, melt solder on the pcb
footprint and place to chip down. capillary action will direct the chip in
place.

Remove "HeadFromButt", before replying by email.

1832. Re: ARRL bamboozled by FCC -- BPL Lives, big money talks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-07 14:23:41 UTC
From: Harv nelson <harv@whatever.net>
Message-ID: <404B306D.4090903@whatever.net>
Source record: 28019

Ralph Mowery wrote:
>>The power companies know all about the Part 15 rules. They will never
>>attempt to prosecute you or harass you via the FCC or Federal Courts.
>>
>>You WILL find yourself in a LOCAL court room, before a LOCAL judge, and
>>a LOCAL District Attorney. You will be prosecuted as a ï¿½Public
>>Nuisance" under the same laws used to protect the public from dogs
>>running at large, kids who squeel their car tires, and people who leave
>>piles of garbage laying about.
>
>
> Wouldn't it be easy to point at the back of one of the part 15 devices and
> show the judge where it says the device must not cause any interfearance to
> licensed devices and must accept any interferance from the licened devices ?
> Then counter sue the power company for interferance and being a public
> nuisance to you.
>
Catch this senario:

You and your lawyer bring the Part 15 device to the show the LOCAL (Municiple) Judge. The power company and there lawyers have assembled 200-300 of their customers in the same courtroom ... pop's and mom's, grandma's,etc. ... all LOCAL voters ... all screaming for your "blood" because have fucked up their internet access ... intentionally!

The Judge knows that his decision will likely be reversed on appeal ... but, ONLY if YOU have the resources to initiate that appeal (It'll start in the 100 Kilobuck range). The Judge also knows that the folks in the courtroom will all vote for HIM in the next election ... and the power company will also make a money contribution to his campaign.

You are living under the mistaken assumption that RIGHT (or "rights") and WRONG have anything at all to do with this situation. Its not about laws and regulations. Or, even physics. Its about MONEY. Its about POLITICS. Its about GRAFT. In short, its not going to be a fair fight.

Bend over!

And BTW ... Just keep telling me how important it is that I vote Republican in the next election (terrorism, abortion, and all that idiotic crap). AND how important it is for prospective hams to learn and love morse code.

Harv, AI9NL

1833. Re: 1N414B

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-07 14:30:22 UTC
From: Chaos Master <wizard_of_yendorIHATESPAM@hotmail.com>
Message-ID: <c2ffgf$1rrq65$2@ID-88878.news.uni-berlin.de>
Source record: 28021

Prof. Peter Konlechner posted in rec.radio.amateur.homebrew , in article <404aefbc$0$18852$91cee783@newsreader02.highway.telekom.at>, at Sun, 7 Mar 2004 10:47:38 +0100:
> Thank you all for the qick advise. It seems actually to be a typo, which is
> contained in the help file of the MixW program.

Does not seem to be a typo, but rather a very old part, as Google gives 16 results of a search for 1N414B.

--
Chaos Masterï¿œ - Porto Alegre, Brazil!
IRC #XLinuxNews or #POA of irc.brasnet.org , nick Wizard_of_Yendor .
Powered by NetHack (www.nethack.org) , Slackware 9.1 (Linux User #327480 - at work)
CygWin, GnuWin32, and so on..

1834. test

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-07 14:33:45 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <dpG2c.52674$TF2.30554@nwrdny02.gnilink.net>
Source record: 28020

[No readable article body recovered]

1835. Re: ARRL bamboozled by FCC -- BPL Lives, big money talks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-07 16:12:59 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <nAH2c.35618$rB4.8090@bignews6.bellsouth.net>
Source record: 28022

Arnold wrote:
> On Sat, 06 Mar 2004 19:15:02 +0000, Ken Scharf stood up and said:
>
>>As for the rest of your comments, I suppose you have made up your mind
>>and have burned your license, framed the ashes, and sold your radio gear
>>to the CB'er next door.
>
>
> I think you missed the point of his post. It is an editorial on the
> state of the hobby and I think it drives home the current attitudes many
> (no all, of course) hams have towards the proposed changes the ARRL are
> supporting. It's really human nature; many people are resistant to
> change for variety of reasons and sometimes it takes a long, hard look
> in the mirror to see how silly this resistance is. The point being, if
> one insists on "living in the past", then their is no future. This
> applies to everything, not just amateur radio.
>
> And I don't think the original poster has burned his license. He's
> probably doing more than you or I to save the hobby by shoving the
> egocentrism that many hams exhibit right back in their face. And for
> the record, I don't think the ARRL went far enough in their
> recommendations. I believe their should only be two licenses: a
> beginners with VHF/UHF access and limited HF access, and a "general"
> license with full privileges and no CW required. Before you (or anybody
> else) flame me for this, note that I do know CW. The only reason I
> learned it was to get HF privileges. I maybe had 3 or 4 QSOs using CW
> but it's not for me. I find other digital modes like PSK31 to be more
> fun. But that's just me.
>
I would almost agree with you on having 'only' two licenses. I still
like the idea of the 'EXTRA CLASS' license as a means of promoting self
improvment. It only offers a very small increase in privileges, several
small slivers of bandwidth allocated for CW (and perhaps keep the extras
phone slivers as well). But do combine the advanced and general class
band segments and open them to everyone without the need to know CW.
The CW band segments should still remain, but call them 'narrow
bandwidth' segments for use ONLY with modes requiring less than say
500hz bandwidth. This would include things like digital, PSK31, and of
course, CW (which could become a digital computer mode no longer
requiring any gray cells to perform the incoding and decoding!).
Re-evaluate how much of each band should be set aside for these narrow
bandwidth segments, perhaps.

There are many hams that love cw (and would use it even if it was NOT required) for things like QRP backpacking (these itty bitty rigs are quite popular, the kits sell like hotcakes). CW IS the ultimate weak signal mode. I do say this with second hand knowledge though, like you I havn't used CW much in years, but I wish could improve on that!
I got my Extra when they lowered the CW requirement to 5 wpm and only the written test stood in my way to get from Advanced to Extra. (The challenge of the written test was something I could handle, and it gave me a chance to bone up on theory I hadn't looked at since college.)

In closing on that, I wouldn't push CW on anybody, but I would hate to see it die out.

1836. Re: ARRL bamboozled by FCC -- BPL Lives, big money talks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-07 16:20:12 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <sHH2c.25867$JN2.17330@bignews4.bellsouth.net>
Source record: 28023

Harv nelson wrote:
> Ralph Mowery wrote:
>
>>> The power companies know all about the Part 15 rules. They will never
>>> attempt to prosecute you or harass you via the FCC or Federal Courts.
>>>
>>> You WILL find yourself in a LOCAL court room, before a LOCAL judge, and
>>> a LOCAL District Attorney. You will be prosecuted as a ï¿½Public
>>> Nuisance" under the same laws used to protect the public from dogs
>>> running at large, kids who squeel their car tires, and people who leave
>>> piles of garbage laying about.
>>
>>
>>
>> Wouldn't it be easy to point at the back of one of the part 15 devices
>> and
>> show the judge where it says the device must not cause any
>> interfearance to
>> licensed devices and must accept any interferance from the licened
>> devices ?
>> Then counter sue the power company for interferance and being a public
>> nuisance to you.
>>
> Catch this senario:
>
> You and your lawyer bring the Part 15 device to the show the LOCAL
> (Municiple) Judge. The power company and there lawyers have assembled
> 200-300 of their customers in the same courtroom ... pop's and mom's,
> grandma's,etc. ... all LOCAL voters ... all screaming for your "blood"
> because have fucked up their internet access ... intentionally!
>
> The Judge knows that his decision will likely be reversed on appeal ...
> but, ONLY if YOU have the resources to initiate that appeal (It'll start
> in the 100 Kilobuck range). The Judge also knows that the folks in the
> courtroom will all vote for HIM in the next election ... and the power
> company will also make a money contribution to his campaign.
>
> You are living under the mistaken assumption that RIGHT (or "rights")
> and WRONG have anything at all to do with this situation. Its not about
> laws and regulations. Or, even physics. Its about MONEY. Its about
> POLITICS. Its about GRAFT. In short, its not going to be a fair fight.
>
> Bend over!
Perhaps. But it WILL only take ONE FEDERAL judge to turn it around then

no futher LOCAl judge will prevail. And maybe the ARRL will send one of
their lawyers down pro-bono to see that this happens.
>
> And BTW ... Just keep telling me how important it is that I vote
> Republican in the next election (terrorism, abortion, and all that
> idiotic crap). AND how important it is for prospective hams to learn
> and love morse code.
>
You have made a VERY good case for all of us NOT to vote Republican.
And BTW GWB CAN'T be RE-Elected, since he WASN'T elected in the first
place. He was CROWNED by the best supreme court money could buy.

> Harv, AI9NL

1837. Re: ARRL bamboozled by FCC -- BPL Lives, big money talks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-07 19:05:27 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <xd-dnWoSWJop-dbd4p2dnA@ctc.net>
Source record: 28024

> >
> You have made a VERY good case for all of us NOT to vote Republican.
> And BTW GWB CAN'T be RE-Elected, since he WASN'T elected in the first
> place. He was CROWNED by the best supreme court money could buy.
>
>
It does not seem to make any differance which party is in. I usually vote for someone that has never been . If you ask the 5000 people out of work in the town I live in whose cotton mill closed who they should have voted for I bet they would have said Ross Perot but it is too late now. I don't even know who or what the platform was in the last presidential election but I voted for the third party, same as the ones before that.
You are right, the judges are not elected.

1838. Re: Wanted: bandpass filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-07 20:37:35 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c2g16f$pp5$1@hercules.btinternet.com>
Source record: 28025
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

> The BBC: Licensed at public expense to spread lies.

==========

And long may they be licensed at public expense.

But they sound more like the VOA than the VOA.

1839. Kemet mil-spec cap ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-07 20:57:07 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <D0M2c.605$Ss6.161653776@newssvr11.news.prodigy.com>
Source record: 28026
Cross-posted to: sci.electronics.components,rec.radio.amateur.homebrew,sci.electronics.repair

At a hamfest I picked up a bunch of what I think are axial lead tubular metal case tantalum capacitors by Kemet. Case size B and C. I'm going to call Kemet tomorrow but in the mean time I wonder if anyone can decipher the code the capacitance and voltage.
+M 39003 01-2035 7440MB 31433 JM, it measures 70 microfarads
+M390003 01-2021 7452MD 31433 MW , it measures 17 microfards
M390003 01-K 2017 7426MA 31433 JA, it measures 33 microfarads

From the Kemet website I know that M390003 is mil-spec and the 31433 is the source code whatever that means. I think the last two letters are the date code but the 01-XXX and XXMX escape me but I'd guess it's the stuff I want to know! Any help appreciated.

73
Hank WD5JFR

1840. transverter 2m - 70cm (pmr)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-07 23:15:15 UTC
From: sipa <sipa@hrtv.net>
Message-ID: <c2gaff$6if$1@ls219.htnet.hr>
Source record: 28027

hi all

i nead project for transverter 2m to PMR (70cm...466MHz)

thanx

1841. Re: transverter 2m - 70cm (pmr)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-07 23:16:15 UTC
From: sipa <sipa@hrtv.net>
Message-ID: <c2gahc$6je$1@ls219.htnet.hr>
Source record: 28028

easiest to made....

i dont need high power output.... 500 mW will be fine....

1842. Re: ARRL bamboozled by FCC -- BPL Lives, big money talks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 03:28:41 UTC
From: R J Carpenter <rcarpen@erols.com>
Message-ID: <404be819$0$3094$61fed72c@news.rcn.com>
Source record: 28029

> Perhaps. But it WILL only take ONE FEDERAL judge to turn it around then
> no futher LOCAl judge will prevail. And maybe the ARRL will send one of
> their lawyers down pro-bono to see that this happens.

"One of their lawyers"?????

The only ARRL lawyer I know of is Chris Imlay, and he has quite a few other clients as well. Perhaps they would hire a lawyer for you, but I wouldn't count on it.

1843. Using a power mosfet to select from various power sources for HF rig

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 06:33:12 UTC
From: James W <change-to-jw22-at-trlp-dot-com@trlp.com>
Message-ID: <104o4t8ocjc9116@corp.supernews.com>
Source record: 28030

Anything I should be concerned about with my plans to use a power mosfet to choose amongst various 14V sources to power an IC706. This is for automotive use. I want to use my deep cycle batteries while the engine is off, and use the engine/battery/alternator while the engine is running. Thought I'd use a couple of big mosfets to select one or the other.

thoughts?

- jim

1844. Re: Using a power mosfet to select from various power sources for HF rig

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 11:13:21 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <lzY2c.115794$A12.6490@edtnps84>
Source record: 28031

Tried it. Save yourself some grief and use relays ;-)

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

1845. Re: designing a 1240-1300MHz VCO

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 12:22:52 UTC
From: St&#65533;phane Rey <sre_prolem@yahoo.com>
Message-ID: <c2hosgbag1@rex.ip-plus.net>
Source record: 28032

I've seen a description of a VCO able to cover from 1100 to 1315 MHz using
the MAX2754. The datasheet gives 1300MHz as maximum frequency.

I've ordered one and will test it.

Stephane

"St&#65533;phane Rey" <sre_prolem@yahoo.com> wrote in message
news:c2a4koht1@rex.ip-plus.net...
> I've already designed some VCO but at lower frequencies.
> This will be my first design above 1GHz.
>
> This VCO will be the base for a 1240-1300MHz Narrow Band FM transceiver.
I'm
> going to include it in a PLL system based on the LMX2326 National
> Semiconductor PLL chip.
>
> Concerning DDS, I'm designing an hybrid DDS/PLL for 144MHz. In fact it
> should be usable for any frequency.
> I would like to design a SSB transceiver. Once again, I've never tried SSB
> demodulation above HF bands
>
> Ham-radio is experimentation so... I will experiment.
>
> Thanks for your comments Richard
>
> Best regards
> Stephane
>
> "Richard Hosking" <richardh@iinet.net.au> wrote in message
> news:40487bdc$0$22519$5a62ac22@freenews.iinet.net.au...
> > Sure - the whole thing would cost several hundred Euros I would guess.
> > Phase noise would not be ideal as the VCO is covering 500 MHz when you
> > only need 70 MHz
> > Still, I suspect VCO design even for a narrow bandwidth is not for the
> > fainthearted....
> >
> > Richard
> >
> > St&#65533;phane Rey wrote:
> > > Richard,
> > >
> > > I had the idea, but minicircuits ROSxxxx are quite expensive here in
> France.

> > > more than 40 euros each.
> > > I've found a schematic for a VCO covering 1050 to 1350 MHz, quite
> simple,
> > > without PCB coils. Cost should be less than 2 or 3 euros.
> > > I'll try to design something upon this base.
> > >
> > > Stephane
> > >
> > > "Richard Hosking" <richardh@iinet.net.au> wrote in message
> > > news:40482146$0$22519$5a62ac22@freenews.iinet.net.au...
> > >
> > >>Stephane
> > >>
> > >>If you get QEX, the latest issue has a DDS/PLL board that might suit
you
> > >>Alternatively, see http://www.qsl.net/ke5fx/synth.html
> > >>for details
> > >>Instead of the Minicircuits ROS 2100VW specified, use a ROS 1410 or
ROS
> > >>1500. Are far as I am aware, they are pin compatible. You would need
to
> > >>make some adjustments to the loop filter values and supply volts etc.
> > >>
> > >>Richard
> > >>VK6BRO
> > >>
> > >>
> > >>St�phane Rey wrote:
> > >>
> > >>>Hello everybody,
> > >>>
> > >>>I would like to design a VCO able to cover from 1240 and up to 1300
MHz
> > >
> > > in a
> > >
> > >>>PLL system.
> > >>>This will be part of the 23cm transceiver project.
> > >>>
> > >>>I've seen that Maxim has the MAX2754, intended for 1.2GHz operation.
> The
> > >>>datasheet shows it can reach 1300MHz.
> > >>>Has anybody experienced this component in PLL at such frequencies ?
> > >>>
> > >>>
> > >>>Otherwise, do you have some schematic examples to suggest with
> > >
> > > transistor
> > >

> > >>>but without PCB coils
> > >>>
> > >>>Regards
> > >>>
> > >>>Stephane, F1TJJ
> > >>>
> > >>>
> > >>
> > >
> > >
> >
>
>

1846. Re: Using a power mosfet to select from various power sources for HF rig

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 15:33:22 UTC
From: James W <change-to-jw22-at-trlp-dot-com@trlp.com>
Message-ID: <104p4i2cerit413@corp.supernews.com>
Source record: 28033

Care to expand a bit on this?

Gregg wrote:
> Tried it. Save yourself some grief and use relays ;-)
>

1847. QST article

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 17:02:21 UTC
From: paulonjorge@yahoo.com
Message-ID: <f390737.0403080902.2821ace4@posting.google.com>
Source record: 28034

Hi...
I'm looking for Wes Hayward's article "A unified approach to the design of crystal ladder filters" which appeared in QST May 1982 p.21-27.

Big thanks in advance

1848. Increasing range of rf remote

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 17:15:16 UTC
From: fisher_keith@hotmail.com
Message-ID: <9fcc53a0.0403080915.3efb03ca@posting.google.com>
Source record: 28035
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Hello,
(Disclaimer - I am a novice electronics buff - just a few small projects)
I have a small keychain remote used for advancing powerpoint slides. It has an integrated laser pointer that is very useful in presenting which is why I really want to get this to work.The remote is stated to be 433 mhz. The reciever is a small box about the size of a pack of cards.
Right now it has a range of about 40 feet (the product spec says 100')
I think it may have to do with the enviroment. We use it in a church and there are several wierless mics ect.
I opened the recever and inside was a stiff wire antena bent into a square about 1.5 inchs per side. It is soldered onto the board.
So I am wondering how I can increase the range of the transmitter/recever. Can I just solder a longer antena? If possible I would like it to be somewhat omni directinal. The product spec says it is (is that why the square ant and not a long skinny one???)
Also while looking online I see places that sell 433 mhz ant's for about 15$- They are made (I think) for handheld walki-talkies(??) would somthing like this help me.

Any help would be much appreciated!
Thanx!
Keith

1849. Re: QST article

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 17:17:58 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <aV13c.35850$YN5.30955@nwrdny03.gnilink.net>
Source record: 28036

It's here:

http://www.cqham.ru/arc.htm

You'll need the DjVu viewer plug-in to view it. You can download it from the same site.

Joe
W3JDR

"Paulo Bauer Jorge" <paulonjorge@yahoo.com> wrote in message news:f390737.0403080902.2821ace4@posting.google.com...
> Hi...
> I'm looking for Wes Hayward's article "A unified approach to the
> design of crystal ladder filters" which appeared in QST May 1982
> p.21-27.
>
> Big thanks in advance

1850. Re: Kemet mil-spec cap ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 17:55:16 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <8s23c.1041$P71.235774073@newssvr11.news.prodigy.com>
Source record: 28037
Cross-posted to: sci.electronics.components,rec.radio.amateur.homebrew,sci.electronics.repair

After several calls to the factory I was able to find someone who had a book on the codes. Here's what he gave me when he figured out what number was important.
2116 = 1uF @ 50V
2064 = 6.8uF @ 35V
2139 = 18uF @ 50V
2031 = 22 uF @ 15V
2017 = 33uF @ 10V
2004-J = 47uF @ 6V
2035 = 68uF @ 15V
2021 = 100uF @ 10V
I've measured several on two different capacitor meters and all read close to what the factory told me. I wonder why they coded the values with numbers that don't make any sense? Military intellligence?
73
Hank WD5JFR

"Henry Kolesnik" <kolesnik@sbcglobal.net> wrote in message news:D0M2c.605$Ss6.161653776@newssvr11.news.prodigy.com...
> At a hamfest I picked up a bunch of what I think are axial lead tubular
> metal case tantalum capacitors by Kemet. Case size B and C. I'm going to
> call Kemet tomorrow but in the mean time I wonder if anyone can decipher the
> code the capacitance and voltage.
> +M 39003 01-2035 7440MB 31433 JM, it measures 70 microfarads
> +M390003 01-2021 7452MD 31433 MW , it measures 17 microfards
> M390003 01-K 2017 7426MA 31433 JA, it measures 33 microfarads
>
> From the Kemet website I know that M390003 is mil-spec and the 31433 is the
> source code whatever that means. I think the last two letters are the date
> code but the 01-XXX and XXMX escape me but I'd guess it's the stuff I want
> to know! Any help appreciated.
>
> 73
> Hank WD5JFR
>
>

1851. Re: QST article

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 18:01:36 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c2ice0$f6u$1@freenet9.carleton.ca>
Source record: 28038

Paulo Bauer Jorge (paulonjorge@yahoo.com) writes:
> Hi...
> I'm looking for Wes Hayward's article "A unified approach to the
> design of crystal ladder filters" which appeared in QST May 1982
> p.21-27.
>
> Big thanks in advance

You may be able to get the issue from QST, provided they still ahve copies, for a small fee. And unless they stopped the practice, if they no longer had the back issue they would photocopy the desired article for a small fee.

You can buy QST on a CDROM, and get 5 or 10 years of other articles at the same time.

The article, along with a second, July 1987, article from the same author on the topic, and Doug DeMaw's January 1990 about building a tester for measuring the crystals for such filters, were reprinted in the back of "W1FB's Design Notebook".

And surely the same ground, if not the exact same material, is covered in the relatively recent book from the ARRL, "Experimental Methods in RF Design". Its authors include Wes Hayward.

Michael VE2BVW

1852. Question about toroid vs. air core coil.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 18:57:42 UTC
From: J Shrum <shrumj@madisontelco.com>
Message-ID: <VoudnZ0YU62AX9HdRVn-iQ@shawneelink.net>
Source record: 28039

Greetings,
As a newbie to RF building, I have noticed that some instructions tell you how to wind the coil, and they give you the value of the coild as well...

In my scenario, the inductor in question is a .72uhy which the directions state to use 17 turns of #30 around a toroid. I don't have the requested toroid, so I was just going to wind a .72uhy inductor around a 1/2W 5M ohm resistor.

This will just the same right? Whether its a .72 on a toroid, or a .72 on a resistor... they are both the same, correct?

Thanks for your help.
James Shrum - KC9FFX

1853. Re: Question about toroid vs. air core coil.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 19:07:08 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <104ph2sae78dna4@corp.supernews.com>
Source record: 28040

"J Shrum" <shrumj@madisontelco.com> wrote in message
news:VoudnZ0YU62AX9HdRVn-iQ@shawneelink.net...
> Greetings,
> As a newbie to RF building, I have noticed that some instructions tell you
> how to wind the coil, and they give you the value of the coild as well...
>
> In my scenario, the inductor in question is a .72uhy which the directions
> state to use 17 turns of #30 around a toroid. I don't have the requested
> toroid, so I was just going to wind a .72uhy inductor around a 1/2W 5M ohm
> resistor.
>
> This will just the same right? Whether its a .72 on a toroid, or a .72 on
a
> resistor... they are both the same, correct?
>
> Thanks for your help.
> James Shrum - KC9FFX
>
>

There will be differences in the coil Q and sheilding (toroids are
self-shielding and often have better Q than air-wound). I don't have the
vaguest notion of what your circuit is, but you can probably get away with
it, at least until you've ordered the right coil form.

1854. Re: Question about toroid vs. air core coil.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 19:12:58 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c2igjqnqh1@freenet9.carleton.ca>
Source record: 28041

"J Shrum" (shrumj@madisontelco.com) writes:
> Greetings,
> As a newbie to RF building, I have noticed that some instructions tell you
> how to wind the coil, and they give you the value of the coild as well...
>
> In my scenario, the inductor in question is a .72uhy which the directions
> state to use 17 turns of #30 around a toroid. I don't have the requested
> toroid, so I was just going to wind a .72uhy inductor around a 1/2W 5M ohm
> resistor.
>
> This will just the same right? Whether its a .72 on a toroid, or a .72 on a
> resistor... they are both the same, correct?
>
Well maybe not. They'd be the same inductance, but other factors come into
play.

What's the application? In various wideband applications, a core material
is specified to give it broadband response.

There might be a specific reason for using a toroid, because of it's
self-shielding qualities. If you're building in a small space, it may
be counting on that self-shielding.

Michael VE2BVW

1855. What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 19:51:26 UTC
From: Dennis <"Howdy Doody"@howdydoody.net>
Message-ID: <104pjm15vbh3ca1@corp.supernews.com>
Source record: 28042

Serious question. What does "73" mean?

I have a stack of "73"mags. I'm not a ham however.
If I was, I of course would know.

Anybody? I know it's a stupid question, but I don't know.

TIA,

Dennis

1856. Re: Increasing range of rf remote

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 20:22:18 UTC
From: Luhan Monat <fakemeout@nowhere.xyz>
Message-ID: <3C43c.932$uh.753@fed1read02>
Source record: 28043
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Keith.fisher wrote:

> Hello,
> (Disclaimer - I am a novice electronics buff - just a few small
> projects)
> I have a small keychain remote used for advancing powerpoint slides.
> It has an integrated laser pointer that is very useful in presenting
> which is why I really want to get this to work.The remote is stated to
> be 433 mhz. The reciever is a small box about the size of a pack of
> cards.
> Right now it has a range of about 40 feet (the product spec says 100')
> I think it may have to do with the enviroment. We use it in a church
> and there are several wierless mics ect.
> I opened the recever and inside was a stiff wire antena bent into a
> square about 1.5 inchs per side. It is soldered onto the board.
> So I am wondering how I can increase the range of the
> transmitter/recever. Can I just solder a longer antena? If possible I
> would like it to be somewhat omni directinal. The product spec says it
> is (is that why the square ant and not a long skinny one???)
> Also while looking online I see places that sell 433 mhz ant's for
> about 15$- They are made (I think) for handheld walki-talkies(??)
> would somthing like this help me.
>
> Any help would be much appreciated!
> Thanx!
> Keith

Keith,

You may be better off putting a better antenna at the receiver end. The optimum would be a 1/4 wavelength. Hey, anybody out there remember the damn equation for this... 300,000 meters per second devided by something-or-other???

--
Luhan Monat: Luhan Knows at Yahoo dot Com
"The Future is not what it used to be."

1857. Re: Increasing range of rf remote

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 20:41:32 UTC
From: mikea@mikea.ath.cx
Message-ID: <c2ilps$o6m$1@puck.litech.org>
Source record: 28044
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

In <3C43c.932$uh.753@fed1read02> (rec.radio.amateur.homebrew), Luhan Monat wrote:
> Keith.fisher wrote:

> > Hello,
> > (Disclaimer - I am a novice electronics buff - just a few small
> > projects)
> > I have a small keychain remote used for advancing powerpoint slides.
> > It has an integrated laser pointer that is very useful in presenting
> > which is why I really want to get this to work.The remote is stated to
> > be 433 mhz. The reciever is a small box about the size of a pack of
> > cards.

[snip]

> You may be better off putting a better antenna at the receiver end. The
> optimum would be a 1/4 wavelength. Hey, anybody out there remember the
> damn equation for this... 300,000 meters per second devided by
> something-or-other???

A wavelength of 1 meter is a frequency of 300 MHz.

So 433 MHz will have a wavelength of (300/433) meters, or 9/13 meters.

A 1/4-wave antenna would be (1/4)*(9/13) meters long, which is 9/52
meters long -- which is just a teeny bit longer than 9/54 meters,
and that's 1/6 of a meter, or (1/6)* 39.37 inches, or just a smidgen
over 6.5 inches long -- and all that assumes I did the arithmetic
right. Since I'm a math jock, there's no guarantee I did, so check it
yourselves.

I just fired up the 4-banger calculator, and it tells me that the
1/4-wave antenna should be 6.819+ inches long, so 6.5 is a good
ballpark figure.

--
If anyone tells me to work smarter, not harder, I will kick him or her,
hard, in a random body part. I will then kick him or her a second time,
"smarter, not harder," which is to say that on the second strike, I'll
use the same force, but target more carefully. - Catherine, in a.s.r

1858. Re: Increasing range of rf remote

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 20:52:10 UTC
From: John Woodgate <jmw@jmwa.demon.contraspam.yuk>
Message-ID: <O$Ym5tD6zNTAFwQ4@jmwa.demon.co.uk>
Source record: 28045
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

I read in sci.electronics.design that Mike Andrews <mikea@mikea.ath.cx>
wrote (in <c2ilps$o6m$1@puck.litech.org>) about 'Increasing range of rf
remote', on Mon, 8 Mar 2004:
>If anyone tells me to work smarter, not harder, I will kick him or her,
>hard, in a random body part. I will then kick him or her a second time,
>"smarter, not harder," which is to say that on the second strike, I'll
>use the same force, but target more carefully. - Catherine, in a.s.r

Well, Catherine is misguided. People obviously want to minimise their
effort while preserving the quality and timing of the results.
--
Regards, John Woodgate, OOO - Own Opinions Only.
The good news is that nothing is compulsory.
The bad news is that everything is prohibited.
http://www.jmwa.demon.co.uk Also see http://www.isce.org.uk

1859. Re: Question about toroid vs. air core coil.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 21:00:30 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <O953c.1096$5K4.250469437@newssvr11.news.prodigy.com>
Source record: 28046

Depending on the app you might luck out but I doubt it. Order the toroid
but while you're waiting you might try increasing the number of turns.
Experiment and improvise, that makes the hooby more intersting. Also try to
read up on air inductiors and those on toriods, I assume it;s ferrite.
73
Hank WD5JFR
"J Shrum" <shrumj@madisontelco.com> wrote in message
news:VoudnZ0YU62AX9HdRVn-iQ@shawneelink.net...
> Greetings,
> As a newbie to RF building, I have noticed that some instructions tell you
> how to wind the coil, and they give you the value of the coild as well...
>
> In my scenario, the inductor in question is a .72uhy which the directions
> state to use 17 turns of #30 around a toroid. I don't have the requested
> toroid, so I was just going to wind a .72uhy inductor around a 1/2W 5M ohm
> resistor.
>
> This will just the same right? Whether its a .72 on a toroid, or a .72 on
a
> resistor... they are both the same, correct?
>
> Thanks for your help.
> James Shrum - KC9FFX
>
>

1860. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 21:25:28 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <v3pp40h1ki0fpa2secnp0l9pk8dliu6nvo@4ax.com>
Source record: 27947

On Mon, 08 Mar 2004 13:51:26 -0600, Dennis <Howdy
Doody@howdydoody.net> wrote:

>Serious question. What does "73" mean?
>
>I have a stack of "73"mags. I'm not a ham however.
>If I was, I of course would know.

"Best wishes" or something of that nature.
--

The BBC: Licensed at public expense to spread lies.

1861. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 21:29:35 UTC
From: Dennis <"Howdy Doody"@howdydoody.net>
Message-ID: <104ppe243m3nh0c@corp.supernews.com>
Source record: 27948

In article <v3pp40h1ki0fpa2secnp0l9pk8dliu6nvo@4ax.com>,
pb@osiris1.notthisbit.co.uk says...
>
>
>On Mon, 08 Mar 2004 13:51:26 -0600, Dennis <Howdy
>Doody@howdydoody.net> wrote:
>
>>Serious question. What does "73" mean?
>>
>>I have a stack of "73"mags. I'm not a ham however.
>>If I was, I of course would know.
>
>"Best wishes" or something of that nature.
>--
>
>The BBC: Licensed at public expense to spread lies.

Yes, but why "73", why not "74", or even "69".

-Dennis

1862. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 21:33:59 UTC
From: mikea@mikea.ath.cx
Message-ID: <c2ios7pld1@puck.litech.org>
Source record: 27949

Dennis <Howdy Doody@howdydoody.net> wrote:
> In article <v3pp40h1ki0fpa2secnp0l9pk8dliu6nvo@4ax.com>,
> pb@osiris1.notthisbit.co.uk says...
> >
> >
> >On Mon, 08 Mar 2004 13:51:26 -0600, Dennis <Howdy
> >Doody@howdydoody.net> wrote:

> >>Serious question. What does "73" mean?

> >>I have a stack of "73"mags. I'm not a ham however.
> >>If I was, I of course would know.

> >"Best wishes" or something of that nature.

> Yes, but why "73", why not "74", or even "69".

The American Radio Relay League published, some years back, a list of frequently-used expressions. These were numbered, so that "Best Regards; Love and Kisses" could be encoded as "73;88".

"Best Regards" (or whatever it is) just happened to be number 73 in the list.

--
VBScript is designed to be a secure programming environment. It lacks various commands that can be potentially damaging if used in a malicious manner. This added security is critical in enterprise solutions. -- support.microsoft.com

1863. Re: Kemet mil-spec cap ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 21:44:10 UTC
From: Al <no.spam@here.com>
Message-ID: <no.spam-65AEF9.16441208032004@news.verizon.net>
Source record: 27950
Cross-posted to: sci.electronics.components,rec.radio.amateur.homebrew,sci.electronics.repair

In article <8s23c.1041$P71.235774073@newssvr11.news.prodigy.com>,
"Henry Kolesnik" <kolesnik@sbcglobal.net> wrote:

> After several calls to the factory I was able to find someone who had a book
> on the codes. Here's what he gave me when he figured out what number was
> important.
> 2116 = 1uF @ 50V
> 2064 = 6.8uF @ 35V
> 2139 = 18uF @ 50V
> 2031 = 22 uF @ 15V
> 2017 = 33uF @ 10V
> 2004-J = 47uF @ 6V
> 2035 = 68uF @ 15V
> 2021 = 100uF @ 10V
> I've measured several on two different capacitor meters and all read close
> to what the factory told me. I wonder why they coded the values with
> numbers that don't make any sense? Military intellligence?
> 73
> Hank WD5JFR

The numbers, like 2116, are just sequencial numbers on a very large
table that covers many pages in a manual. The numbers make sense
when you have the manual.

Al

--
There's never enough time to do it right the first time.......

1864. Re: Question about toroid vs. air core coil.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 21:46:58 UTC
From: J Shrum <shrumj@madisontelco.com>
Message-ID: <D-idnb1l95ZUdNHdRVn-vw@shawneelink.net>
Source record: 27951

I am trying to make the Micronaut. I have put it together manhattan style (which I find soooo much easier). I have tried using the air core and a toroid I had...
The trouble is at this point, is the thing won't oscillate. The only substitues I made was, instead of a 2n2222, i used a 2n3904... I also had to use 220pF caps instead of 270pF's for C1,C2 and C3.

I have checked w/ a freq counter, and I see no oscillation coming of of any test points.

Has anyone made this?
http://imagenisp.ca/jsm/Tuna.html

Thanks in advance.

"J Shrum" <shrumj@madisontelco.com> wrote in message
news:VoudnZ0YU62AX9HdRVn-iQ@shawneelink.net...
> Greetings,
> As a newbie to RF building, I have noticed that some instructions tell you
> how to wind the coil, and they give you the value of the coild as well...
>
> In my scenario, the inductor in question is a .72uhy which the directions
> state to use 17 turns of #30 around a toroid. I don't have the requested
> toroid, so I was just going to wind a .72uhy inductor around a 1/2W 5M ohm
> resistor.
>
> This will just the same right? Whether its a .72 on a toroid, or a .72 on
a
> resistor... they are both the same, correct?
>
> Thanks for your help.
> James Shrum - KC9FFX
>
>

1865. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 21:56:09 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c2iq9b$90v$1@newshost.mot.com>
Source record: 27952

BEST REGARDS

"Dennis" <Howdy Doody@howdydoody.net> wrote in message
news:104pjm15vbh3ca1@corp.supernews.com...
> Serious question. What does "73" mean?
> Dennis

In olden days when sending messages via Morse code (CW) there were many messages that were the same. There were many greetings and endings which were also the same. It saved time to have a standard list of message numbers and just send the numbers.

88 = Love and Kisses

There are all kinds such as "I'm OK. Arrived safely" and the like. I have a list @home. arrl.org probably has the whole list on their web pages somewhere.

I don't know what 74 is, but my dad (W9EHS) always said "74, one better than anybody else".
--
73, Steve N, K,9;d, c. i My email has no u's.

1866. Device identification

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 22:24:16 UTC
From: whru@msn.com
Message-ID: <e52bdeaf.0403081424.be32e5a@posting.google.com>
Source record: 27953

Hi all,
is there a crossreference list for transistors such as C2827, C3405,
D553, D844 etc. I tried GOOGLE in various ways but got no positive
results.
Thanks
73
Fred
wb6iiq

1867. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 22:56:22 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403081456.4ac7d7dd@posting.google.com>
Source record: 27954

Commonly used at the end of conversations between hams, roughly equivalent to "best regards." Or more informally like "Aloha" or "Caio." Abbreviations like that grew out of the desire to shorten commonly sent words and phrases when using Morse or International Code.

Cheers,
Tom

Dennis <Howdy Doody@howdydoody.net> wrote in message news:<104pjm15vbh3ca1@corp.supernews.com>...
> Serious question. What does "73" mean?
>
> I have a stack of "73"mags. I'm not a ham however.
> If I was, I of course would know.
>
> Anybody? I know it's a stupid question, but I don't know.
>
> TIA,
>
> Dennis

1868. Re: Question about toroid vs. air core coil.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 23:07:39 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <104pv5ta4cav6c0@corp.supernews.com>
Source record: 27955

"J Shrum" <shrumj@madisontelco.com> wrote in message
news:D-idnb1I95ZUdNHdRVn-vw@shawneelink.net...
> I am trying to make the Micronaut. I have put it together manhattan style
> (which I find soooo much easier). I have tried using the air core and a
> toroid I had...
> The trouble is at this point, is the thing won't oscillate. The only
> substitues I made was, instead of a 2n2222, i used a 2n3904... I also had
to
> use 220pF caps instead of 270pF's for C1,C2 and C3.
>
> I have checked w/ a freq counter, and I see no oscillation coming of of
any
> test points.
>
> Has anyone made this?
> http://imagenisp.ca/jsm/Tuna.html
>
> Thanks in advance.
>
> "J Shrum" <shrumj@madisontelco.com> wrote in message
> news:VoudnZ0YU62AX9HdRVn-iQ@shawneelink.net...
> > Greetings,
> > As a newbie to RF building, I have noticed that some instructions tell
you
> > how to wind the coil, and they give you the value of the coild as
well...
> >
> > In my scenario, the inductor in question is a .72uhy which the
directions
> > state to use 17 turns of #30 around a toroid. I don't have the requested
> > toroid, so I was just going to wind a .72uhy inductor around a 1/2W 5M
ohm
> > resistor.
> >
> > This will just the same right? Whether its a .72 on a toroid, or a .72
on
> a
> > resistor... they are both the same, correct?
> >
> > Thanks for your help.
> > James Shrum - KC9FFX
> >
> >
>

>

Oh boy. When circuits get that small they cease being "simple" and start getting "subtle". Every componant value makes a difference. That having been said an air-wound inductor should be OK in that circuit, because that filter isn't very high Q to start with, so a Q=50 coil won't be that different from a Q=75 coil.

In order for that circuit to oscillate the load at the crystal frequency needs to look like an inductor in parallel with a not-too-small resistance. I have _not_ run the numbers on the circuit with the values given or with your values, but decreasing the capacitance at C2 and C3 _will_ increase the amount of power that the antenna is trying to take from your oscillator, which may cause it not to start. This may be your problem.

I'd start by trying 270pF caps, or putting 47pF caps in parallel with the 220s. If that doesn't do the trick start looking for a garden-variety wiring error (I've spent days in fruitless theoretical analysis because of a cold solder joint -- it ain't fun).

Good luck.

Tim Wescott, KG7LI
Wescott Design Services
http://www.wescottdesign.com

1869. Re: Question about toroid vs. air core coil.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 23:14:43 UTC
From: J Shrum <shrumj@madisontelco.com>
Message-ID: <UradnW2tjOPHY9HdRVn-uQ@shawneelink.net>
Source record: 27956

Nevermind... I figured it out.

I did the stoopidest thing I could imagine. I wound the coils for the
20meter band, and I had a 40 meter crystal in it. :)

I must say, this little toy sings! I can't even believe how great it sounds
for having 1 transistor and a couple caps.

Thanks again folks.

DE KC9FFX
"J Shrum" <shrumj@madisontelco.com> wrote in message
news:D-idnb1I95ZUdNHdRVn-vw@shawneelink.net...
> I am trying to make the Micronaut. I have put it together manhattan style
> (which I find soooo much easier). I have tried using the air core and a
> toroid I had...
> The trouble is at this point, is the thing won't oscillate. The only
> substitues I made was, instead of a 2n2222, i used a 2n3904... I also had
to
> use 220pF caps instead of 270pF's for C1,C2 and C3.
>
> I have checked w/ a freq counter, and I see no oscillation coming of of
any
> test points.
>
> Has anyone made this?
> http://imagenisp.ca/jsm/Tuna.html
>
> Thanks in advance.
>
> "J Shrum" <shrumj@madisontelco.com> wrote in message
> news:VoudnZ0YU62AX9HdRVn-iQ@shawneelink.net...
> > Greetings,
> > As a newbie to RF building, I have noticed that some instructions tell
you
> > how to wind the coil, and they give you the value of the coild as
well...
> >
> > In my scenario, the inductor in question is a .72uhy which the
directions
> > state to use 17 turns of #30 around a toroid. I don't have the requested
> > toroid, so I was just going to wind a .72uhy inductor around a 1/2W 5M
ohm
> > resistor.
> >

> > This will just the same right? Whether its a .72 on a toroid, or a .72
on
> a
> > resistor... they are both the same, correct?
> >
> > Thanks for your help.
> > James Shrum - KC9FFX
> >
> >
>
>

1870. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 23:15:25 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <104pvkib5am3d52@corp.supernews.com>
Source record: 27957

As others have mentioned, 73 means "best regards" in hamspeak.

It comes from the days of the telegraph, when a group of numbers were used as a sort of shorthand for common phrases and functions. The number 73 meant that the signature immediately followed, sort of like:

73,
Roy Lewallen, W7EL

A lot of hams like to say "73's" which of course means "best regardses", an endearing and Gollum-like affectation. These are, I suspect, the same general group that go to ATM machines, use TTL logic, and watch LCD displays. . .

1871. Re: Question about toroid vs. air core coil.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 23:21:48 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403081521.3cb5b238@posting.google.com>
Source record: 27958

As others have noted, it probably won't be quite the same, but may work. But from the numbers you gave, I guess the specified core must be a T-20-2, no? Whatever the core, you should be able to get an estimate of the Q that the toroid form will give you (for example, see http://www.amidoncorp.com/aai_ironpowdercores.htm), and you can make an estimate of the Q you'll get at the same freq with an air-wound coil, just to be sure you're in the ballpark. For coils about as long as their diameter, the Q is roughly 100*(diam,inches)*sqrt(f,MHz) There are air-core coil programs around that will estimate the Q more accurately, and the self-resonant frequency as well...Reg Edwards has one, for example. -- If I guessed right on the toroid core, you'd probably see a Q around 120-140 in the 5-10MHz region for your coil, and you'd have to use an air core coil roughly half an inch diameter to get that. (My coil program tells me that 11 turns of #22AWG 3/8" ID and a bit under 1/2" long will give you the inductance you want, at a Qu of about 150.)

Cheers,
Tom

"J Shrum" <shrumj@madisontelco.com> wrote in message news:<VoudnZ0YU62AX9HdRVn-iQ@shawneelink.net>...
> Greetings,
> As a newbie to RF building, I have noticed that some instructions tell you
> how to wind the coil, and they give you the value of the coild as well...
>
> In my scenario, the inductor in question is a .72uhy which the directions
> state to use 17 turns of #30 around a toroid. I don't have the requested
> toroid, so I was just going to wind a .72uhy inductor around a 1/2W 5M ohm
> resistor.
>
> This will just the same right? Whether its a .72 on a toroid, or a .72 on a
> resistor... they are both the same, correct?
>
> Thanks for your help.
> James Shrum - KC9FFX

1872. Re: Device identification

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 23:40:55 UTC
From: Allodoxaphobia <bit-bucket@config.com>
Message-ID: <slrnc4q147.2i5p.bit-bucket@localhost.config.com>
Source record: 27960

On 8 Mar 2004 14:24:16 -0800, Fred hath writ:
> Hi all,
> is there a crossreference list for transistors such as C2827, C3405,
> D553, D844 etc. I tried GOOGLE in various ways but got no positive
> results.

All those xistors are "2S"-yaa-daa-yaa-daa-yaa-daa.
The Japanese for nomenclature each of those above
then:
2SC2827,
2SC3405,
2SD553,
2SD844
2Setc. :-)

Now you're better prepared to try cross-reference(s).

HTH es 73
Jonesy
--
| Marvin L Jones | jonz | W3DHJ | OS/2
| Gunnison, Colorado | @ | Jonesy | linux __
| 7,703' -- 2,345m | config.com | DM68mn SK

1873. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 23:42:03 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <fl0q409et9ocdj1qpoha0l6ergnv71amhg@4ax.com>
Source record: 27959

On Mon, 08 Mar 2004 15:29:35 -0600, Dennis <Howdy
Doody@howdydoody.net> wrote:

> Yes, but why "73", why not "74", or even "69".

When keyed in Morse code it has a certain characterstic 'ring' to it
that few other two-number combinations do. Another one is "VA"
(message ends). Keen CWers will no doubt be able to think of a few
more that fall into that category...
--

The BBC: Licensed at public expense to spread lies.

1874. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 23:44:07 UTC
From: Allodoxaphobia <bit-bucket@config.com>
Message-ID: <slrnc4q1a6.2i5p.bit-bucket@localhost.config.com>
Source record: 27961

On Mon, 08 Mar 2004 15:15:25 -0800, Roy Lewallen hath writ:
> ...
> A lot of hams like to say "73's" which of course means "best regardses",
> an endearing and Gollum-like affectation. These are, I suspect, the same
> general group that go to ATM machines, use TTL logic, and watch LCD
> displays. . .
. . . and are confounded by rotary telephones. HI!HI!

73
Jonesy
--
| Marvin L Jones | jonz | W3DHJ | OS/2
| Gunnison, Colorado | @ | Jonesy | linux __
| 7,703' -- 2,345m | config.com | DM68mn SK

1875. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-08 23:46:52 UTC
From: Allodoxaphobia <bit-bucket@config.com>
Message-ID: <slrnc4q1fc.2i5p.bit-bucket@localhost.config.com>
Source record: 27962

On Mon, 08 Mar 2004 23:42:03 +0000, Paul Burridge hath writ:
> On Mon, 08 Mar 2004 15:29:35 -0600, Dennis <Howdy
> Doody@howdydoody.net> wrote:
>
>> Yes, but why "73", why not "74", or even "69".
>
> When keyed in Morse code it has a certain characterstic 'ring' to it
> that few other two-number combinations do. Another one is "VA"
> (message ends). Keen CWers will no doubt be able to think of a few
> more that fall into that category...

"HI" comes to mind...."it has a certain characterstic 'ring' to it."

It does not mean 'Hello'. It is the telegrapher's _laugh_.

Jonesy
--
| Marvin L Jones | jonz | W3DHJ | OS/2
| Gunnison, Colorado | @ | Jonesy | linux __
| 7,703' -- 2,345m | config.com | DM68mn SK

1876. WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 00:00:15 UTC
From: Dennis <Howdy.Doody@howdydoody.net>
Message-ID: <c2j1efret1@xuxa.iecc.com>
Source record: 27963
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc, rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

HI,

Does anybody have a circuit that will
decode the WWVB signal,and output to a clock
led circuit?

TIA,

Dennis

1877. Re: Using a power mosfet to select from various power sources for HF rig

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 00:05:48 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <wT73c.129916$A12.109349@edtnps84>
Source record: 27964

Behold, James W signalled from keyed 4-1000A filament:

> Care to expand a bit on this?

Sure!

I found that the RDSon was too high with most MOSFET's. The best I could attain was a 1/2 volt drop at 1 amp load. When the CB linear came on, it increased the drop to 6 volts (60 amp draw).

So, I went to the auto wrecker and got a couple of 30 amp relays and a 100 amp contactor for the job and it worked perfect.

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

1878. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 00:10:13 UTC
From: Harv nelson <harv@whatever.net>
Message-ID: <404D0B65.304@whatever.net>
Source record: 27965

Dennis wrote:
> Serious question. What does "73" mean?
>
> I have a stack of "73"mags. I'm not a ham however.
> If I was, I of course would know.
>
> Anybody? I know it's a stupid question, but I don't know.
>
> TIA,
>
> Dennis
>
"73" = "Best Regards"
"88" = "Love and Kisses"

do a Google for something called the "Phillips Code" which will show you about a gazillion abreviations. It was used by WIRE telegraphers, as opposed to wire-less (radio) CW.

Also HAM = "Had-Alota-Money" (before i got into this hobby) :-)

Harv, AI9NL

1879. Re: Device identification

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 00:23:14 UTC
From: S <fn30@optonline.net>
Message-ID: <S783c.36425$Ak2.11370841@news4.srv.hcvlny.cv.net>
Source record: 27966

interesting answer,,

the numbers listed are from a certain peice of equipment, you will need to consult the manufacturer for the values. what you listed wil not reference to anything. where are they from?

usually devices that start with D are diodes Q is for transistor R is for resistor C is for capacitor. the nubers are usually what number in wiring sequence or quantiy of the particular device

hope this helps

-steve

"Allodoxaphobia" <bit-bucket@config.com> wrote in message news:slrnc4q147.2i5p.bit-bucket@localhost.config.com...
> On 8 Mar 2004 14:24:16 -0800, Fred hath writ:
> > Hi all,
> > is there a crossreference list for transistors such as C2827, C3405,
> > D553, D844 etc. I tried GOOGLE in various ways but got no positive
> > results.
>
> All those xistors are "2S"-yaa-daa-yaa-daa-yaa-daa.
> The Japanese for nomenclature each of those above
> then:
> 2SC2827,
> 2SC3405,
> 2SD553,
> 2SD844
> 2Setc. :-)
>
> Now you're better prepared to try cross-reference(s).
>
> HTH es 73
> Jonesy
> --
> | Marvin L Jones | jonz | W3DHJ | OS/2
> | Gunnison, Colorado | @ | Jonesy | linux __
> | 7,703' -- 2,345m | config.com | DM68mn SK

1880. Re: Using a power mosfet to select from various power sources for HF rig

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 00:59:09 UTC
From: budgie <me@privacy.net>
Message-ID: <sl5q40p9catm8jm5o9m5avdobqs5a7jhbb@4ax.com>
Source record: 27967

On Sun, 07 Mar 2004 22:33:12 -0800, James W
<change-to-jw22-at-trlp-dot-com@trlp.com> wrote:

>Anything I should be concerned about with my plans to use a power mosfet
>to choose amongst various 14V sources to power an IC706. This is for
>automotive use. I want to use my deep cycle batteries while the engine
>is off, and use the engine/battery/alternator while the engine is
>running. Thought I'd use a couple of big mosfets to select one or the
>other.
>
>thoughts?

Why not a pair of BIG Schottky diodes?

1881. Re: Device identification

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 01:02:32 UTC
From: budgie <me@privacy.net>
Message-ID: <ep5q409eljd47e32iie8pl42ko7ujvpiov@4ax.com>
Source record: 27968

On Tue, 09 Mar 2004 00:23:14 GMT, "S" <fn30@optonline.net> wrote:

>interesting answer,,

and it happens to be the right one for the vast majority of cases.

>the numbers listed are from a certain peice of equipment, you will need to
>consult the manufacturer for the values. what you listed wil not reference
>to anything. where are they from?

Que? Have you done much servicing of gear with Asian semis?

>usually devices that start with D are diodes Q is for transistor R is for
>resistor C is for capacitor. the nubers are usually what number in wiring
>sequence or quantiy of the particular device

only on schematics, not ON THE COMPONENTS.

_-_-_-_-_

>"Allodoxaphobia" <bit-bucket@config.com> wrote in message
>news:slrnc4q147.2i5p.bit-bucket@localhost.config.com...
>> On 8 Mar 2004 14:24:16 -0800, Fred hath writ:
>> > Hi all,
>> > is there a crossreference list for transistors such as C2827, C3405,
>> > D553, D844 etc. I tried GOOGLE in various ways but got no positive
>> > results.
>>
>> All those xistors are "2S"-yaa-daa-yaa-daa-yaa-daa.
>> The Japanese for nomenclature each of those above
>> then:
>> 2SC2827,
>> 2SC3405,
>> 2SD553,
>> 2SD844
>> 2Setc. :-)
>>
>> Now you're better prepared to try cross-reference(s).
>>
>> HTH es 73
>> Jonesy
>> --
>> | Marvin L Jones | jonz | W3DHJ | OS/2
>> | Gunnison, Colorado | @ | Jonesy | linux __
>> | 7,703' -- 2,345m | config.com | DM68mn SK
>

1882. Re: Kemet mil-spec cap ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 01:35:37 UTC
From: averyfineman@aol.com
Message-ID: <20040308203537.07155.00001161@mb-m06.aol.com>
Source record: 27969

In article <8s23c.1041$P71.235774073@newssvr11.news.prodigy.com>, "Henry Kolesnik" <kolesnik@sbcglobal.net> writes:

>I've measured several on two different capacitor meters and all read close
>to what the factory told me. I wonder why they coded the values with
>numbers that don't make any sense? Military intellligence?

No, Hank, having a new number set to anything is the result of every manufacturer assigning THEIR own arbitrary number or letter ID to their products. The military and the government is stuck with a TOTAL variety of spare parts that can boggle the mind...and does sometimes tax the efforts of those responsible for maintaining the logistics of vital parts of EVERYTHING for our government's needs.

I've been up to my elbows in Mil Specs quite enough in the past half century and just accept it as part of the environment. If you consult those Mil Specs long enough, you will see that there IS an order on ID, nomenclature, and so forth. Not only that, but aside from COTS stocks, a tantalum cap built to a certain Mil Spec will be the same value, size, rating, and shape from another manufacturer. Same with resistors, inductors, etc., etc., etc.

Try that with more than one commercial component manufacturer especially when there's a production run going on and the parts supply is lagging and the parts from another manufacturer don't fit. Deep trouble time. Or one manufacturer may add on some suffix letters or numbers to a so-called "standard" part because they make an "improved line" of products and the purchasing department doesn't adjust to this other manufacture's IDs...

The center for Military Intelligence schooling and operations is at Fort Huachuca, AZ. They have a website with interesting stuff on M.I. history in it.

Len Anderson
retired (from regular hours) electronic engineer person

1883. Re: Increasing range of rf remote

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 01:35:39 UTC
From: averyfineman@aol.com
Message-ID: <20040308203539.07155.00001162@mb-m06.aol.com>
Source record: 27970

In article <9fcc53a0.0403080915.3efb03ca@posting.google.com>,
fisher_keith@hotmail.com (Keith.fisher) writes:

>Hello,
>(Disclaimer - I am a novice electronics buff - just a few small
>projects)
> I have a small keychain remote used for advancing powerpoint slides.
>It has an integrated laser pointer that is very useful in presenting
>which is why I really want to get this to work.The remote is stated to
>be 433 mhz. The reciever is a small box about the size of a pack of
>cards.
>Right now it has a range of about 40 feet (the product spec says 100')
>I think it may have to do with the enviroment. We use it in a church
>and there are several wierless mics ect.
>I opened the recever and inside was a stiff wire antena bent into a
>square about 1.5 inchs per side. It is soldered onto the board.
>So I am wondering how I can increase the range of the
>transmitter/recever. Can I just solder a longer antena?

I would advise against soldering anything into it. What you describe
is a typical "patch antenna" that uses part of the existing PCB as a
sort of "ground plane." The impedance of the patch antenna will be
matched to the input impedance of the receiver's first stage and is
not guaranteed to be in the 40 to 90 Ohms impedance of, say, an
almost quarter-wave wire typical to an HT.

Just soldering in an extra wire length MAY work but there is no way
of telling - without a lot of other information about the receiver - what
the effects will be. It MAY be better but, in all likelyhood, will be
worse.

The RF environment of any inside of any building is unpredictable
for anything but gross results. All sorts of conductive things can
affect the RF field causing in-phase reinforcement of wavefronts or
out-of-phase attenuation of wavefronts.

There's a very easy test to do with no more than a coat hanger wire
stuck in a small block of wood. [done by a friend of mine needing to
do a presentation in a larger room than originally scheduled, some
years ago, but also for projection purposes] Cut the wire about
12 1/2 to 13 inches and stick it into the wood block (the block is an
insulator). Position it somewhere between the transmitter and
receiver by trial and error.

This is the most simple form of "passive repeater," in this case a
half-wavelength resonant thing at 433 MHz. All it does is to mess

about with the already-mixed-up wavefronts in the room (fairly well fixed by the building) such as to move a wavefront reinforcement towards the receiver. There's no amplification with that, of course, but it can cancel a deep attenuation at the receiver's location.

Does the room contain metal folding chairs? I've heard of those affecting wireless devices such as microphones. The dimensions of straight-line conductive objects in those chairs are close to a full wavelength at that frequency and many would be expected to change the overall wavefront pattern. If the effects are different when the chairs are folded and stacked, that is proof that they do.

Passive repeaters (of a more elaborate kind) have been used in "fringe areas" to improve reception, especially for a community that is behind some moderate hills. Those are just a high-gain antenna on one side of a hill connected by a feedline to another high-gain antenna on the other side of the hill. It works well enough without any electrical power supply of any kind.

A passive repeater Yagi antenna pair can be simple enough and small enough at 433 MHz even if each Yagi has three lengths (reflector, dipole, director) or just two (dipole and reflector). No power needed, just a short coaxial cable beteen each Yagi's dipoles. The Yagis should be at least a foot apart and preferrably at right angles (or slightly greater) to each other. That can be put at the side of the room or hall, one Yagi pointed towards the normal location of the transmitter, the other pointed towards the receiver location.

Such a Yagi can be built with #12 or #14 bare solid copper wire common to household electrical wiring. The dipole would be 12 1/2 to 13 inches long, the reflector about 3/4 to 1 inch longer than the dipole, the director element about 3/4 to 1 inch shorter than the dipole element. Each element can be spaced 4 to 5 inches apart. The elements could be mounted on-end, stuck in partway drill holes made in a piece of 2 x 4. Exact dimensions aren't critical... unless one wants to argue details to the end of time in newsgroups. :-)

>If possible I would like it to be somewhat omni directinal.

A passive repeater setup isn't precisely omnidirectional but it does allow a lot of freedom of movement in the general transmitter location.

>The product spec says it
>is (is that why the square ant and not a long skinny one???)

No. The internal patch antenna is fixed in shape by dozens of other factors. The fact that it is, in its largest dimension, smaller than a quarter wavelength makes its pattern approach, but not reach, that of an isotropic or point-source antenna.

>Also while looking online I see places that sell 433 mhz ant's for
>about 15$- They are made (I think) for handheld walki-talkies(??)
>would somthing like this help me.

No. A quarter wave whip for 433 MHz can be made from #14
bare solid copper for pennies and is self-supporting...and can
be soldered readily for adapting it to an adapter. I would advise
trying to fuss with either receiver or transmitter's antenna unless
you have a lot of experience under your belt and have access to
UHF-range test equipment.

A number of experienced people at the manufacturer have already
spent a lot of time on design to get the product in that shape and
small size. It may not be optimum (chances are it is a mass of
compromises) and may not be the best in ALL environments, but
fooling with it can result in it not working at all well afterwards.

Len Anderson
retired (from regular hours) electronic engineer person

1884. Re: Kemet mil-spec cap ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 03:11:14 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <hr3q40dilmqp9bhs3g2vvgm68hjkqiguei@4ax.com>
Source record: 27971
Cross-posted to: sci.electronics.components,rec.radio.amateur.homebrew,sci.electronics.repair

On Mon, 08 Mar 2004 21:44:10 GMT Al <no.spam@here.com> wrote:

>In article <8s23c.1041$P71.235774073@newssvr11.news.prodigy.com>,
> "Henry Kolesnik" <kolesnik@sbcglobal.net> wrote:
>
>> After several calls to the factory I was able to find someone who had a book
>> on the codes. Here's what he gave me when he figured out what number was
>> important.
>> 2116 = 1uF @ 50V
>> 2064 = 6.8uF @ 35V
>> 2139 = 18uF @ 50V
>> 2031 = 22 uF @ 15V
>> 2017 = 33uF @ 10V
>> 2004-J = 47uF @ 6V
>> 2035 = 68uF @ 15V
>> 2021 = 100uF @ 10V
>> I've measured several on two different capacitor meters and all read close
>> to what the factory told me. I wonder why they coded the values with
>> numbers that don't make any sense? Military intellligence?

>The numbers, like 2116, are just sequencial numbers on a very large
>table that covers many pages in a manual. The numbers make sense
>when you have the manual.

Okay, but why pick an identifiction method that requires a manual?
Most other components this size, including theirs, just have the
relevant numbers printed on them.

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA

1885. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 03:30:51 UTC
From: tommyknocker <tomynokr@uucp.hell>
Message-ID: <c2jdpb$f6c$1@xuxa.iecc.com>
Source record: 27973
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

Dennis wrote:

> HI,
>
> Does anybody have a circuit that will
> decode the WWVB signal,and output to a clock
> led circuit?

Go to Google and search for "atomic clock". In the first 20 or 30
listings you should find hobbyist sites that have diagrams and maybe
even kits.

1886. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 03:30:55 UTC
From: - - ex - - <exray@coqui.gov>
Message-ID: <c2jdpf$f8d$1@xuxa.iecc.com>
Source record: 27972
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

Dennis wrote:
> HI,
>
> Does anybody have a circuit that will
> decode the WWVB signal,and output to a clock
> led circuit?
>
> TIA,
>
> Dennis
>
>

You might want to search at http://www.google.com using the terms wwvb decoder clock. There's plenty to select from and a number of kits available.

-BM

1887. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 03:30:56 UTC
From: Tony Hwang <dragon40@shaw.ca>
Message-ID: <c2jdpg$f9h$1@xuxa.iecc.com>
Source record: 27974
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

Dennis wrote:

> HI,
>
> Does anybody have a circuit that will
> decode the WWVB signal,and output to a clock
> led circuit?
>
> TIA,
>
> Dennis
>
>
Hi,
Unless you want to have fun building a clock, there are many such clocks
or watches out there. I wear a watch. Very accurate in time keeping.
Tony, VE6CGX

1888. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 03:39:53 UTC
From: Incognito <BLB@sero.net>
Message-ID: <f0b3c.97$Nj.65@fed1read01>
Source record: 27975

Read the orgin of 73 (several versions) and the most probable version at
URL:
http://ac6v.com/73.htm#73

Lots more origins and Ham speak there as well as URL:
http://ac6v.com/jargon.htm

--
Incognito By Necessity (:-(

If you can't convince them, confuse them.
- - -Harry S Truman

"Dennis" <Howdy Doody@howdydoody.net> wrote in message
news:104pjm15vbh3ca1@corp.supernews.com...
> Serious question. What does "73" mean?
>
> I have a stack of "73"mags. I'm not a ham however.
> If I was, I of course would know.
>
> Anybody? I know it's a stupid question, but I don't know.
>
> TIA,
>
> Dennis
>

1889. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 05:24:04 UTC
From: averyfineman@aol.com
Message-ID: <20040309002404.01019.00000852@mb-m25.aol.com>
Source record: 27976

In article <c2j1efret1@xuxa.iecc.com>, Dennis <Howdy.Doody@howdydoody.net>
writes:

>Does anybody have a circuit that will
>decode the WWVB signal,and output to a clock
>led circuit?

You can find a similar circuit, all hardware, at Hans Summers website
in the UK (I expect he will be along shortly to remind us where). :-)

That was Hans' senior project in college, made to receive Rugby
broadcasts on 60 KHz. The time code format of WWVB (also on
60 KHz) is slightly different. Most such projects today use a
Microchip PIC or Atmel microcontroller programmed to do nearly
everything in decoding and displaying, but to LCDs rather than
LEDs.

Since the microcontrollers in the 30+ "radio clocks" on the market
usually have some DSP routines to aid in selectivity and noise
reduction, the hardware content is VERY low and the prices are
cheap enough. We have two such at the house, an Oregon
Scientific brand bought 4 years ago (small in size, good for travel),
a Large display unit from La Crosse Technology bought at Office
Depot. We (wife and I) didn't pay $30 for either one and they
were not on a special sale. They run for over a year on a single
battery and automatically update to correct time if needed. The
NIST website (under Time and Frequency division) has a list of
available "radio clocks" on the market. NIST has all the info on
the WWVB time code, area coverage, transmitter details, lots.

If you wanted an LED display instead of LCD, I'd suggest getting a
commercial unit and adapting the LCD signals out to LED driver
circuits. That way the RF input circuitry, DSP enhancement, and,
especially the decoding, is already done. That decoding isn't all
that easy to do if you've never worked with this sort of thing before
and it is definitely NOT simple like a "one-tube superhet" project.

Len Anderson
retired (from regular hours) electronic engineer person

1890. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 05:24:06 UTC
From: averyfineman@aol.com
Message-ID: <20040309002406.01019.00000853@mb-m25.aol.com>
Source record: 27977

In article <104pjm15vbh3ca1@corp.supernews.com>, Dennis <Howdy Doody@howdydoody.net> writes:

>Serious question. What does "73" mean?
>
>I have a stack of "73"mags. I'm not a ham however.
>If I was, I of course would know.
>
>Anybody? I know it's a stupid question, but I don't know.

After 1844 (the year of the first commercial telegraph service in the USA, Baltimore, MD to Washington, DC), the blazing speed of the early electromechanical sounders made it necessary for commercial telegraphers to to use abbreviations for standard phrases in telegrams. It gave telegraphers a chance to send more telegrams during a workday, increase their profits, etc., etc.

A whole bunch of different two-number sub-codes were invented and used. Few survive to today since morse codes have survived only in amateur radio.

One of the enduring sub-codes is "73" meaning "Best regards." Hams use it on voice, as well. It has become traditional jargon.

Morse code did NOT begin as the character = <dot-dash group> but was originally ALL numbers! Morse got a financial and lab mentor in railroad heir Alfred Vail who is reported to have suggested a change from the all-number code to one where each letter, number, and common punctuation mark has a unique dot-dash group. This latter improvement, along with a way to increase the distance of a landline by using a "relay" of an electromagnet whose magnetically-coupled switch substituted for a telegrapher's key in an unmanned telegraph line relay station. Up to three such "relays" could be used on a wired telegraph circuit. That may or may not be the etymological origin of the word "relay" as the component we know today.

The final version of morse code coding still doesn't allow much real speed in communication so a number of abbreviations were used as well as telegraphers' own jargon. One of those latter was the "R" sent as or after simple queries, meaning "okay?" or "okay" respectively. The dit-dah-dit of "R" has a nice little pattern to it and is intuitive for that. It continued on into radio after 1896..."R" meaning "okay" or "all right." With WW2's widespread use of radio of all kinds, operators on voice followed suit with the phonetic alphabet "R" or "Roger." "Roger" as an affirmative caught on and became common

jargon on voice. In spoken language it has found its own niche in military use exemplified by "roger that!" meaning very affirmative. :-)

"Q codes" are an example of three-letter sub-codes to mean whole phrases, either as queries (followed by a question mark) or as responses (followed by answer information). Those came about in radio since the letter "Q" was seldom used in English words...and the transistor hadn't been invented yet. :-) "QSY" was a query as to the exact frequency of a station (with spark transmitters that was more of a guess) but stayed around until WW2 when it was used on voice and teleprinter as a command to change frequency. "QSY Frisco George to 6885" would be an abbreviated command on either a telephone or teleprinter military radio order wire in the 1950s. "QTH" is another that stuck around in other radio services referring to a location.

Of course there are the "10 codes" used by the various police in the USA during the late 1940s and 1950s. Dirty, Evil CBers picked up on those and used them as short-form jargon, much to the outrage of licensed amateurs, most of whom where not born in 1958 when CB on 11 meters was created. :-)

Component values are even given jargon. Back before International Scientific terms were standardized, small-value capacitors were rated in micro-micro-Farads, written "uuFd." Electronics industry folks spoke of those values in "mickey-mikes." It didn't help when the SI powers of a 1000 names were used...now those "uuFd" caps are rated in "picoFarads" written "pFd," are now referred to as "puffs." :-)

After the first transistorized portable radios appeared, common folk started calling them using only one word, "transistor." That term has been used long after vacuum tube portable radios disappeared and the "transistorized" radios were now using integrated circuits. Human beans will use any kind of name and jargon in some activity they consider very exclusive. :-)

So, Best Regards all around but no 88s (wife frowns on that...),
Len Anderson
retired (from regular hours) electronic engineer person

1891. Re: Increasing range of rf remote

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 05:54:30 UTC
From: Check It Out <no@no.com>
Message-ID: <3uKdnUKUqsuPwdDdRVn-uw@centurytel.net>
Source record: 27978
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

You most likely will find a transistor for the rf output. Follow the emitter
to a resister. Reduce the value some. MORE POWER *grunt grunt*

"Keith.fisher" <fisher_keith@hotmail.com> wrote in message
news:9fcc53a0.0403080915.3efb03ca@posting.google.com...
> Hello,
> (Disclaimer - I am a novice electronics buff - just a few small
> projects)
> I have a small keychain remote used for advancing powerpoint slides.
> It has an integrated laser pointer that is very useful in presenting
> which is why I really want to get this to work.The remote is stated to
> be 433 mhz. The reciever is a small box about the size of a pack of
> cards.
> Right now it has a range of about 40 feet (the product spec says 100')
> I think it may have to do with the enviroment. We use it in a church
> and there are several wierless mics ect.
> I opened the recever and inside was a stiff wire antena bent into a
> square about 1.5 inchs per side. It is soldered onto the board.
> So I am wondering how I can increase the range of the
> transmitter/recever. Can I just solder a longer antena? If possible I
> would like it to be somewhat omni directinal. The product spec says it
> is (is that why the square ant and not a long skinny one???)
> Also while looking online I see places that sell 433 mhz ant's for
> about 15$- They are made (I think) for handheld walki-talkies(??)
> would somthing like this help me.
>
> Any help would be much appreciated!
> Thanx!
> Keith

1892. Re: slow process

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 08:10:35 UTC
From: Tom Sevart <n2uhc.spam@yahoo.com>
Message-ID: <c2jmuo$1si5tp$1@ID-52518.news.uni-berlin.de>
Source record: 27979

"Tom Bruhns" <k7itm@aol.com> wrote in message
news:3200347.0403020953.7c732286@posting.google.com...
> Um, David? Perhaps you should read the group name. This is an
> amateur radio newsgroup, not a group for homebrew alcohol (or other
> recreational chemicals). We do get the occasional posting here on
> those topics, but they're relatively rare.

Actually one of my other hobbies is making homemade wine. I haven't made
any for quite a while but have been getting the urge to try it again.

--
Tom Sevart N2UHC
Frontenac, KS
http://www.geocities.com/n2uhc

1893. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 08:17:38 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <fX0HWQFi2XTAFAh0@ifwtech.co.uk>
Source record: 27984

Avery Fineman wrote:
>The dit-dah-dit of "R" has a nice little pattern to it and
> is intuitive for that. It continued on into radio after 1896..."R"
>meaning
> "okay" or "all right."

"R" takes on extra significance in meteor-scatter and moonbounce communication. Meteor-pings can be so fleeting, and moonbounce is generally so weak, there have to be specialist QSO procedures.

These procedures strip the QSO down to its bare essentials. They involve lots of repetition, but they are very strict about requiring full confirmation both ways. Both stations must copy both callsigns, a signal report and the confirming "R" - if any of that is missing, it doesn't count as a QSO.

You and the other station might each have to sink a half-hour or more of concentrated effort into a single MS or moonbounce QSO... and in spite of the tenuous communication, there's a lot of satisfaction in knowing that the other guy is trying just as hard as you are. But in the end, the whole effort hangs on copying that final "R". There may be only one, and it may be only just above the noise level... but you *must* hear it.

So when it finally comes, that "di-dah-dit" pattern means a lot more than a casual "OK": it says "We-nailed-it!"

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1894. Re: 455 KC oscillator = CB jamming device

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 08:23:01 UTC
From: Tom Sevart <n2uhc.spam@yahoo.com>
Message-ID: <c2jnm1$1ud28o$1@ID-52518.news.uni-berlin.de>
Source record: 27980

"Guy" <kxto@yahoo.com> wrote in message
news:4f21d3b.0403032000.77158e1d@posting.google.com...
> when I lived in Reno, NV there was a person who was not very friendly
> on the radio. He was always getting drunk and once he was full of
> liquid courage, would swear, throw dead carriers, drive the drivers
> and us locals crazy. So a cb/ham operator made a device that was real
> small,,,it was placed in close proximity to his house, within 1/4
> mile. When he would key up on ch-19, it would start a audio carrier
> that was intermittant,,it was like a pulse for 5-7 minutes, he would
> key up again and once again get this pulsating tone, is the best way
> to describe it. Needless to say he cleaned up his act, and started to
> come around. So now I am in willamette valley and have the same
> problem. the person who made that "toy" has passed on,so now I am
> looking to get something of the same concept made. Any ideas? JPT.

Kind of sounds like another CB urban legend to me. Usually only the
receiver is mixed with 455 kHz, not the transmitter. And I've found that
most CB LO's are at 10.240 mHz. You could easily construct a transmitter
for that frequency but not legally operate it.

--
Tom Sevart N2UHC
Frontenac, KS
http://www.geocities.com/n2uhc

1895. Re: 455 KC oscillator = CB jamming device

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 08:24:07 UTC
From: Tom Sevart <n2uhc.spam@yahoo.com>
Message-ID: <c2jno4$1skobt$1@ID-52518.news.uni-berlin.de>
Source record: 27981

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:dqtd40pearu2fsmjlv6ajodlk7r3p66uu4@4ax.com...
> On Thu, 04 Mar 2004 07:47:46 GMT, Gregg <nospam@unknown.org> wrote:
>
> >Just "pin" his coax.
>
> Isn't that likely to disrupt his characteristic transmission line
> impedance? ;-)

Naw, it just gives him them thar SWR's.

Tom

1896. Re: request for introduction

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 08:29:15 UTC
From: Tom Sevart <n2uhc.spam@yahoo.com>
Message-ID: <c2jo1n$1tghht$1@ID-52518.news.uni-berlin.de>
Source record: 27982

What's up bud?

MAKE $$$ FAST!!!!!

1. Press your shift key.
2. Press the 4 key three times.

--
Tom Sevart N2UHC
Frontenac, KS
http://www.geocities.com/n2uhc

1897. Re: Device identification

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 08:29:25 UTC
From: whru@msn.com
Message-ID: <e52bdeaf.0403090029.d03f299@posting.google.com>
Source record: 27983

budgie <me@privacy.net> wrote in message
news:<ep5q409eljd47e32iie8pl42ko7ujvpiov@4ax.com>...
> On Tue, 09 Mar 2004 00:23:14 GMT, "S" <fn30@optonline.net> wrote:
>
> >interesting answer,,
>
> and it happens to be the right one for the vast majority of cases.
>
> >the numbers listed are from a certain peice of equipment, you will need to
> >consult the manufacturer for the values. what you listed wil not reference
> >to anything. where are they from?
>
> Que? Have you done much servicing of gear with Asian semis?
>
> >usually devices that start with D are diodes Q is for transistor R is for
> >resistor C is for capacitor. the nubers are usually what number in wiring
> >sequence or quantiy of the particular device
>
> only on schematics, not ON THE COMPONENTS.
>
> _-_-_-_-_
>
> >"Allodoxaphobia" <bit-bucket@config.com> wrote in message
> >news:slrnc4q147.2i5p.bit-bucket@localhost.config.com...
> >> On 8 Mar 2004 14:24:16 -0800, Fred hath writ:
> >> > Hi all,
> >> > is there a crossreference list for transistors such as C2827, C3405,
> >> > D553, D844 etc. I tried GOOGLE in various ways but got no positive
> >> > results.
> >>
> >> All those xistors are "2S"-yaa-daa-yaa-daa-yaa-daa.
> >> The Japanese for nomenclature each of those above
> >> then:
> >> 2SC2827,
> >> 2SC3405,
> >> 2SD553,
> >> 2SD844
> >> 2Setc. :-)
> >>
> >> Now you're better prepared to try cross-reference(s).
> >>
> >> HTH es 73
> >> Jonesy
> >> --

> >> | Marvin L Jones | jonz | W3DHJ | OS/2
> >> | Gunnison, Colorado | @ | Jonesy | linux __
> >> | 7,703' -- 2,345m | config.com | DM68mn SK
> >

Thanks Marvin, this makes alot more sense now
73
Fred.

1898. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 12:34:13 UTC
From: Hans Summers <Hans.Summers@Tudor.Com>
Message-ID: <c2kdk8$1uiimv$1@ID-61331.news.uni-berlin.de>
Source record: 27985

"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040309002404.01019.00000852@mb-m25.aol.com...
> In article <c2j1efret1@xuxa.iecc.com>, Dennis
<Howdy.Doody@howdydoody.net>
> writes:
>
> >Does anybody have a circuit that will
> >decode the WWVB signal,and output to a clock
> >led circuit?
>
> You can find a similar circuit, all hardware, at Hans Summers website
> in the UK (I expect he will be along shortly to remind us where). :-)
>
Well, since you insist Len ;-)

http://www.hanssummers.com/electronics/clocks/radio/radioclk.htm

73 all
Hans
G0UPL

1899. Re: Kemet mil-spec cap ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 13:00:51 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <7ej3c.1160$795.316026944@newssvr11.news.prodigy.com>
Source record: 27986

One serious shortcome of this system is that a tech in the field would have
a tough or impossible time replacing a known defective capacitor, say
shorted, with the correct value without a cross reference of mil numbers vs
value. The system is oxymoronic in this case as is military intelligence in
many more and I served!
73
Hank WD5JFR
"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040308203537.07155.00001161@mb-m06.aol.com...
> In article <8s23c.1041$P71.235774073@newssvr11.news.prodigy.com>, "Henry
> Kolesnik" <kolesnik@sbcglobal.net> writes:
>
> >I've measured several on two different capacitor meters and all read
close
> >to what the factory told me. I wonder why they coded the values with
> >numbers that don't make any sense? Military intellligence?
>
> No, Hank, having a new number set to anything is the result of every
> manufacturer assigning THEIR own arbitrary number or letter ID to
> their products. The military and the government is stuck with a
> TOTAL variety of spare parts that can boggle the mind...and does
> sometimes tax the efforts of those responsible for maintaining the
> logistics of vital parts of EVERYTHING for our government's needs.
>
> I've been up to my elbows in Mil Specs quite enough in the past
> half century and just accept it as part of the environment. If you
> consult those Mil Specs long enough, you will see that there IS an
> order on ID, nomenclature, and so forth. Not only that, but aside
> from COTS stocks, a tantalum cap built to a certain Mil Spec will
> be the same value, size, rating, and shape from another
> manufacturer. Same with resistors, inductors, etc., etc., etc.
>
> Try that with more than one commercial component manufacturer
> especially when there's a production run going on and the parts
> supply is lagging and the parts from another manufacturer don't
> fit. Deep trouble time. Or one manufacturer may add on some
> suffix letters or numbers to a so-called "standard" part because
> they make an "improved line" of products and the purchasing
> department doesn't adjust to this other manufacture's IDs...
>
> The center for Military Intelligence schooling and operations is at
> Fort Huachuca, AZ. They have a website with interesting stuff on
> M.I. history in it.
>

> Len Anderson
> retired (from regular hours) electronic engineer person

1900. Re: Kemet mil-spec cap ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 14:28:56 UTC
From: Al <no.spam@here.com>
Message-ID: <no.spam-212441.09285609032004@news.verizon.net>
Source record: 27987
Cross-posted to: sci.electronics.components,rec.radio.amateur.homebrew,sci.electronics.repair

In article <hr3q40dilmqp9bhs3g2vvgm68hjkqiguei@4ax.com>,
Jim Adney <jadney@vwtype3.org> wrote:

> On Mon, 08 Mar 2004 21:44:10 GMT Al <no.spam@here.com> wrote:
>
> >In article <8s23c.1041$P71.235774073@newssvr11.news.prodigy.com>,
> > "Henry Kolesnik" <kolesnik@sbcglobal.net> wrote:
> >
> >> After several calls to the factory I was able to find someone who had a
> >> book
> >> on the codes. Here's what he gave me when he figured out what number was
> >> important.
> >> 2116 = 1uF @ 50V
> >> 2064 = 6.8uF @ 35V
> >> 2139 = 18uF @ 50V
> >> 2031 = 22 uF @ 15V
> >> 2017 = 33uF @ 10V
> >> 2004-J = 47uF @ 6V
> >> 2035 = 68uF @ 15V
> >> 2021 = 100uF @ 10V
> >> I've measured several on two different capacitor meters and all read close
> >> to what the factory told me. I wonder why they coded the values with
> >> numbers that don't make any sense? Military intellligence?
> >
> >The numbers, like 2116, are just sequencial numbers on a very large
> >table that covers many pages in a manual. The numbers make sense
> >when you have the manual.
>
> Okay, but why pick an identifiction method that requires a manual?
> Most other components this size, including theirs, just have the
> relevant numbers printed on them.
>
> -
> ---
> Jim Adney jadney@vwtype3.org
> Madison, WI 53711 USA
> ---

OK, let me give you a few example lines from the manual:

uF Case tol. Failure Rate (%/1000hrs) DC Leakage in uA
Code % 1.0 0.1 0.01 0.001 25C 85C 125C

5.6 A 5 5001 5201 5401 5601 0.3 6 7.5
5.6 A 10 2241 2481 2721 2961 0.3 6 7.5
6.8 A 5 5002 5202 5402 5602 0.3 6 7.5
6.8 A 10 2242 2482 2722 2962 0.3 6 7.5
6.8 A 20 2243 2483 2723 2963 0.3 6 7.5

So a M38003/01-5001 is unique. I left out the dissipation factor for simplicty.

As you can see, there is much more information in this code number than just the capacitance value and the voltage. When a component is bought to this specification, it will meet it. If you buy a random FF uF VV volt capacitor, you have no clue as to what you have with respect to leakage, reliability, dissipation factor and the like.

al

--
There's never enough time to do it right the first time.......

1901. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 15:01:22 UTC
From: mikea@mikea.ath.cx
Message-ID: <c2km82$72a$2@puck.litech.org>
Source record: 27988

Harv nelson <harv@whatever.net> wrote:

> do a Google for something called the "Phillips Code" which will show you
> about a gazillion abreviations. It was used by WIRE telegraphers, as
> opposed to wire-less (radio) CW.

And if you want to see an example of a real military codebook, I have
one up on my website at <http://mikea.ath.cx>, third link down:

US Army Training Codebook, WW2
Divisional Field Code, Training Edition No. 2

Somehow, "73" seems a lot simpler than "OKXV" or "3797", as found in
<http://mikea.ath.cx/codebook/pp064-065.jpg>.

And yes, I _MUST_ OCR the pages or type them in or something; the
images are too bulky and slow, even though they are an exact
representation of the pages.

--
Mike Andrews
mikea@mikea.ath.cx
Tired old sysadmin

1902. domanda al contrario

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 16:41:49 UTC
From: 2n2369 <albamarr@tiscali.it>
Message-ID: <c2ldcn$9f7$1@lacerta.tiscalinet.it>
Source record: 27898
Cross-posted to: free.it.elettronica.smt,it.hobby.elettronica,it.hobby.elettronica.riparazioni,it.hobby.radioamatori,it.hobby.radio-cb,rec.radio.amateur.homebrew

Scusate :
Me lo mandate lo schema dell'oscillatore modulato am/fm pubblicato forse
uno o due anni fa da elettronica 2000 (o forse elettronica flash) creato da
M.Castelnuovo?
Solo schema e lista componenti.
Mettete nell'oggetto dell'email soltanto :
VFO CASTELNUOVO
Grazie in advance !

albamarr@tiscali.it

1903. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 16:46:54 UTC
From: Dennis <Howdy.Doody@howdydoody.net>
Message-ID: <c2ksdurjj1@xuxa.iecc.com>
Source record: 27989
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc, rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

In article <c2jdpg$f9h$1@xuxa.iecc.com>, dragon40@shaw.ca says...
>
>
>Dennis wrote:
>
>> HI,
>>
>> Does anybody have a circuit that will
>> decode the WWVB signal,and output to a clock
>> led circuit?
>>
>> TIA,
>>
>> Dennis
>>
>>
>Hi,
>Unless you want to have fun building a clock, there are many such clocks
>or watches out there. I wear a watch. Very accurate in time keeping.
>Tony, VE6CGX
>

Yes, I have one of these clocks also. The thing is, these clocks
are set 6 times in a 24hr perod by the WWVB signal. The rest of the
time the time base is an ordinary crystal. I want my clock to be
set on a more continous basis. This could only happen with the
continous decoding of the signal. This is how the "professional"
clocks, such as those made by Spectracom work.

-Dennis

1904. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 16:46:59 UTC
From: not@home.com
Message-ID: <c2kse3rli1@xuxa.iecc.com>
Source record: 27990
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

Sure....$20 at WalMart or RatShack. Mine sync'd up at midnight with a
full-scale signal on 60 Khz.....(c;

On 9 Mar 2004 00:00:15 GMT, Dennis <Howdy.Doody@howdydoody.net> wrote:

>HI,
>
>Does anybody have a circuit that will
>decode the WWVB signal,and output to a clock
>led circuit?
>
>TIA,
>
>Dennis
>
>

Larry W4CSC
POWER is our friend!

1905. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 17:13:08 UTC
From: kludge@panix.com
Message-ID: <c2ktv4$8ca$1@xuxa.iecc.com>
Source record: 27992
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

Dennis <Howdy.Doody@howdydoody.net> wrote:
>In article <c2jdpg$f9h$1@xuxa.iecc.com>, dragon40@shaw.ca says...
>>Dennis wrote:
>>
>>> Does anybody have a circuit that will
>>> decode the WWVB signal,and output to a clock
>>> led circuit?
>>>
>>Hi,
>>Unless you want to have fun building a clock, there are many such clocks
>>or watches out there. I wear a watch. Very accurate in time keeping.
>
>Yes, I have one of these clocks also. The thing is, these clocks
>are set 6 times in a 24hr perod by the WWVB signal. The rest of the
>time the time base is an ordinary crystal. I want my clock to be
>set on a more continous basis. This could only happen with the
>continous decoding of the signal. This is how the "professional"
>clocks, such as those made by Spectracom work.

You might consider the old Heathkit clock, which still turns up cheaply
at hamfests now and then.

If you build your own, make sure you use nixie tubes. That's important.
--scott
--
"C'est un Nagra. C'est suisse, et tres, tres precis."

1906. Re: Device identification

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 17:18:59 UTC
From: Allodoxaphobia <bit-bucket@config.com>
Message-ID: <slrnc4rv43.1csb.bit-bucket@localhost.config.com>
Source record: 27991

On 9 Mar 2004 00:29:25 -0800, Fred hath writ:

> Thanks Marvin, this makes alot more sense now
> 73
> Fred.

Yep. So often it just like a Secret Handshake. HI!HI!
73
Jonesy
--
| Marvin L Jones | jonz | W3DHJ | OS/2
| Gunnison, Colorado | @ | Jonesy | linux __
| 7,703' -- 2,345m | config.com | DM68mn SK

1907. MFJ balanced line tuner efficiency?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 17:29:51 UTC
From: denton <denton@oregontrail.net>
Message-ID: <c2kudu$c1g$1@news.oregontrail.net>
Source record: 27993

I am thinking of homebrewing a balanced line tuner per the schematic of the new MFJ balanced line tuner....but am wondering how efficient that particular schematic is compared to a Johnson Matchbox.

1908. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 17:38:26 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c2kvi2dkc1@newshost.mot.com>
Source record: 27994
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc, rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

"Dennis" <Howdy.Doody@howdydoody.net> wrote in message
news:c2j1efret1@xuxa.iecc.com...
> HI,
>
> Does anybody have a circuit that will
> decode the WWVB signal,and output to a clock
> led circuit?
> TIA, Dennis

http://www.amug.org/~jthomas/wwvb.html

--
Steve N, K,9;d, c. i My email has no u's.

1909. Elpac schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 18:02:29 UTC
From: Alfred Lorona <w6wqc@dslextreme.com>
Message-ID: <c2l0th$1t3gcs$1@ID-49117.news.uni-berlin.de>
Source record: 27995

Does anyone have a schematic for an Alpac 12 V, 20 A power supply model ELV250-12? Or, alternately, can someone tell me what the three trim pots adjust?

Thanks es 73, AL

1910. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 20:09:04 UTC
From: "Mark S. Holden" <mark@bmas.org>
Message-ID: <c2l890$7jm$1@xuxa.iecc.com>
Source record: 27996
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

Dennis wrote:
> <snip>
>
> Yes, I have one of these clocks also. The thing is, these clocks
> are set 6 times in a 24hr perod by the WWVB signal. The rest of the
> time the time base is an ordinary crystal. I want my clock to be
> set on a more continous basis. This could only happen with the
> continous decoding of the signal. This is how the "professional"
> clocks, such as those made by Spectracom work.
>
> -Dennis

Observatories often use a GPS to feed their computers accurate time. That may be a solution worth looking into.

1911. Hands electronics, are they still going ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 20:41:21 UTC
From: Martin <admin@127.0.0.1>
Message-ID: <c2laum$h6i$1$8302bc10@news.demon.co.uk>
Source record: 27897
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Hello,
I was looking for Hands Electronics
http://www.rf-kits.demon.co.uk
but the web site is no longer active and
I can not find any thing current in searches
for Hands electronics or Sheldon Hands

any one know if Sheldon has packed in or
what the current web address is

Thanks Martin

1912. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 22:37:12 UTC
From: averyfineman@aol.com
Message-ID: <20040309173712.13960.00001109@mb-m11.aol.com>
Source record: 27899

In article <fX0HWQFi2XTAFAh0@ifwtech.co.uk>, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> writes:

>Avery Fineman wrote:
>>The dit-dah-dit of "R" has a nice little pattern to it and
>> is intuitive for that. It continued on into radio after 1896..."R"
meaning
>> "okay" or "all right."
>
>"R" takes on extra significance in meteor-scatter and moonbounce
>communication. Meteor-pings can be so fleeting, and moonbounce is
>generally so weak, there have to be specialist QSO procedures.

Roger that, Ian. :-)

I meant no disrespect for moonbouncers or scattered scatterers, was
just ruminating on the mass of jargon and phrases that have become
commonplace in radio communications in many radio services, both
civilian and government. "Roger" as an affirmation word has been
with us for six decades and seems entrenched as an equal to "okay"
over radio.

Using "roger" instead of the word "okay" (common in several
languages, not quite as common as "hamburger") seems a sort of
tribal speak kind of exclusive jargon. The same with vocalized "73"
instead of saying just "best regards." Same number of syllables
and takes about the same time to pronounce. :-)

Len Anderson
retired (from regular hours) electronic engineer person

1913. domanda al contrario

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 22:37:59 UTC
From: 2n2369 <albamarr@tiscali.it>
Message-ID: <c2lh4cckb1@lacerta.tiscalinet.it>
Source record: 27900
Cross-posted to: free.it.elettronica.smt,it.hobby.elettronica,it.hobby.elettronica.riparazioni,it.hobby.radioamatori,it.hobby.radio-cb,rec.radio.amateur.homebrew

Scusate :
Me lo mandate lo schema dell'oscillatore modulato am/fm pubblicato forse
uno o due anni fa da elettronica 2000 (o forse elettronica flash) creato da
M.Castelnuovo?
Solo schema e lista componenti.
Mettete nell'oggetto dell'email soltanto :
VFO CASTELNUOVO
Grazie in advance !

albamarr@tiscali.it

1914. Re: Increasing range of rf remote

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 22:46:21 UTC
From: fisher_keith@hotmail.com
Message-ID: <9fcc53a0.0403091446.26a68675@posting.google.com>
Source record: 27901
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Thanx all for the info on the antenna. I looked in the recever and
found the antena is *gasp* about 6.5 inches long!!! It is bent inside
the case into a square. So if I was to straighten and piont it straght
up would this help with range? Is the reason it is bent inside just to
hide and make the recever smaller or is it somehowe helping the
recever be omnidirectional? Agian - thanx for all the input!!!
KEith

> [snip]
>
> > You may be better off putting a better antenna at the receiver end. The
> > optimum would be a 1/4 wavelength. Hey, anybody out there remember the
> > damn equation for this... 300,000 meters per second devided by
> > something-or-other???
>
> A wavelength of 1 meter is a frequency of 300 MHz.
>
> So 433 MHz will have a wavelength of (300/433) meters, or 9/13 meters.
>
> A 1/4-wave antenna would be (1/4)*(9/13) meters long, which is 9/52
> meters long -- which is just a teeny bit longer than 9/54 meters,
> and that's 1/6 of a meter, or (1/6)* 39.37 inches, or just a smidgen
> over 6.5 inches long -- and all that assumes I did the arithmetic
> right. Since I'm a math jock, there's no guarantee I did, so check it
> yourselves.
>
> I just fired up the 4-banger calculator, and it tells me that the
> 1/4-wave antenna should be 6.819+ inches long, so 6.5 is a good
> ballpark figure.

1915. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 22:48:09 UTC
From: N2EY@AOL.COM
Message-ID: <c2356669.0403091448.3b9b7506@posting.google.com>
Source record: 27902

Dennis <Howdy Doody@howdydoody.net> wrote in message
news:<104pjm15vbh3ca1@corp.supernews.com>...
> Serious question. What does "73" mean?
>
"Best regards"

It derives from landwire telegraph usage, and appears as early as 1857 in a list of abbreviations. Some of these telegraph abbreviations were transitioned into radio use and have survived because of their obvious utility.

In 1859, Western Union standardized on the "92 code" in which the numbers from 1 to 92 were assigned meanings. It was in this list that 73 got its present meaning. Later more numbers were added. Here's a partial list:

1 Wait a moment
2 Important Business
3 What time is it?
4 Where shall I go ahead?
5 Have you business for me?
6 I am ready
7 Are you ready?
8 Close your key; circuit is busy
9 Close your key for priority business (Wire chief, dispatcher, etc)
10 Keep this circuit closed
12 Do you understand?
13 I understand
14 What is the weather?
15 For you and other to copy
17 Lightning here
18 What is the trouble?
19 Form 19 train order
21 Stop for a meal
22 Wire test
23 All copy
24 Repeat this back
25 Busy on another wire
26 Put on ground wire
27 Priority, very important
28 Do you get my writing?
29 Private, deliver in sealed envelope
30 No more (end)
31 Form 31 train order
32 I understand that I am to ...

33 Car report (Also, answer is paid for)
34 Message for all officers
35 You may use my signal to answer this
37 Diversion (Also, inform all interested)
39 Important, with priority on thru wire (Also, sleep-car report)
44 Answer promptly by wire
73 Best regards
88 Love and kisses
91 Superintendant's signal
92 Deliver promptly
93 Vice President and General Manager's signals
95 President's signal
134 Who is at the key?

"19" and "31" refer to train orders of two different types (absolute and permissive). They were so well known that the terms "19 order" and "31 order" were still in railroad use in the 1970s, after the telegraph was gone from railroad operations.

The Morse code used in US wire telegraphy was the "American" Morse code, which shares some codes with the "Continental" code we still use today. (The continent referred to in the name is Europe, and it became the standard code for radio work early in the 20th century).

The abbreviation "es" for "and" derives from the American Morse character "&" which was dit dididit. The prosign "SK" with the letters run together derives from the American Morse "30", which was dididididahdit daaaaaaaah (extra long dah is zero in that code).

There are some urban legends about Winchester rifles and such, but they do not stand up to historical fact.

73 de Jim, N2EY

1916. Re: Increasing range of rf remote

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 22:48:13 UTC
From: fisher_keith@hotmail.com
Message-ID: <9fcc53a0.0403091448.731203a0@posting.google.com>
Source record: 27903
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Hmmm...More power..I like it! I am going to play with the ant on the
recever some more but I may just crack open the transmitter if all
else fails...
Thanx
KEith

"Check It Out" <no@no.com> wrote in message
news:<3uKdnUKUqsuPwdDdRVn-uw@centurytel.net>...
> You most likely will find a transistor for the rf output. Follow the emitter
> to a resister. Reduce the value some. MORE POWER *grunt grunt*
>
> "Keith.fisher" <fisher_keith@hotmail.com> wrote in message
> news:9fcc53a0.0403080915.3efb03ca@posting.google.com...
> > Hello,
> > (Disclaimer - I am a novice electronics buff - just a few small
> > projects)
> > I have a small keychain remote used for advancing powerpoint slides.
> > It has an integrated laser pointer that is very useful in presenting
> > which is why I really want to get this to work.The remote is stated to
> > be 433 mhz. The reciever is a small box about the size of a pack of
> > cards.
> > Right now it has a range of about 40 feet (the product spec says 100')
> > I think it may have to do with the enviroment. We use it in a church
> > and there are several wierless mics ect.
> > I opened the recever and inside was a stiff wire antena bent into a
> > square about 1.5 inchs per side. It is soldered onto the board.
> > So I am wondering how I can increase the range of the
> > transmitter/recever. Can I just solder a longer antena? If possible I
> > would like it to be somewhat omni directinal. The product spec says it
> > is (is that why the square ant and not a long skinny one???)
> > Also while looking online I see places that sell 433 mhz ant's for
> > about 15$- They are made (I think) for handheld walki-talkies(??)
> > would somthing like this help me.
> >
> > Any help would be much appreciated!
> > Thanx!
> > Keith

1917. Re: Hands electronics, are they still going ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 22:52:09 UTC
From: Frank Dinger <gm0cszx.xkn6wh@ntlworld.com>
Message-ID: <%Tr3c.6014$sq2.1801@newsfe2-gui.server.ntli.net>
Source record: 27904
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

> I can not find any thing current in searches
> for Hands electronics or Sheldon Hands
>
> any one know if Sheldon has packed in or
> what the current web address is
==========

I have heard that indeed , Sheldon has packed in and so has or will The QRP Component Company ,G3TUX

Another trader in the UK ; Radiosports (Bernie & Brenda) have retired ,since there is not enough business in the UK for but a few traders.

Frank GM0CSZ / KN6WH

1918. Re: Increasing range of rf remote

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-09 22:58:41 UTC
From: fisher_keith@hotmail.com
Message-ID: <9fcc53a0.0403091458.4415746d@posting.google.com>
Source record: 27905

Thanx for the info! I really like the idea of a passive repeater. I
will give this a try!
There are in fact about 500 metal chairs in between the front and
back...so that mey be hindering the range.I did a test at home and can
only get about 10 feet range..I find that alot of my rf stuff is very
limited at home I think it is because I have a bunch of wireless x-10
stuff...
Anyway thanx for the great advice!
Keith

averyfineman@aol.com (Avery Fineman) wrote in message
news:<20040308203539.07155.00001162@mb-m06.aol.com>...

<snip>
>
> I would advise against soldering anything into it. What you describe
> is a typical "patch antenna" that uses part of the existing PCB as a
> sort of "ground plane." The impedance of the patch antenna will be
> matched to the input impedance of the receiver's first stage and is
> not guaranteed to be in the 40 to 90 Ohms impedance of, say, an
> almost quarter-wave wire typical to an HT.
>
> Just soldering in an extra wire length MAY work but there is no way
> of telling - without a lot of other information about the receiver - what
> the effects will be. It MAY be better but, in all likelyhood, will be
> worse.
>
> The RF environment of any inside of any building is unpredictable
> for anything but gross results. All sorts of conductive things can
> affect the RF field causing in-phase reinforcement of wavefronts or
> out-of-phase attenuation of wavefronts.
>
> There's a very easy test to do with no more than a coat hanger wire
> stuck in a small block of wood. [done by a friend of mine needing to
> do a presentation in a larger room than originally scheduled, some
> years ago, but also for projection purposes] Cut the wire about
> 12 1/2 to 13 inches and stick it into the wood block (the block is an
> insulator). Position it somewhere between the transmitter and
> receiver by trial and error.
>
> This is the most simple form of "passive repeater," in this case a
> half-wavelength resonant thing at 433 MHz. All it does is to mess
> about with the already-mixed-up wavefronts in the room (fairly well
> fixed by the building) such as to move a wavefront reinforcement
> towards the receiver. There's no amplification with that, of course,

> but it can cancel a deep attenuation at the receiver's location.
>
> Does the room contain metal folding chairs? I've heard of those
> affecting wireless devices such as microphones. The dimensions
> of straight-line conductive objects in those chairs are close to a
> full wavelength at that frequency and many would be expected to
> change the overall wavefront pattern. If the effects are different when
> the chairs are folded and stacked, that is proof that they do.
>
> Passive repeaters (of a more elaborate kind) have been used in
> "fringe areas" to improve reception, especially for a community that
> is behind some moderate hills. Those are just a high-gain antenna
> on one side of a hill connected by a feedline to another high-gain
> antenna on the other side of the hill. It works well enough without
> any electrical power supply of any kind.
>
> A passive repeater Yagi antenna pair can be simple enough and
> small enough at 433 MHz even if each Yagi has three lengths
> (reflector, dipole, director) or just two (dipole and reflector). No
> power needed, just a short coaxial cable beteen each Yagi's
> dipoles. The Yagis should be at least a foot apart and preferrably
> at right angles (or slightly greater) to each other. That can be put
> at the side of the room or hall, one Yagi pointed towards the normal
> location of the transmitter, the other pointed towards the receiver
> location.
>
> Such a Yagi can be built with #12 or #14 bare solid copper wire
> common to household electrical wiring. The dipole would be 12 1/2
> to 13 inches long, the reflector about 3/4 to 1 inch longer than the
> dipole, the director element about 3/4 to 1 inch shorter than the
> dipole element. Each element can be spaced 4 to 5 inches apart.
> The elements could be mounted on-end, stuck in partway drill
> holes made in a piece of 2 x 4. Exact dimensions aren't critical...
> unless one wants to argue details to the end of time in newsgroups. :-)
>
> >If possible I would like it to be somewhat omni directinal.
>
> A passive repeater setup isn't precisely omnidirectional but it does
> allow a lot of freedom of movement in the general transmitter
> location.
>
> >The product spec says it
> >is (is that why the square ant and not a long skinny one???)
>
> No. The internal patch antenna is fixed in shape by dozens of other
> factors. The fact that it is, in its largest dimension, smaller than a
> quarter wavelength makes its pattern approach, but not reach, that
> of an isotropic or point-source antenna.
>
> >Also while looking online I see places that sell 433 mhz ant's for

> >about 15$- They are made (I think) for handheld walki-talkies(??)
> >would somthing like this help me.
>
> No. A quarter wave whip for 433 MHz can be made from #14
> bare solid copper for pennies and is self-supporting...and can
> be soldered readily for adapting it to an adapter. I would advise
> trying to fuss with either receiver or transmitter's antenna unless
> you have a lot of experience under your belt and have access to
> UHF-range test equipment.
>
> A number of experienced people at the manufacturer have already
> spent a lot of time on design to get the product in that shape and
> small size. It may not be optimum (chances are it is a mass of
> compromises) and may not be the best in ALL environments, but
> fooling with it can result in it not working at all well afterwards.
>
> Len Anderson
> retired (from regular hours) electronic engineer person

1919. Re: Hands electronics, are they still going ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 00:09:18 UTC
From: xpyttl <xpyttl_nospam@earthling.net>
Message-ID: <104snidm6tvv370@corp.supernews.com>
Source record: 27906
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

For some time now the web site has indicated that would happen. I think
many of Sheldon's kits are available from Kanga U.S., but I have never seen
anything on Bill's website as extensive as Sheldon's.

..

"Martin" <admin@127.0.0.1> wrote in message
news:c2laum$h6i$1$8302bc10@news.demon.co.uk...
> Hello,
> I was looking for Hands Electronics
> http://www.rf-kits.demon.co.uk
> but the web site is no longer active and
> I can not find any thing current in searches
> for Hands electronics or Sheldon Hands
>
> any one know if Sheldon has packed in or
> what the current web address is
>
> Thanks Martin
>
>

1920. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 01:07:32 UTC
From: Russ <carlzomer@hotmail.com>
Message-ID: <ohqs40lh1pvuksdfqvn64b9gpo1j2qsf9j@4ax.com>
Source record: 27907
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc, rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

On Tue, 9 Mar 2004 11:38:26 -0600, "Steve Nosko"
<suteuve.nosukowicuz@moutouroula.com> wrote:

>
>"Dennis" <Howdy.Doody@howdydoody.net> wrote in message
>news:c2j1efret1@xuxa.iecc.com...
>> HI,
>>
>> Does anybody have a circuit that will
>> decode the WWVB signal,and output to a clock
>> led circuit?
>> TIA, Dennis
>
>
>http://www.amug.org/~jthomas/wwvb.html

Why not use a computer and an NTP server?

Russ

1921. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 01:16:44 UTC
From: tommyknocker <tomynokr@uucp.hell>
Message-ID: <c2lq9s$6tv$1@xuxa.iecc.com>
Source record: 27909
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

Dennis wrote:

> In article <c2jdpg$f9h$1@xuxa.iecc.com>, dragon40@shaw.ca says...
> >
> >
> >Dennis wrote:
> >
> >> HI,
> >>
> >> Does anybody have a circuit that will
> >> decode the WWVB signal,and output to a clock
> >> led circuit?
> >>
> >> TIA,
> >>
> >> Dennis
> >>
> >>
> >Hi,
> >Unless you want to have fun building a clock, there are many such clocks
> >or watches out there. I wear a watch. Very accurate in time keeping.
> >Tony, VE6CGX
> >
>
> Yes, I have one of these clocks also. The thing is, these clocks
> are set 6 times in a 24hr perod by the WWVB signal. The rest of the
> time the time base is an ordinary crystal. I want my clock to be
> set on a more continous basis. This could only happen with the
> continous decoding of the signal. This is how the "professional"
> clocks, such as those made by Spectracom work.
>
> -Dennis

You'll find that most of the schematics on the net for atomic clocks are
of the crystal variety-they set once or twice a day with WWVB and the
rest of the time use a crystal. You'll have to do some digging to come
up with something that does continuous decoding, but I'm sure it's out
there.

1922. Re: MFJ balanced line tuner efficiency?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 01:17:28 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c2lqb8$i8g$1@titan.btinternet.com>
Source record: 27908

If a tuner doesn't burst into flames with a 1 KW transmitter then it must be resonably efficient. There must be a lot less than 1/2 S-unit loss in signal strength.

Why all the concern about efficiency of tuners? Old wives' ?

Reg.

1923. Re: Kemet mil-spec cap ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 02:56:56 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <nnus40ljokgasu3k5d2ni0e0a452n89p30@4ax.com>
Source record: 27910
Cross-posted to: sci.electronics.components,rec.radio.amateur.homebrew,sci.electronics.repair

On Tue, 09 Mar 2004 14:28:56 GMT Al <no.spam@here.com> wrote:

>In article <hr3q40dilmqp9bhs3g2vvgm68hjkqiguei@4ax.com>,
> Jim Adney <jadney@vwtype3.org> wrote:

>> Okay, but why pick an identifiction method that requires a manual?
>> Most other components this size, including theirs, just have the
>> relevant numbers printed on them.

>OK, let me give you a few example lines from the manual:
>
>uF Case tol. Failure Rate (%/1000hrs) DC Leakage in uA
> Code % 1.0 0.1 0.01 0.001 25C 85C 125C
>
>5.6 A 5 5001 5201 5401 5601 0.3 6 7.5
>5.6 A 10 2241 2481 2721 2961 0.3 6 7.5
>6.8 A 5 5002 5202 5402 5602 0.3 6 7.5
>6.8 A 10 2242 2482 2722 2962 0.3 6 7.5
>6.8 A 20 2243 2483 2723 2963 0.3 6 7.5
>
>So a M38003/01-5001 is unique. I left out the dissipation factor for
>simplicty.
>
>As you can see, there is much more information in this code number than
>just the capacitance value and the voltage. When a component is bought
>to this specification, it will meet it. If you buy a random FF uF VV
>volt capacitor, you have no clue as to what you have with respect to
>leakage, reliability, dissipation factor and the like.

I have a similar page here from the Sprague/Vishay catalog. In this
case it just happens to be for some caps which I picked up surplus
which are marked M39006/25-xxxx.

In this case the xxxx code pins down the tolerance and failure rate,
just as the Kemet does above (note that everything else above is the
same.) OTOH, the Sprague/Vishay caps are also labeled with their C and
V ratings, as well as the tolerance. Only the failure rate is left
unexplained. There is also an H-code for high vibration which you
might need the catalog page to interpret.

BTW, both manufacturers have a code for an M failure rate, which is
1.0% per 1000 hours. I find it hard to believe that anyone would buy
such a device, especially the military. The ones I got were the R
rate, .01% per 1000 hours. Those are the best that they offer and I'll
bet those are the only ones that ever get sold.

So I still don't think it's too much to ask that the most important
data be printed out separately.

Obviously, I don't tend to think like the military....

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA

1924. Re: Hands electronics, are they still going ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 03:41:15 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <104t3j0ps63ak63@corp.supernews.com>
Source record: 27911
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

I checked with Bill Kelsey of Kanga US. He said Sheldon has retired. (Good for him!) Bill says he has just a few things of Sheldon's left in his stock, so you might check with him if you want something specific and you're feeling lucky -- n8et@kangaus.com.

Roy Lewallen, W7EL

Martin wrote:
> Hello,
> I was looking for Hands Electronics
> http://www.rf-kits.demon.co.uk
> but the web site is no longer active and
> I can not find any thing current in searches
> for Hands electronics or Sheldon Hands
>
> any one know if Sheldon has packed in or
> what the current web address is
>
> Thanks Martin
>
>

1925. Re: Kemet mil-spec cap ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 03:59:19 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <104t4knnb23vi14@corp.supernews.com>
Source record: 27912
Cross-posted to: sci.electronics.components,rec.radio.amateur.homebrew,sci.electronics.repair

Jim Adney wrote:
> . . .
> So I still don't think it's too much to ask that the most important
> data be printed out separately.
>
> Obviously, I don't tend to think like the military....
>
> -
> --
> Jim Adney jadney@vwtype3.org
> Madison, WI 53711 USA
> --

While you've got a legitimate point, you've got to realize the function of the part number. If you're a technician servicing a piece of military gear, you replace a 20035942 *ONLY* with a 20035942, not *ANY* other capacitor, regardless of its value. To order a replacement, you put in a requisition for a 20035942. Now, it's vital to you that the capacitors in the stock bin or coming in from the supply system have 20035942 printed on them, but it's not important that the value is. The technician can find the value in the parts list in the manual and likely on the schematic. The stark fact is that the military supply system wasn't created and isn't maintained for the convenience of the ham who's working on surplus gear.

You'll actually find this is true throughout the industry, with many ICs, for example, having only the customer's part numbers on them. Go to a flea market anywhere around here where I live, and you'll find lots of components with only Tektronix part numbers on them. You'll also find lots of folks locally who can tell you what they are, at least generically. I'm sure the same thing is true for HP and Palo Alto, Motorola and Phoenix, and so forth.

It's not that you don't think like the military -- it's just that when they developed their stock system they didn't take into consideration the inconvenience it would cause you, me, and other hobbyists.

Roy Lewallen, W7EL

1926. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 04:46:06 UTC
From: Biz WD=?ISO-8859-1?B?2A==?=HCO <wd0hco@ev1.net>
Message-ID: <c2m6ie$t0m$1@xuxa.iecc.com>
Source record: 27914
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

Here is a nice circuit:

http://users.viawest.net/~aloomis/seistime.htm

This guy has info on kits for WWV, CHU and GPS systems:

http://www.pacificsites.com/~brooke/timefreq.shtml

Enjoy - Biz WD&#65533;HCO

1927. Looking for TDA7330B chip

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 04:46:12 UTC
From: "Bob G. Mahrenholz" <bobm@edge.net>
Message-ID: <404E9D7D.9F99AF96@edge.net>
Source record: 27913

Hi:
Anyone know where I can get a couple (1 plus a spare) of SGS-Thomson
TDA7330B RDS decoder chips?

Bob
K4QQK

1928. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 05:02:01 UTC
From: averyfineman@aol.com
Message-ID: <20040310000201.21642.00004902@mb-m01.aol.com>
Source record: 27915

In article <c2lq9s$6tv$1@xuxa.iecc.com>, tommyknocker <tomynokr@uucp.hell>
writes:

>Dennis wrote:
>
>> In article <c2jdpg$f9h$1@xuxa.iecc.com>, dragon40@shaw.ca says...
>> >
>> >
>> >Dennis wrote:
>> >
>> >> HI,
>> >>
>> >> Does anybody have a circuit that will
>> >> decode the WWVB signal,and output to a clock
>> >> led circuit?
>> >>
>> >> TIA,
>> >>
>> >> Dennis
>> >>
>> >Hi,
>> >Unless you want to have fun building a clock, there are many such clocks
>> >or watches out there. I wear a watch. Very accurate in time keeping.
>> >Tony, VE6CGX
>>
>> Yes, I have one of these clocks also. The thing is, these clocks
>> are set 6 times in a 24hr perod by the WWVB signal. The rest of the
>> time the time base is an ordinary crystal. I want my clock to be
>> set on a more continous basis. This could only happen with the
>> continous decoding of the signal. This is how the "professional"
>> clocks, such as those made by Spectracom work.
>>
>> -Dennis
>
>You'll find that most of the schematics on the net for atomic clocks are
>of the crystal variety-they set once or twice a day with WWVB and the
>rest of the time use a crystal. You'll have to do some digging to come
>up with something that does continuous decoding, but I'm sure it's out
>there.

The equipment is "out there" but the closest you will come to any
sort of detailed description/circuitry is the NIST site itself. An
example is the IRIG range timing, usually derived from a rubidium
or cesium standard, they may do an update via the NIST time code
but more likely it will phase-lock to the WWVB carrier.

"Ordinary" quartz crystals in the radio clocks can have all sorts of tolerances on their frequency. There are 86,400 seconds in one day. A common 50 ppm (parts per million) tolerance (5 x 10^-5) would show a 4.32 second per day maximum error. By stabilizing, or perhaps trimming, the oscillator circuit in a radio clock, one can get it down to 5 ppm or 0.432 seconds per day error.

However, an update circuit might exhibit a quantization error of 1 second which would be additive to the radio clock's crystal oscillator tolerance and possibly defeat the "accurate setting."

As a practical matter, I used to spot-check the Oregon Scientific radio clock against the WWV ticks and found it to be better than 6 ppm, the worst error being about a half-second. I just checked again and found it to be bang-on the WWV ticks. :-) The big radio clock is in the same sync on seconds with the little one.

To avoid quantization errors of setting the internal calendar clock, the "update" could advance or retard the crystal through a VCXO circuit driven by a D-to-A whose digital correction is derived from a comparison of the NIST time code to the internal calendar clock. Kind of a very slow phase-lock done the hard way. Might take days to get in phase. :-)

I'm very satisfied with better than +/- 1 second error from these two inexpensive things and won't change them. Ain't in the TV BC biz like CBS affiliate stations back in '56 that needed +/- 1 second maximum errors to "take network" when scheduled or lose money.

Len Anderson
retired (from regular hours) electronic engineer person

1929. CalTech amp in Jan/Feb QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 05:29:38 UTC
From: Steve Bauder <sbauder@wwt.net>
Message-ID: <7Jx3c.292$KG2.590@reggie.win.bright.net>
Source record: 27916

Anybody give this amp design a try? I just got the schematic corrections from KN6EK (one of the authors) and I'm anxious to build it. Looks pretty straightforward and simple. Any words of wisdom from those who have gone before?

Steve Bauder, NX9Z

1930. WANT TO BUY

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 06:03:59 UTC
From: Carl Domanico <vze2686b@verizon.net>
Message-ID: <jdy3c.39677$YN5.2109@nwrdny03.gnilink.net>
Source record: 27917

Hi...I'm looking for a Drake L-7 HF Linear Amplifer...Condition Mint to Excellent...Reasonable Price.....

Carl
N2MFW

1931. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 07:00:36 UTC
From: "Eric F. Richards" <efricha@dim.com>
Message-ID: <c2meekrhd1@xuxa.iecc.com>
Source record: 27918
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

What I did is use a GPS-disciplined receiver to give me a highly
accurate 10 MHz standard. The receiver costs $250 from
www.buylegacy.com but you'll end up paying (way too much) for a power
supply/line lump and the antenna. I also spent money on software to
use with it on my win2k box.

Every 10 minutes that software updates a web page with the sky view
and how the high-grade crystal oven is functioning, including
estimated error over 24 hours if it loses contact with the GPS
satellites.

http://www.dim.com/~efricha/GPS/

--
Eric F. Richards, efricha@dim.com
"Nature abhors a vacuum tube." -- J. R. Pierce, Bell Labs, c. 1940

1932. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 08:27:58 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <Ts$0oiCOGtTAFADo@ifwtech.co.uk>
Source record: 27919

Len wrote:

> Roger that, Ian. :-)
>
> I meant no disrespect for moonbouncers or scattered scatterers

Don't worry, Len, I never imagined that for even a moment.

>, was
> just ruminating on the mass of jargon and phrases

Likewise... although this really isn't a topic for r.r.a.homebrew.

--
73 from Ian G3SEK

1933. Re: MFJ balanced line tuner efficiency?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 09:23:07 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <t9Sr8lG75tTAFAkm@ifwtech.co.uk>
Source record: 27920

Reg Edwards wrote:
>If a tuner doesn't burst into flames with a 1 KW transmitter then it must be
>resonably efficient. There must be a lot less than 1/2 S-unit loss in
>signal strength.
>
>Why all the concern about efficiency of tuners? Old wives' ?

No, because coils actually do melt and switch contacts do arc, even at the 100W power level. This is because commercial tuners are notoriously over-specified, and always use components that are at least one size too small.

Rule of thumb: divide the rated power level by at least 3 - and you still may not be entirely safe.

The T-match tuner can match a very wide range of impedances, but it is also prone to operator error - specifically, using too much inductance.

For the lowest possible stress on the components, you must use the *lowest* value of inductance that will allow the two capacitors to be adjusted to give an impedance match.

You can also get a match using higher inductance, but the internal voltages and circulating currents will be unnecessarily high. That's where the inefficiency problems arise. With T-tuners, these problems are especially acute when trying to match low impedances at low frequencies.

The ARRL Antenna Handbook has a lot more to say about this, and the CD-ROM includes a program that lets you map out the efficiency as a function of load impedance and frequency. Some of the numbers down in that low-frequency, low-impedance corner are plain scary - most of the power is going into the tuner itself, and it comes out as smoke.

This situation is not entirely the fault of manufacturers. It's we customers who demand a tuner that claims to match every impedance, at every frequency, with the highest possible power rating, and all for less than the lowest possible cost. The T-tuner probably comes closest to this ideal, which is why they choose that configuration... but it isn't always the right choice.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

1934. Re: MFJ balanced line tuner efficiency?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 11:00:49 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <bi0t401andkffmr5ppqioorrpm93o65qbe@4ax.com>
Source record: 27921

On Wed, 10 Mar 2004 01:17:28 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@ZZZbtinternet.com> wrote:

>If a tuner doesn't burst into flames with a 1 KW transmitter then it must be
>resonably efficient. There must be a lot less than 1/2 S-unit loss in
>signal strength.
>
>Why all the concern about efficiency of tuners? Old wives' ?
>---
>Reg.
>

Reg, you must be joking .... 1/2 S unit isn't much when an S-unit
on most of those plastic boxes is around a few decibels, suppose we
are not talking about real S-units any more, then you would get too
many complaints of reporting 55 when everybody else give 59+. Those
modern American tuners (unlike those good old KW tuners) are not
really balanced, they use a balun on the output, and forget about
earth current

73

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

1935. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 11:24:08 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <etst40t5bigcmk36dh72tv8p4l9judfj05@4ax.com>
Source record: 27922

On 09 Mar 2004 22:37:12 GMT, averyfineman@aol.com (Avery Fineman)
wrote:

> Using "roger" instead of the word "okay" (common in several
> languages, not quite as common as "hamburger") seems a sort of
> tribal speak kind of exclusive jargon. The same with vocalized "73"
> instead of saying just "best regards." Same number of syllables
> and takes about the same time to pronounce. :-)
>

An old G3 chum of mine goes *nuts* if anyone uses these CW
abreviations on phone.
--

The BBC: Licensed at public expense to spread lies.

1936. Re: Kemet mil-spec cap ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 14:11:35 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <rmF3c.1385$6a3.403587231@newssvr11.news.prodigy.com>
Source record: 27923
Cross-posted to: sci.electronics.components,rec.radio.amateur.homebrew,sci.electronics.repair

I was a GCA radar tech in the RCAF in the 1960s and in one of the excercises (war games) we had to find and fix a fault so the incoming aircraft wouldn't crash, it was zero visibility . Sometimes it was as easy as a bad or loose tube, but some seargents had subchassis with cold solder joints, shorted black beauty capacitors or fried resistors. Time was critcal as the weather was closing fast and the aircraft was low on fuel. Sometimes the excercise left us without many parts, partially functional test equpt, and only partial manuals. To better simulate battle conditions, one end of the hut could be on fire and CO2 smoke to hinder visibilty! A shorted .01 uF 400VDC black beauty was easliy replaced with a .01 uF 600VDC or .02 a fried 22K 1/2 watt with a 22K 2 watt or something close. Color codes were quite useful in many cases. The objective was to save the aircraft using limited resources. Today I don't think we see component level repair in the field but in battle anything may be necessary for survival. I'd much rather have something with component values rather than a bunch of codes that required decifering. I still contend this is a result of "military intelligence." And the codes make it tough on us hobbyists but we not under a critical time crunch and with the Internet it's usually a piece of cake.
73
Hank WD5JFR
"Roy Lewallen" <w7el@eznec.com> wrote in message
news:104t4knnb23vi14@corp.supernews.com...
> Jim Adney wrote:
> > . . .
> > So I still don't think it's too much to ask that the most important
> > data be printed out separately.
> >
> > Obviously, I don't tend to think like the military....
> >
> > -
> > --
> > Jim Adney jadney@vwtype3.org
> > Madison, WI 53711 USA
> > --
>
> While you've got a legitimate point, you've got to realize the function
> of the part number. If you're a technician servicing a piece of military
> gear, you replace a 20035942 *ONLY* with a 20035942, not *ANY* other
> capacitor, regardless of its value. To order a replacement, you put in a
> requisition for a 20035942. Now, it's vital to you that the capacitors
> in the stock bin or coming in from the supply system have 20035942
> printed on them, but it's not important that the value is. The
> technician can find the value in the parts list in the manual and likely

> on the schematic. The stark fact is that the military supply system
> wasn't created and isn't maintained for the convenience of the ham who's
> working on surplus gear.
>
> You'll actually find this is true throughout the industry, with many
> ICs, for example, having only the customer's part numbers on them. Go to
> a flea market anywhere around here where I live, and you'll find lots of
> components with only Tektronix part numbers on them. You'll also find
> lots of folks locally who can tell you what they are, at least
> generically. I'm sure the same thing is true for HP and Palo Alto,
> Motorola and Phoenix, and so forth.
>
> It's not that you don't think like the military -- it's just that when
> they developed their stock system they didn't take into consideration
> the inconvenience it would cause you, me, and other hobbyists.
>
> Roy Lewallen, W7EL
>

1937. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 16:09:29 UTC
From: rhf-say-bye-bye@pacbell.net
Message-ID: <c2nejp$3c8$1@xuxa.iecc.com>
Source record: 27924
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc, rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

```
= = = tommyknocker <tomynokr@uucp.hell> wrote in message
= = = news:<c2lq9s$6tv$1@xuxa.iecc.com>...
> Dennis wrote:
>
> > In article <c2jdpg$f9h$1@xuxa.iecc.com>, dragon40@shaw.ca says...
> > >
> > >
> > >Dennis wrote:
> > >
> > >> HI,
> > >>
> > >> Does anybody have a circuit that will
> > >> decode the WWVB signal,and output to a clock
> > >> led circuit?
> > >>
> > >> TIA,
> > >>
> > >> Dennis
> > >>
> > >>
> > >Hi,
> > >Unless you want to have fun building a clock, there are many such clocks
> > >or watches out there. I wear a watch. Very accurate in time keeping.
> > >Tony, VE6CGX
> > >
> >
> > Yes, I have one of these clocks also. The thing is, these clocks
> > are set 6 times in a 24hr perod by the WWVB signal. The rest of the
> > time the time base is an ordinary crystal. I want my clock to be
> > set on a more continous basis. This could only happen with the
> > continous decoding of the signal. This is how the "professional"
> > clocks, such as those made by Spectracom work.
> >
> > -Dennis
>
> You'll find that most of the schematics on the net for atomic clocks are
> of the crystal variety-they set once or twice a day with WWVB and the
> rest of the time use a crystal. You'll have to do some digging to come
> up with something that does continuous decoding, but I'm sure it's out
> there.
>

TK,
```

For a normal 'ordinary' Consumer Time Standard that is Accurate to
within a Tenth of Second: Every Minute; Every Hour; Every Day . . .
The above Time Synchronization Process is more than adequate.

~ RHF
.

1938. Re: Kemet mil-spec cap ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 16:47:48 UTC
From: Al <no.spam@here.com>
Message-ID: <no.spam-99E7B0.11474610032004@news.verizon.net>
Source record: 27925
Cross-posted to: sci.electronics.components,rec.radio.amateur.homebrew,sci.electronics.repair

In article <rmF3c.1385$6a3.403587231@newssvr11.news.prodigy.com>,
"Henry Kolesnik" <kolesnik@sbcglobal.net> wrote:

> I was a GCA radar tech in the RCAF in the 1960s and in one of the excercises
> (war games) we had to find and fix a fault so the incoming aircraft
> wouldn't crash, it was zero visibility . Sometimes it was as easy as a bad
> or loose tube, but some seargents had subchassis with cold solder joints,
> shorted black beauty capacitors or fried resistors. Time was critcal as the
> weather was closing fast and the aircraft was low on fuel. Sometimes the
> excercise left us without many parts, partially functional test equpt, and
> only partial manuals. To better simulate battle conditions, one end of the
> hut could be on fire and CO2 smoke to hinder visibilty! A shorted .01 uF
> 400VDC black beauty was easliy replaced with a .01 uF 600VDC or .02 a fried
> 22K 1/2 watt with a 22K 2 watt or something close. Color codes were quite
> useful in many cases. The objective was to save the aircraft using limited
> resources. Today I don't think we see component level repair in the field
> but in battle anything may be necessary for survival. I'd much rather have
> something with component values rather than a bunch of codes that required
> decifering. I still contend this is a result of "military intelligence."
> And the codes make it tough on us hobbyists but we not under a critical time
> crunch and with the Internet it's usually a piece of cake.

In the sixties that was possible. But now you can't really fly by the
seat of your pants. Repair is by replacing LRUs (Least Replaceable
Units). Even if the LRU makes it back to the depot for failure
confirmation, it may not be repairable. 6, 8 or 12 layer PCBs cannot be
readily repaired. And would you trust one that was repaired if it did
not go through a burn-in cycle afterward? Would you depend on a
fail-safe circuit to prevent a nuclear launch if it had a component
replaced in it that was "close enough?" Maybe in your cars brake system,
but not on my missile!

Al

--
There's never enough time to do it right the first time.....

1939. Re: Elecraft

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 17:49:06 UTC
From: N2EY@AOL.COM
Message-ID: <c2356669.0403100949.6cf92ad2@posting.google.com>
Source record: 27926

bhockenberry@verizon.net (Ross Hockenberry) wrote in message
news:<4048e865.16424962@news.verizon.net>...
> On 5 Mar 2004 10:21:33 -0800, N2EY@AOL.COM (N2EY) wrote:
> The K2 is listed at 599. The 100W kit lis listed as K2 359.00 + the
> amplifier section.

The basic K2 costs $599

The add-on 100W amplifier costs $359

The K2/100 (100 W version) costs $958 ($599 + $359)

73 de Jim, N2EY

1940. Re: Question about toroid vs. air core coil.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 17:52:14 UTC
From: N2EY@AOL.COM
Message-ID: <c2356669.0403100952.204ee6@posting.google.com>
Source record: 27927

"J Shrum" <shrumj@madisontelco.com> wrote in message
news:<UradnW2tjOPHY9HdRVn-uQ@shawneelink.net>...
> Nevermind... I figured it out.
>
>
> I must say, this little toy sings! I can't even believe how great it sounds
> for having 1 transistor and a couple caps.
>
> Thanks again folks.
>
What frequency xtal(s) do you have?

73 de Jim, N2EY

1941. Re: Kemet mil-spec cap ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 17:59:54 UTC
From: Roger Hamlett <rogerspamignored@ttelmah.demon.co.uk>
Message-ID: <2HI3c.3458$re1.1290@newsfe1-win>
Source record: 27928
Cross-posted to: sci.electronics.components,rec.radio.amateur.homebrew,sci.electronics.repair

"Al" <no.spam@here.com> wrote in message
news:no.spam-99E7B0.11474610032004@news.verizon.net...
> In article <rmF3c.1385$6a3.403587231@newssvr11.news.prodigy.com>,
> "Henry Kolesnik" <kolesnik@sbcglobal.net> wrote:
>
> > I was a GCA radar tech in the RCAF in the 1960s and in one of the
excercises
> > (war games) we had to find and fix a fault so the incoming aircraft
> > wouldn't crash, it was zero visibility . Sometimes it was as easy as a
bad
> > or loose tube, but some seargents had subchassis with cold solder
joints,
> > shorted black beauty capacitors or fried resistors. Time was critcal as
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> > weather was closing fast and the aircraft was low on fuel. Sometimes
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> > excercise left us without many parts, partially functional test equpt,
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> > only partial manuals. To better simulate battle conditions, one end of
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> > hut could be on fire and CO2 smoke to hinder visibilty! A shorted .01
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> > 22K 1/2 watt with a 22K 2 watt or something close. Color codes were
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> > useful in many cases. The objective was to save the aircraft using
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> > something with component values rather than a bunch of codes that
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> > decifering. I still contend this is a result of "military
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> > And the codes make it tough on us hobbyists but we not under a critical
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> > crunch and with the Internet it's usually a piece of cake.
>
> In the sixties that was possible. But now you can't really fly by the
> seat of your pants. Repair is by replacing LRUs (Least Replaceable
> Units). Even if the LRU makes it back to the depot for failure

> confirmation, it may not be repairable. 6, 8 or 12 layer PCBs cannot be
> readily repaired. And would you trust one that was repaired if it did
> not go through a burn-in cycle afterward? Would you depend on a
> fail-safe circuit to prevent a nuclear launch if it had a component
> replaced in it that was "close enough?" Maybe in your cars brake system,
> but not on my missile!

True, in the 'close enough' stakes, but it is well worth reflecting that 90% of simple systems use a relatively small 'subset' of parts from the avilable world pool. An engineer, with one each of the IC's for a range of boards, and a few dozen resistors and capacitors, can potentially repair most faults on such boards 'on site', especially if the board is designed with this in mind (possibly with some form of self diagnostics for many parts). However if the same units are built with SM parts in quantity, using custom IC's, the solution becomes to carry a complete replacement board. Doing this for a few dozen products is often not practical. The problem here is that the custom IC/SM solution is cheaper once production reaches a reasonable level, but is not the best solution where the units are going to be a long way from 'spares'.

I designed a range of units used on sites across many third-world countries, and it became necessary to deliberately design the units with both redundancy, and repairability in mind. Given that the service engineer may have to travel 1000miles to get to a unit, having it so that repair is likely to be possible, was a vital design criterion. The parts list was deliberately 'shrunk', retaining as far as was practical a limited range of parts used in all. Unfortunately the relative costs of truly 'mass' production, combined with robot construction/assembly, make such designs a 'dying art'...

Best Wishes

1942. Re: vfo question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 18:02:40 UTC
From: N2EY@AOL.COM
Message-ID: <c2356669.0403101002.466c001@posting.google.com>
Source record: 27929

"KU4YP" <ku4yp@verizon.net> wrote in message
news:<UWf2c.70794$C65.10561@nwrddc01.gnilink.net>...
> hello all,
>
> i have a vfo from a heathkit hw-101. i also have a knight kit t-60.
> question is what would it take and how much trouble would it be to build an
> external vfo for my t-60 transmitter using this vfo? i have read some of the
> old hanbooks but wanted to hear from the group.

The tuning range of the VFO in the HW-101 is 5 to 5.5 MHz. Its output
is low impedance and only about a volt or so.

The T-60 requires VFO output in the 80 and/or 40 meter bands. It needs
more output (several volts at least) than the HW-101 vfo can provide.

The mixer solution suggested by others will work, but it's not simple
and requires a bit of doing to get going.

Knight did not make a matching VFO for the T-60. There *was* a Knight
VFO, but they are relatively rare.

One very good yet simple VFO design is the QST article (February 1962,
IIRC) called "An Easy To Build VFO" by W1ICP. Will drive almost any of
the classic "Novice MOPA" transmitters like the T-60.

73 de Jim, N2EY

1943. Re: 455 KC oscillator = CB jamming device

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 18:16:47 UTC
From: elbowjuice <elbowjuice@pubalot.com>
Message-ID: <c2nm2c$1ig$1@newsg1.svr.pol.co.uk>
Source record: 27930

You just need to spend 1000 or so on a posh ham set, with repeater function. Mod it to CB, set a little sound activated switch on the PTT line, with one of them cheep talking keyrings in it... Look at the laughing policeman web site they have loads of ideas

1944. Re: MFJ balanced line tuner efficiency?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 19:41:37 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c2nr1h$r5g$1@sparta.btinternet.com>
Source record: 27931

Ian,

Quite rightly, you blame the melt down of the tuner not to the tuner's intrinsic inefficiency (which none of them have) but to the abuse inflicted on it by the user with the help of a transmitter.

All tuners are high-efficiency devices when operated within their ratings. They can't help being otherwise. They have only a length of wire in the form of a coil and a condenser.

Reg.

1945. Re: Kemet mil-spec cap ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 20:19:55 UTC
From: Al <no.spam@here.com>
Message-ID: <no.spam-7A56EB.15195510032004@news.verizon.net>
Source record: 27932
Cross-posted to: sci.electronics.components,rec.radio.amateur.homebrew,sci.electronics.repair

In article <2HI3c.3458$re1.1290@newsfe1-win>,
"Roger Hamlett" <rogerspamignored@ttelmah.demon.co.uk> wrote:

> "Al" <no.spam@here.com> wrote in message
> news:no.spam-99E7B0.11474610032004@news.verizon.net...
> > In article <rmF3c.1385$6a3.403587231@newssvr11.news.prodigy.com>,
> > "Henry Kolesnik" <kolesnik@sbcglobal.net> wrote:
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> deliberately 'shrunk', retaining as far as was practical a limited range of
> parts used in all. Unfortunately the relative costs of truly 'mass'
> production, combined with robot construction/assembly, make such designs a
> 'dying art'...
>
> Best Wishes

If your design criterion is that the equipment be field repairable with readily available parts, then so be it. I have no argument with that! But in the high-reliability military electronics world in which I worked in the late 60's, that was not possible. Would you believe that one printed circuit card, 4 in by 6 in, was needed just to implement 4 flip-flops using descrete components. Each component, yes even a carbon composition resistor, had a serial number on it. Why? So it could be traced back to the lot from it which it had been selected if it failed. And boy, did those components have to be reliable! So that's why the military specifications with their "strange" component markings were invented. Expensive? Lordy, lordy! I was very shocked one day when I requisitioned a capacitor from stock to compare to a rejected one. The price for that unit, a precision paper mylar cap. was $100 - in 1970's dollars! I almost fell out of my chair! And now you can buy stuff like that, surplus, for just pennies on the dollar...and with their strange markings.

I have a bag full of CSR13G825KR's! Anybody need one?

Al

Al

--
There's never enough time to do it right the first time.......

1946. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 20:38:13 UTC
From: Dennis <Howdy.Doody@howdydoody.net>
Message-ID: <c2nubl$5c5$1@xuxa.iecc.com>
Source record: 27933
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave

```
In article <c2nejp$3c8$1@xuxa.iecc.com>, rhf-say-bye-bye@pacbell.net says...
>
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>= = = tommyknocker <tomynokr@uucp.hell> wrote in message
>= = = news:<c2lq9s$6tv$1@xuxa.iecc.com>...
>> Dennis wrote:
>>
>> > In article <c2jdpg$f9h$1@xuxa.iecc.com>, dragon40@shaw.ca says...
>> > >
>> > >
>> > >Dennis wrote:
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>> > >> HI,
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>> > >> Does anybody have a circuit that will
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>For a normal 'ordinary' Consumer Time Standard that is Accurate to
>within a Tenth of Second: Every Minute; Every Hour; Every Day . . .
>The above Time Synchronization Process is more than adequate.
>
>~ RHF
>.
>Yes, for the "normal", "ordinary" consumer what you say is true.

Fortunately or unfortunately I don't fall into that catagory,
when it comes to time and frequency. I've been fascinated by
time & frequency for quite a while now.

-Dennis

1947. old transformer catalogs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-10 22:52:41 UTC
From: big iron <nounwantedmail@nounwantedmail.swbell.net>
Message-ID: <404F9AAE.A28170@nounwantedmail.swbell.net>
Source record: 27934
Cross-posted to: alt.ham-radio.marketplace,rec.audio.tubes,rec.ham-radio.swap,rec.antiques.radio+phono,rec.radio.amateur.boat anchors,rec.radio.amateur.homebrew,rec.radio.amateur.swap

FYI there's a cd on ebay with them, looks like about 50 catalogs on a CD, and the scans look pretty good.

Item number: 3083439402

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=3083439402&category=50573

1948. Re: Kemet mil-spec cap ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-11 02:12:02 UTC
From: averyfineman@aol.com
Message-ID: <20040310211202.29660.00003382@mb-m24.aol.com>
Source record: 27935

In article <no.spam-7A56EB.15195510032004@news.verizon.net>, Al <no.spam@here.com> writes:

>If your design criterion is that the equipment be field repairable with >readily available parts, then so be it. I have no argument with that! >But in the high-reliability military electronics world in which I worked >in the late 60's, that was not possible.

In the late 1960s I was working in both commercial, space, and military electronics. Only the space electronics (unmanned space-craft done at Electro-Optical Systems, EOS, in Pasadena, CA, a Xerox division) was there traceability to that extent, plus the "JAN TX" or tested-extra solid-state components. That was with reasonable logic since no company would pay per diem for in-the-field space-craft repairpersons... :-)

I might note that the little labels used to mark the components were of a selected brand...to avoid outgassing in vacuum of space and thus coating some other spacecraft instrument or sensor. Some have called such a practice "braindead procedures by NASA" but those people are themselves braindead for not thinking through for operating in a very different environment.

Since that time I've been involved in a lot of other DoD electronics and have never seen that level of traceability except in certain prototypes and then used solely for development testing. NASA man-rating specs - not Mil Specs unless called out for common types - required screening and traceability for a very good reason that humans were aboard those spacecraft (STS or "shuttle"). Astronauts shouldn't be required to get down to the PCB level and unsolder bad components and resolder new ones in microgravity for one reason. Another reason is that they can't GET to a part such as the ignitor of an SSME (Space Shuttle Main Engine, built at Rocketdyne Division of Rockwell International in Canoga Park, CA, - now a division of Boeing Aircraft). That ignitor was often called a "spark plug" in-house but was really a redundant astable multivibrator turned on remotely and a driver for an external arc gap...the entire "ignition system" in one extremely clean (had to work in pure oxygen environment) little unit that had to work just fine in vibration you couldn't possibly imagine.

Much military radio and electronics equipment bears something resembling screening markings on modules but any research into that will show they are merely in-house or depot markings for ID and other things, not traceability. If you see the insides of an AN/PRC-104 HF transceiver or an AN/PRC-119 VHF FHSS

transceiver, you will see what I'm talking about.

>Would you believe that one
>printed circuit card, 4 in by 6 in, was needed just to implement 4
>flip-flops using descrete components.

That's not at all strange for the late 1960s. Integrated circuits
weren't there to use, and had only begun to be Mil Specced.
Those were new from Texas Instruments and still the old DTL or
Diode-Transistor-Logic.

The IBM 360 and RCA Spectra 70 used discrete-transistor PCBs
in the 1970s. IBM didn't go into TTL ICs in a large way until the
IBM 370 VM and production starting around 1975.

>Each component, yes even a carbon
>composition resistor, had a serial number on it. Why? So it could be
>traced back to the lot from it which it had been selected if it failed.
>And boy, did those components have to be reliable! So that's why the
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>dollars! I almost fell out of my chair! And now you can buy stuff like
>that, surplus, for just pennies on the dollar...and with their strange
>markings.

I'm going to challenge the veracity of that claim due to "having been
there, done that," and only seeing that in NASA electronics.

Also, I have yet to see any "surplus" spacecraft, including the
engineering and test models that never flew.

Back in 1974 I and a co-worker were stuck in Galveston, TX, for an
RCA Corporation field test. We visited the Manned Space Flight
Center in nearby Clear Lake and did a walking tour on a Sunday,
unescorted as was the norm on Sundays there. I wanted to show
the friend the Solar Wind Spectrometer instrument built for the
ALSEP (Apollo Lunar Surface Experiment Package) in 1967. I had
handled all of the SWSs when they were built. All of the ALSEP
modules - except the SWS - were arranged around the "left-over"
Landing and Ascent stages in the lobby. I snagged a docent and
asked about the "missing" instrument. She went off and returned,
said "sorry, it is still being used in a lab experiment." Seven years
later and it was still working...after having gone through some tough
environmental testing on earth.

NASA manned or unmanned electronics is subject to the maximum
in traceability. Military fielded electronics has had traceability
limited to specific lots identified through records and specified
percentage sampling tests on those lots. Samples may be tested
to destruction depending on the Mil Specification. All that TESTING
effort is what drives the parts cost up AND having to package spares

in extra-special protection envelopes and containers since they may be sitting waiting in some terrible environment somewhere in the world. World War 2 production and logistics taught the U.S. military much about needing spares and how to ship and store everything. USA has always been darn good about logistics and supply and has been successful at it.

To those folks who want to sneer at "military intelligence," fine. Nobody is forcing them to like military electronics or the military. Let them build things for room-temperature environments using surplus CB radio parts or those from TV sets. However, when those also sneer at little things like nomenclature about high quality stuff available surplus at cut rate, it does warrant a strong response.

Roy Lewallen had the succinct response. :-)

Len Anderson
retired (from regular hours) electronic engineer person

1949. Re: Kemet mil-spec cap ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-11 04:04:07 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <6bjv405i8h6a4tgsa3stfh4d49i1p9620b@4ax.com>
Source record: 27936
Cross-posted to: sci.electronics.components,rec.radio.amateur.homebrew,sci.electronics.repair

On Tue, 09 Mar 2004 19:59:19 -0800 Roy Lewallen <w7el@eznec.com>
wrote:

>Jim Adney wrote:
>> . . .
>> So I still don't think it's too much to ask that the most important
>> data be printed out separately.
>>
>> Obviously, I don't tend to think like the military....

>While you've got a legitimate point, you've got to realize the function
>of the part number. If you're a technician servicing a piece of military
>gear, you replace a 20035942 *ONLY* with a 20035942, not *ANY* other
>capacitor, regardless of its value. To order a replacement, you put in a
>requisition for a 20035942. Now, it's vital to you that the capacitors
>in the stock bin or coming in from the supply system have 20035942
>printed on them, but it's not important that the value is. The
>technician can find the value in the parts list in the manual and likely
>on the schematic.

If I'm that tech, how do I correlate that p/n with this cap on the
schematic? Does the schematic have both the value AND the p/n on it?

I understand your point about using the exact replacement, but I don't
see why a part should not have BOTH sets of data. To me, that seems
like it adds a lot of value to the part.

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA

1950. Re: Kemet mil-spec cap ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-11 08:43:21 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <10509lbm6k4hm47@corp.supernews.com>
Source record: 27937
Cross-posted to: sci.electronics.components,rec.radio.amateur.homebrew,sci.electronics.repair

Jim Adney wrote:
>
> If I'm that tech, how do I correlate that p/n with this cap on the
> schematic? Does the schematic have both the value AND the p/n on it?
>
> I understand your point about using the exact replacement, but I don't
> see why a part should not have BOTH sets of data. To me, that seems
> like it adds a lot of value to the part.
>
> -
> --
> Jim Adney jadney@vwtype3.org
> Madison, WI 53711 USA
> --

Typically, the schematic will identify the part by "circuit number", say C143 (and might or might not show the value), and it'll be on page A4B3, which is the schematic for board B3 in larger assembly A4. In the same manual, there'll be a parts list for A4B3, where you can find the description of C143, along with its part number. It would certainly include the value, type, and probably the tolerance, which are important to know when troubleshooting. Sometimes it'll tell a little more, if there's something particularly unusual about the part. But the full description of that part #20035942 only appears on a document that's typically many pages long and fully describes its specifications. There might be 100 different part numbers for 4.7 uF, 10%, 50 volt tantalum capacitors, each with different specifications for reliability testing, temperature range, ESR, mechanical lead strength, vibration tolerance, tada, tada, tada. They are *NOT* interchangeable in the military or commercial environment. Substitution could result in failure at a critical time or place with incredibly expensive, disastrous, or fatal consequences.

When replacing the part, the only thing that's important to the technician is whether the replacement has the right part number. If it doesn't, the part doesn't go in, regardless of what its capacitance value might be.

Yep, stamping the value on the capacitor would undoubtedly add value to the part for you and me. But again, the military just wasn't thinking of us when it set up its stock system.

Roy Lewallen, W7EL

1951. Re: CalTech amp in Jan/Feb QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-11 11:37:40 UTC
From: John LeRoy <w4jkl@qsl.net>
Message-ID: <7aY3c.70334$rB4.38596@bignews6.bellsouth.net>
Source record: 27938

I haven't built it yet, but got some copper tape for the coils from Ken gratis. Trying to figure out how to reproduce the board layout. Maybe just try an iron-on. How far have you got?
73,
John W4JKL

1952. Re: Kemet mil-spec cap ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-11 14:05:04 UTC
From: Al <no.spam@here.com>
Message-ID: <no.spam-5BF10F.09050611032004@news.verizon.net>
Source record: 27939

In article <20040310211202.29660.00003382@mb-m24.aol.com>,
averyfineman@aol.com (Avery Fineman) wrote:

> In article <no.spam-7A56EB.15195510032004@news.verizon.net>, Al
> <no.spam@here.com> writes:
>
<big snip>
> >Each component, yes even a carbon
> >composition resistor, had a serial number on it. Why? So it could be
> >traced back to the lot from it which it had been selected if it failed.

>
> I'm going to challenge the veracity of that claim due to "having been
> there, done that," and only seeing that in NASA electronics.

Think ICBM with its ground support system.

Al

--
There's never enough time to do it right the first time.......

1953. Ameco AC-1 problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-11 18:40:26 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BC761CCA.1BE3%outhouse@midcoast.com>
Source record: 27940

I recently put together the old AC-1 tube transmitter for the 40 m band.
And it works, kind of.

It oscillates nicely but does not have any power.
I know, it is not supposed to have much power but this one is weaker than
weak, the output couldn't drive any antenna.

I was wondering if there are AC-1 owners/builders around here who could
suggest a few things to try, who are knowlegable about this thing.

73 Uwe

1954. Re: Ameco AC-1 problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-11 19:26:11 UTC
From: troglodite@aol.com
Message-ID: <20040311142611.20632.00001383@mb-m28.aol.com>
Source record: 27941

>It oscillates nicely but does not have any power.
>I know, it is not supposed to have much power but this one is weaker than
>weak, the output couldn't drive any antenna.
>
>I was wondering if there are AC-1 owners/builders around here who could
>suggest a few things to try, who are knowlegable about this thing.

Did you do any voltage or current measurements? While I haven't played with a real AC-1, I've built many similar 6V6 single tube transmitters. I have the circuit for the AC-1, and it looks pretty similar to some I've built. First thing to do is measure the B+ to the plate and screen. Next, open the plate feed where it connects to the filter capacitor and insert a milliameter. With the "load" capacitor at maximum, adjust the "tune" capacitor for minimum current. Take a set of readings and get back to me.

Doug Moore KB9TMY (Formerly K6HWY)

1955. Adding components with Ansoft Designer SV

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-11 20:29:11 UTC
From: Peter Bolch <peter.bolch@t-online.de>
Message-ID: <c2qi7j$t12$03$1@news.t-online.com>
Source record: 27942

Hi,

I need to add some 2 port components (Mini Circuits GALI MMICs) to the Designer SV user or personal library. Cloning one of the MMICs in the syslib was easy but I have problems with all the rest. For instance: Do I have to type in the name of the external .s2p file in the in the data source field ? What do I have to type in the properities window? What is the syntax of the CircuitNetList line? The help file is not too comprehensive.

Any ideas?

Thanks

Peter

1956. Re: One Tube Superhet

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-11 23:30:38 UTC
From: dougwix@aol.com
Message-ID: <20040311183038.22770.00001200@mb-m10.aol.com>
Source record: 27943

Wow, nice

1957. Re: Kemet mil-spec cap ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-11 23:43:14 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403111543.439b1219@posting.google.com>
Source record: 27944
Cross-posted to: sci.electronics.components,rec.radio.amateur.homebrew,sci.electronics.repair

In fact, it's becoming much less common to find parts in commercial equipment with only the OEM user's part number rather than the manufacturer's PN on them. Partly this is being driven by contract manufacturing of the boards, but it was a trend even before CM became so common, in my experience.

Roy's comments about military techs are slightly idealistic, if I relate things to my personal experience some years ago. My shop supervisor at a remote site quickly learned to trust my judgement in finding ways to get things repaired and functioning reliably when parts simply weren't available. When it comes to a decision between completing a critical mission using a part that gets you through the mission, and waiting six months for a part, guess which wins. You can find info about some of that sort of thing on the NASA web site. Astronauts don't wait for delivery of XPQ1453762 if their lives (or even an expensive experiment) can be saved by using something on hand. Clearly, you'd prefer to use the exact part specified, or a documented replacement, but there are lots of times when waiting for that would be very poor judgement. (Darwin award candidates??)

OTOH, do NOT expect modern parts to be fully labeled. Don't expect 0.1% SMT resistors to have anything on them telling you that they are 0.1%. Don't expect 0603 and smaller resistors and capacitors to have ANY marking, though some do. Don't expect SOT-23 and SC-70 parts to have anything but a simple 2 or 3 character code on them. Some (most?) SMT tantalum cap manufacturers don't seem to put a marking on them that tells you which series they are (std ESR, low ESR, extra-low ESR, fused, mil-spec...).

And count your blessings that you're dealing with electronic parts, where labelling with the value is pretty common. That's not the case with most mechanical parts, for example. Would you expect Honda pistons to fit any Toyota engines? Have you ever seen ANY springs labelled with their spring constant, let alone any of their other parameters? Most aren't even labelled with a part number.

Finally, there IS a reason that schematics don't always have values or manufacturer's part numbers on them, or even house part numbers, but only a reference designator. That's because values (and therefore the part numbers) may well change over time. It's a lot easier and less error-prone to maintain only one changing document: the material list used to build the board. Not everyone agrees with that, and in fact I do prefer to have values and mfgr's part numbers on my schematics.

Cheers,
Tom

Jim Adney <jadney@vwtype3.org> wrote in message
news:<6bjv405i8h6a4tgsa3stfh4d49i1p9620b@4ax.com>...
> On Tue, 09 Mar 2004 19:59:19 -0800 Roy Lewallen <w7el@eznec.com>
> wrote:
>
> >Jim Adney wrote:
> >> . . .
> >> So I still don't think it's too much to ask that the most important
> >> data be printed out separately.
> >>
> >> Obviously, I don't tend to think like the military....
>
> >While you've got a legitimate point, you've got to realize the function
> >of the part number. If you're a technician servicing a piece of military
> >gear, you replace a 20035942 *ONLY* with a 20035942, not *ANY* other
> >capacitor, regardless of its value. To order a replacement, you put in a
> >requisition for a 20035942. Now, it's vital to you that the capacitors
> >in the stock bin or coming in from the supply system have 20035942
> >printed on them, but it's not important that the value is. The
> >technician can find the value in the parts list in the manual and likely
> >on the schematic.
>
> If I'm that tech, how do I correlate that p/n with this cap on the
> schematic? Does the schematic have both the value AND the p/n on it?
>
> I understand your point about using the exact replacement, but I don't
> see why a part should not have BOTH sets of data. To me, that seems
> like it adds a lot of value to the part.
>
> -
> ---
> Jim Adney jadney@vwtype3.org
> Madison, WI 53711 USA
> ---

1958. Re: Ameco AC-1 problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 00:25:47 UTC
From: n2ey@aol.comSPAMNO
Message-ID: <20040311192547.00545.00004766@mb-m02.aol.com>
Source record: 27945

In article <BC761CCA.1BE3%outhouse@midcoast.com>, Uwe <outhouse@midcoast.com>
writes:

>I recently put together the old AC-1 tube transmitter for the 40 m band.

From a kit, or from your own collection of parts?

>It oscillates nicely but does not have any power.
>I know, it is not supposed to have much power but this one is weaker than
>weak, the output couldn't drive any antenna.

How are you tuning it up and measuring the output power?
>
>I was wondering if there are AC-1 owners/builders around here who could
>suggest a few things to try, who are knowlegable about this thing.
>
First thing is the voltages and currents, as already suggested. Then there's
the size of the coil and your tuneup technique.

What sort of load do you have connected to the output?

73 de Jim, N2EY

1959. Microwave PIN switch

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 00:30:16 UTC
From: "owen.home" <owen.home@ntlworld.com>
Message-ID: <gw74c.366$p%6.280@newsfe2-gui.server.ntli.net>
Source record: 27946

Help
I've got some HP 33123A, SPST PIN switches rated 100MHz -15GHz, they aren't in my HP catalogue and I can't find any info about them. I specifically need to know how to drive them and hope that I can switch them at a 1KHz rate to give me modulated test signals, they are a small rectangular box with 3 SMAs.
Thanks in advance for any information.
Thanks
John
MW1FGQ

1960. Re: Ameco AC-1 problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 00:38:43 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BC7670C2.1CAB%outhouse@midcoast.com>
Source record: 27797

Doug, thank you soo much for your email, you just fixed my transmitter.
Well, sort of.

As I tried to do what you had suggested I noticed that someone (I could
never have done such a thing) had connected the 18k resistor (which is
connected to grid # 2 on one end) on the wrong end of the choke.
I guess that choked it.

Now we don't just have oscillations, there is even a little bite to it.

I am relatively new to all this and I am just putting together the necessary
equipment. So a 50 resistor serves as my dummy load and a meter connected to
the dummy load indicates around 10 volts RMS. If I did my homework that
would indicate around 2 watt output. All this at B+ of 200v and an anode
current of about 35mA (I am running the transmitter off an adjustable bench
tube power supply at this point).

Does all this compare with the numbers you get with your transmitter??
I will need to build a power supply for the final version and would be
interested to know what you use for B+. In order to get 5 Watts I would have
to crank up the B+ quite a bit.

Actually I don't care at this point since I am still practicing for my code
exam, so I can't even use the transmitter right now.

How do you monitor your transmitting tone with a device like this.

Doug, thanks again, I am quite happy now

Uwe

KB1JOW

in article 20040311142611.20632.00001383@mb-m28.aol.com, Troglodite at
troglodite@aol.com wrote on 3/11/04 14:26:

>> It oscillates nicely but does not have any power.
>> I know, it is not supposed to have much power but this one is weaker than
>> weak, the output couldn't drive any antenna.
>>
>> I was wondering if there are AC-1 owners/builders around here who could
>> suggest a few things to try, who are knowlegable about this thing.
>
> Did you do any voltage or current measurements? While I haven't played with a
> real AC-1, I've built many similar 6V6 single tube transmitters. I have the
> circuit for the AC-1, and it looks pretty similar to some I've built. First
> thing to do is measure the B+ to the plate and screen. Next, open the plate
> feed where it connects to the filter capacitor and insert a milliameter. With

> the "load" capacitor at maximum, adjust the "tune" capacitor for minimum
> current. Take a set of readings and get back to me.
>
> Doug Moore KB9TMY (Formerly K6HWY)
>

1961. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 01:43:37 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <De84c.23197$xL3.20724@bignews1.bellsouth.net>
Source record: 27798

Avery Fineman wrote:
> In article <104pjm15vbh3ca1@corp.supernews.com>, Dennis <Howdy
> Doody@howdydoody.net> writes:
>
>
>>Serious question. What does "73" mean?
>>
>>I have a stack of "73"mags. I'm not a ham however.
>>If I was, I of course would know.
>>
>>Anybody? I know it's a stupid question, but I don't know.
>
>
> After 1844 (the year of the first commercial telegraph service in the
> USA, Baltimore, MD to Washington, DC), the blazing speed of the
> early electromechanical sounders made it necessary for
> commercial telegraphers to to use abbreviations for standard
> phrases in telegrams. It gave telegraphers a chance to send more
> telegrams during a workday, increase their profits, etc., etc.
>
> A whole bunch of different two-number sub-codes were invented
> and used. Few survive to today since morse codes have survived
> only in amateur radio.
>
> One of the enduring sub-codes is "73" meaning "Best regards."
> Hams use it on voice, as well. It has become traditional jargon.
>
> Morse code did NOT begin as the character = <dot-dash group>
> but was originally ALL numbers! Morse got a financial and lab
> mentor in railroad heir Alfred Vail who is reported to have suggested
> a change from the all-number code to one where each letter,
> number, and common punctuation mark has a unique dot-dash
> group. This latter improvement, along with a way to increase the
> distance of a landline by using a "relay" of an electromagnet whose
> magnetically-coupled switch substituted for a telegrapher's key in
> an unmanned telegraph line relay station. Up to three such
> "relays" could be used on a wired telegraph circuit. That may or
> may not be the etymological origin of the word "relay" as the
> component we know today.
>
> The final version of morse code coding still doesn't allow much real
> speed in communication so a number of abbreviations were used as
> well as telegraphers' own jargon. One of those latter was the "R"
> sent as or after simple queries, meaning "okay?" or "okay"

> respectively. The dit-dah-dit of "R" has a nice little pattern to it and
> is intuitive for that. It continued on into radio after 1896..."R" meaning
> "okay" or "all right." With WW2's widespread use of radio of all kinds,
> operators on voice followed suit with the phonetic alphabet "R" or
> "Roger." "Roger" as an affirmative caught on and became common
> jargon on voice. In spoken language it has found its own niche in
> military use exemplified by "roger that!" meaning very affirmative. :-)
>
> "Q codes" are an example of three-letter sub-codes to mean whole
> phrases, either as queries (followed by a question mark) or as
> responses (followed by answer information). Those came about in
> radio since the letter "Q" was seldom used in English words...and
> the transistor hadn't been invented yet. :-) "QSY" was a query as
> to the exact frequency of a station (with spark transmitters that was
> more of a guess) but stayed around until WW2 when it was used on
> voice and teleprinter as a command to change frequency. "QSY
> Frisco George to 6885" would be an abbreviated command on either
> a telephone or teleprinter military radio order wire in the 1950s.
> "QTH" is another that stuck around in other radio services referring
> to a location.
>
> Of course there are the "10 codes" used by the various police in
> the USA during the late 1940s and 1950s. Dirty, Evil CBers
> picked up on those and used them as short-form jargon, much to
> the outrage of licensed amateurs, most of whom where not born in
> 1958 when CB on 11 meters was created. :-)
>
Some of the CB'ers (and quite a few of the hams on some of the 2 meter
repeaters) in NYC were using the un-offical 10 code of 10-100.
It meant, I have to go to the bathroom.

1962. Re: Kemet mil-spec cap ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 01:46:51 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <945250pa3iii8qo2ujapcaeki2v2aq57fv@4ax.com>
Source record: 27799
Cross-posted to: sci.electronics.components,rec.radio.amateur.homebrew,sci.electronics.repair

On Thu, 11 Mar 2004 00:43:21 -0800 Roy Lewallen <w7el@eznec.com>
wrote:

>Yep, stamping the value on the capacitor would undoubtedly add value to
>the part for you and me. But again, the military just wasn't thinking of
>us when it set up its stock system.

I was thinking of the value it would have to the tech, in helping him
to make sure that the part he was looking at on the schematic and the
part that he was replacing in the circuit were the same item.

If he has to trace the item from the schematic (C437) to the parts
list (M390009/xxxx) to the chassis (M390009/xxxx) that's an extra step
where time is wasted and a mistake could be made. Both would be
counterproductive, in any environment.

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA

1963. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 03:52:24 UTC
From: Gerry Wheeler KG4NBB <gwheelerz@qolpublishing.com>
Message-ID: <c2rc5oecg1@xuxa.iecc.com>
Source record: 27800
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

On Tue, 09 Mar 2004 16:46:54 +0000, Dennis wrote:

> In article <c2jdpg$f9h$1@xuxa.iecc.com>, dragon40@shaw.ca says...
>
> Yes, I have one of these clocks also. The thing is, these clocks are set
> 6 times in a 24hr perod by the WWVB signal. The rest of the time the
> time base is an ordinary crystal.

Mine is set only once per day, sometime between midnight and 4 am.

I was under the impression that the reason this was done is that the
signal is too weak to be decoded during other times of the day. In fact, I
have some (admittedly very inexpensive) atomic clocks that have *never*
decoded the signal here in Florida.
--
Gerry Wheeler KG4NBB
Naples, FL
N26.28 W081.76

1964. Re: vfo question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 04:39:03 UTC
From: cooperjim@aol.com
Message-ID: <20040311233903.25000.00001320@mb-m07.aol.com>
Source record: 27801

> external vfo for my t-60 transmitter

I used an Heathkit HG-10B with my T-60. It worked very well.
73
Jim NE6O

1965. Homebrew Antenna ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 04:59:05 UTC
From: Bob <nubob5001@yahoo.com>
Message-ID: <hsb4c.6421$n37.520554@read2.cgocable.net>
Source record: 27802

Hi,
What is the best homebrew antenna our there to make? I have a 50ft tower that I have had a 22ft something omni telescoping aluminum antenna with some as long as possible ground planes (4). It works good on most bands, I have a good antenna tuner. I have to bring it down and fix it so wondering what alternatives are available to throw back up. I like to keep the omni style. What would be a practical length for the whip and or is there a copper wire style antenna that would perform better? Thanks for opinions!!!

1966. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 10:59:26 UTC
From: Brian <brianNADA@NOiquestSPAM.net>
Message-ID: <iKg4c.16579$%06.11954@newsread2.news.pas.earthlink.net>
Source record: 27803

We sign with SK at the end of a CW QSO. Not VA.

SK: ... _._

VA: ..._ ._

They sound very similar.

73 is used because of the way it sounds....

dah dah di di dit di di dit dah dah

dit dit

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:fl0q409et9ocdj1qpoha0l6ergnv71amhg@4ax.com...
> On Mon, 08 Mar 2004 15:29:35 -0600, Dennis <Howdy
> Doody@howdydoody.net> wrote:
>
>
> > Yes, but why "73", why not "74", or even "69".
>
> When keyed in Morse code it has a certain characterstic 'ring' to it
> that few other two-number combinations do. Another one is "VA"
> (message ends). Keen CWers will no doubt be able to think of a few
> more that fall into that category...
> --
>
> The BBC: Licensed at public expense to spread lies.

1967. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 12:16:48 UTC
From: n2ey@aol.comSPAMNO
Message-ID: <20040312071648.22081.00004504@mb-m17.aol.com>
Source record: 27804

In article <iKg4c.16579$%06.11954@newsread2.news.pas.earthlink.net>, "Brian" <brianNADA@NOiquestSPAM.net> writes:

>We sign with SK at the end of a CW QSO. Not VA.

>
>SK: ... _._
>
>VA: ..._ ._
>
>They sound very similar.

Actually, the letters in prosigns are run together:

...-.-

didididahdidah

That's why you see the SK or VA written with a bar overline in books on the subject.

It's actually a contracted version of the American Morse "30" meaning "end of work, no more to follow".

>73 is used because of the way it sounds....
>
>dah dah di di dit di di dit dah dah
>

Except it doesn't sound that way in American Morse, where its use originated. That rhythm is one reason it stayed popular among radio operators but the true origin is the old land wire number code lists.

73 de Jim, N2EY

1968. Re: Ameco AC-1 problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 13:36:31 UTC
From: troglodite@aol.com
Message-ID: <20040312083631.06601.00001267@mb-m25.aol.com>
Source record: 27805

>So a 50 resistor serves as my dummy load and a meter connected to
>the dummy load indicates around 10 volts RMS. If I did my homework that
>would indicate around 2 watt output. All this at B+ of 200v and an anode
>current of about 35mA (I am running the transmitter off an adjustable bench
>tube power supply at this point).
>
>Does all this compare with the numbers you get with your transmitter??
>I will need to build a power supply for the final version and would be
>interested to know what you use for B+. In order to get 5 Watts I would have
>to crank up the B+ quite a bit.
>
>Actually I don't care at this point since I am still practicing for my code
>exam, so I can't even use the transmitter right now.
>
>How do you monitor your transmitting tone with a device like this.

I run my 6V6's at about 325 volts on the plate, 250 on the screen. The plate is loaded to about 40ma, which is about 13 watts input. You can push it beyond this, but there's really no point since you have to quadruple your power to gain one S unit on the receiving end. You'll get about 8 watts out which is fine. If you want something heftier, you can go to a 6L6, 807 or 6146 tube. There is a compromise with single tube transmitters though, as the power goes up they tend to chirp, that is, the frequency slides a bit as they are keyed. It's not objectionable on the 6V6 transmitters, which is why I favor this power level.

I started out in 1954 with a surplus ARC-5 receiver and a simple 6V6 transmitter. With it I gained code proficiency and managed to work 28 states before my Novice licence expired. (They were only good for a year back then.)

For monitoring, you can just use your receiver with the antenna disconnected, or you can construct any number of monitor devices which you will find in the ARRL handbook. You can get more sophisticated but you don't have to. There is a special satisfaction in communicating with very simple equipment.

Doug Moore KB9TMY

1969. Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 13:56:10 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <9nf350hjb0c38qibba1155fnt50v1e3s30@4ax.com>
Source record: 27806
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Hi all,

Is there some black magic required to get higher order harmonics out
of an oscillator?
I'm only trying to get 17.2Mhz out of a 3.44Mhz source and am thus far
failing spectacularly. I've tried everything I can think of so far to
no avail. All I can get apart from the fundamental is a strong third
harmonic on 10.32Mhz, regardless of what I tune for. I've tried
passing the osc output through two successive inverter gates to
sharpen it up, but still nothing beyond the third appears after tuned
amplification for the fifth. I no longer have a spectrum analyser so
can't check for the presence of a decent comb of harmonics at the
input to the multiplier stage but can only assume the fifth is well
down in the mush for some reason. I could change the inverters for
schmitt triggers and gain a couple of nS but can't see that making
enough difference. What about sticking a varactor in there somewhere?
Would its non-linearity assist or are they only any good for even
order harmonics?
Any suggestions, please. I'm stumped! :(
--

The BBC: Licensed at public expense to spread lies.

1970. Money in your mailbox...Only $6 to start!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 14:05:13 UTC
From: Susan Doyle <skwod5@nbnet.nb.ca>
Message-ID: <tsj4c.115331$IF6.3728508@ursa-nb00s0.nbnet.nb.ca>
Source record: 27807

HOW TO MAKE EASY MONEY!!!!!!!!
: This seems to really have potential. This is the way the original post appeared when I first found it. Read it all then decide for yourself. It works for me! I found this on a bulletin board and decided to try it. A little while back, I was browsing through newsgroups, just like you are now, and came across an article similar to this that said you could make thousands of dollars within weeks with only an initial investment of $6.00! So I thought, "Yeah right, this must be a scam", but like most of us, I was curious, so I kept reading. Even though the investment was a measly $6, I had three questions that needed to be answered before I could get involved in this sort of thing. 1. IS THIS REALLY LEGAL? I called a lawyer first. The lawyer was a little sceptical that I would actually make any CASH but he said it WAS LEGAL if I wanted to try it. I told him it sounded a lot like a chain letter but the details of the system (SEE BELOW) actually made it a legitimate legal business. 2. IS OK WITH THE POST OFFICE OR IS IT MAIL FRAUD? I called them: 1-800-725-2161 and they confirmed THIS IS ABSOLUTELY LEGAL! (See 18, h sections1302 NS 1341 of Postal Lottery Laws). This clarifies the program of collecting names and addresses for a mailing list. 3. IS IT RIGHT? Well, everyone who sends me a buck has a good chance of getting A LOT of CASH ... a much better chance than buying a lottery ticket!!! 4. WHAT IS THE BUSINESS? You are in the business of collecting mailing lists and recruiting new list developers. These questions answered, I decided to proceed. The instructions said that you have to send $1.00 to each of the 6 names and address stated in the article. You then place your own name and address in the bottom of the list at #6, and post the article in at least 300 newsgroups. (There are thousands) No catch, that was it. So, I invested the measly $6.00. Well GUESS WHAT!! Within 7 days, I started getting money in the mail! I was shocked! I figured it would end soon, but the money just kept coming in. In my first week, I made about $25.00. By the end of the second week I had made a total of over $1,000! In the third week I had over $10,000.00 and it's still growing. This is now my fourth week and I have made a total of just over $42,000.00 and it's still coming in rapidly. It's certainly worth $6.00, and 6 stamps, I have spent more than that on the lottery!! Let me tell you how this works and most importantly, why it works. Also, make sure you print a copy of this article NOW, so you can get the information off of it as you need it. It seems likely to me that if you follow the directions exactly, that you will start making more money than you thought possible by doing something so easy! Suggestion: Read this entire message carefully! (print it out or download it.) Follow the simple directions and watch the money come in! It's easy. It's legal. And, your investment is only $6.00 (Plus postage) IMPORTANT: This is not a rip-off; it is not indecent; it is not illegal; and it is virtually no risk - it really works!!!! If all of the following instructions are adhered to, you will receive extraordinary dividends. PLEASE NOTE: Please follow these directions

EXACTLY, and $50,000 or more can be yours in 20 to 60 days. This program remains successful because of the honesty and integrity of the participants. Please continue its success by carefully adhering to the instructions. You will now become part of the Mail Order business. In this business your product is not solid and tangible, it's a service. You are in the business of developing Mailing Lists. Many large corporations are happy to pay big bucks for quality lists. However, the money made from the mailing lists is secondary to the income which is made from people like you and me asking to be included in that list. Here are the 4 easy steps to success: STEP 1: Get 6 separate pieces of paper and write the following on each piece of paper "PLEASE PUT ME ON YOUR MAILING LIST include your mailing address, the date and your signature." Now get 6 US $1.00 bills and place ONE inside EACH of the 6 pieces of paper so the bill will not be seen through the envelope (to prevent thievery). Next, place one paper in each of the 6 envelopes and seal them. You should now have 6 sealed envelopes, each with a piece of paper stating the above phrase, your name and address, and a $1.00 bill. What you are doing is creating a service. THIS IS ABSOLUTELY LEGAL! You are requesting a legitimate service and you are paying for it! Like most of us I was a little skeptical and a little worried about the legal aspects of it all. So I checked it out with the U.S. Post Office (1-800-725-2161) and they confirmed that it is indeed legal! Mail the 6 envelopes to the following addresses:
: 1 .)CRISTIAN MURO 1200 brookside dr, san pablo,CA 94806,USA
: 2 .)JOHNATHAN WOOLFSTON 1010 AVE, BROOKLYN, NY 11230, USA
: 3 .)ADRIAN GUTZMORE, FLAT9, 4BEECH TREE BANK, PRESTWICH, MANCHESTER, M25 1BH, UNITED KINGDOM
: 4 .) SADIA GHAZAL,H-NO.1237,ST NO-10, SECTOR I-10/2, ISLAMABAD, PAKISTAN
: 5 .)MICHAEL CRIST, 8294 WHITERIDGE CIRCLE NW, NORTH CANTON, OH 44720, USA
: 6 .) Susan Doyle 16 Clinch St., St. George NB, E5C 3C8 Canada
: STEP 2: Now take the #1 name off the list that you see above, move the other names up (6 becomes 5, 5 becomes 4, etc...) and add YOUR Name as number 6 on the list.
: STEP 3: Change anything you need to, but try to keep this article as close to original as possible. Now, post your amended article to at least 300 newsgroups. (I think there are close to 32,000 groups) All you need is 300, but remember, the more you post, the more money you make! This is perfectly legal! If you have any doubts, refer to Title 18 Sec. 1302 & 1341 of the Postal lottery laws. PLEASE REMEMBER that this program remains successful because of the honesty and integrity of the participants and by their carefully adhering to the directions. Look at it this way. If you are of integrity, the program will continue and the money that so many others have received will come your way.
: NOTE: You want to retain every name and address sent to you, either on a computer or hard copy and keep the notes people send you. This VERIFIES that you are truly providing a service. (Also, it might be a good idea to wrap the $1 bill in dark paper to reduce the risk of mail theft.) So, as each post is downloaded and the directions carefully followed, six members will be reimbursed for their participation as a List Developer with one dollar each. Your name will move up the list geometrically so that when your name reaches the #1 position you will be receiving thousands of dollars in

CASH!!! What an opportunity for only $6.00 ($1.00 for each of the first six people listed above) Send it now, add your own name to the list and you're in business!
: DIRECTIONS FOR HOW TO POST TO NEWSGROUPS---------- STEP 1) You do not need to re-type this entire letter to do your own posting. Simply put your cursor at the beginning of this letter and drag your cursor to the bottom of this document, and select 'copy' from the edit menu. This will copy the entire letter into the computer's memory
: STEP 2) Open a blank 'notepad' file and place your cursor at the top of the blank page. From the 'edit' menu select 'paste'. This will paste a copy of the letter into notepad so that you can add your name to the lis
: STEP 3) Save your new notepad file as a text file. If you want to do your postings in different settings, you'll always have this file to go back to.
: STEP 4) Use Netscape or Internet explorer and try searching for various newsgroups (on-line forums, message boards, chat sites, discussions.) STEP 5) Visit these message boards and post this article as a new message by highlighting the text of this letter and selecting paste from the edit menu. Fill in the Subject, this will be the header that everyone sees as they scroll through the list of postings in a particular group, click the post message button. You're done with your first one! Congratulations...THAT'S IT! All you have to do is jump to different newsgroups and post away, after you get the hang of it, it will take about 30 seconds for each newsgroup! **REMEMBER, THE MORE NEWSGROUPS YOU POST IN, THE MORE MONEY YOU WILL MAKE!! BUT YOU HAVE TO POST A MINIMUM OF 300** That's it! You will begin receiving money from around the world within days! You may eventually want to rent a P.O. Box due to the large amount.of money you'll be getting. VIEW THIS SITE ITS AMAZING!!! http://extremepowerline.com/28088

1971. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 14:30:50 UTC
From: Tam/WB2TT <t-tammaru@c0mca$t.net>
Message-ID: <c2shiqnec1@xuxa.iecc.com>
Source record: 27808
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave

Dennis,

I don't know what you mean by ordinary crystal, but even.001% is not very good. You may want to look at high accuracy temperature compensated oscillators. Depending on where you live, you may actually be able to phase lock your oscillator to the WWB carrier. You would have to use a phase detector that does not pull you off to one side if you lose the signal. Also, the ~3.58MHz color subcarrier on some TV stations is locked to a cesium standard.

Tam/WB2TT
"Dennis" <Howdy.Doody@howdydoody.net> wrote in message
news:c2nubl$5c5$1@xuxa.iecc.com...
> In article <c2nejp$3c8$1@xuxa.iecc.com>, rhf-say-bye-bye@pacbell.net
says...
> >
> >
> >= = = tommyknocker <tomynokr@uucp.hell> wrote in message
> >= = = news:<c2lq9s$6tv$1@xuxa.iecc.com>...
> >> Dennis wrote:
> >>
> >> > In article <c2jdpg$f9h$1@xuxa.iecc.com>, dragon40@shaw.ca says...
> >> > >
> >> > >
> >> > >Dennis wrote:
> >> > >
> >> > >> HI,
> >> > >>
> >> > >> Does anybody have a circuit that will
> >> > >> decode the WWVB signal,and output to a clock
> >> > >> led circuit?
> >> > >>
> >> > >> TIA,
> >> > >>
> >> > >> Dennis
> >> > >>
> >> > >>
> >> > >>Hi,
> >> > >>Unless you want to have fun building a clock, there are many such
clocks
> >> > >>or watches out there. I wear a watch. Very accurate in time keeping.
> >> > >>Tony, VE6CGX
> >> > >

> >> >
> >> > Yes, I have one of these clocks also. The thing is, these clocks
> >> > are set 6 times in a 24hr perod by the WWVB signal. The rest of the
> >> > time the time base is an ordinary crystal. I want my clock to be
> >> > set on a more continous basis. This could only happen with the
> >> > continous decoding of the signal. This is how the "professional"
> >> > clocks, such as those made by Spectracom work.
> >> >
> >> > -Dennis
> >>
> >> You'll find that most of the schematics on the net for atomic clocks
are
> >> of the crystal variety-they set once or twice a day with WWVB and the
> >> rest of the time use a crystal. You'll have to do some digging to come
> >> up with something that does continuous decoding, but I'm sure it's out
> >> there.
> >>
> >
> >
> >TK,
> >
> >For a normal 'ordinary' Consumer Time Standard that is Accurate to
> >within a Tenth of Second: Every Minute; Every Hour; Every Day . . .
> >The above Time Synchronization Process is more than adequate.
> >
> >~ RHF
> >.
> >Yes, for the "normal", "ordinary" consumer what you say is true.
>
> Fortunately or unfortunately I don't fall into that catagory,
> when it comes to time and frequency. I've been fascinated by
> time & frequency for quite a while now.
>
> -Dennis
>
>
>
>

1972. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 14:35:45 UTC
From: mikea@mikea.ath.cx
Message-ID: <c2shs0uuo3@puck.litech.org>
Source record: 27809
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

In <9nf350hjb0c38qibba1155fnt50v1e3s30@4ax.com> (rec.radio.amateur.homebrew), Paul Burridge wrote:
> Hi all,

> Is there some black magic required to get higher order harmonics out
> of an oscillator?
> I'm only trying to get 17.2Mhz out of a 3.44Mhz source and am thus far
> failing spectacularly. I've tried everything I can think of so far to
> no avail. All I can get apart from the fundamental is a strong third
> harmonic on 10.32Mhz, regardless of what I tune for. I've tried
> passing the osc output through two successive inverter gates to
> sharpen it up, but still nothing beyond the third appears after tuned
> amplification for the fifth. I no longer have a spectrum analyser so
> can't check for the presence of a decent comb of harmonics at the
> input to the multiplier stage but can only assume the fifth is well
> down in the mush for some reason. I could change the inverters for
> schmitt triggers and gain a couple of nS but can't see that making
> enough difference. What about sticking a varactor in there somewhere?
> Would its non-linearity assist or are they only any good for even
> order harmonics?
> Any suggestions, please. I'm stumped! :(

There must be something killing the fifth harmonic, which should be present at (1/5) of the amplitude of the fundamental in a square wave. That's a pretty strong component.

If you can amplify the output of the source and then square it up sharply, the fifth harmonic ought to be pretty easy to extract. The larger the amplitude of that square wave, the larger the amplitude of the fifth harmonic, of course, so amplification is your friend here -- but you may want to shield very well indeed to keep other components out of places where they don't belong and may cause trouble.

Have a look at
<http://hyperphysics.phy-astr.gsu.edu/hbase/audio/geowv.html>
for a lot of stuff that you probably already know.

Best of luck, and please keep us posted.

--
Mike Andrews
mikea@mikea.ath.cx
Tired old sysadmin

1973. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 15:21:28 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c2skhorkn1@hercules.btinternet.com>
Source record: 27810
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

According to Fourier, at some mark-space ratios of a square wave certain harmonics may be missing from the spectrum.

Just generate a a train of very short sharp pulses from the oscillator and you will find all the harmonics are present allbeit with reducing amplitudes. A single transistor should do the job.

1974. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 15:27:05 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <dFk4c.16948$mM.122093@attbi_s02>
Source record: 27811
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

> > Is there some black magic required to get higher order harmonics out
> > of an oscillator?

No black magic, you just need to filter for the fifth harmonic. I'm extracting the 16th harmonic of 64 MHz out of a MMIC, and retuning the filter, can actually extract a little more 15th than 16th. You can generate a comb generator to do the job of generating large quantities of all harmonics, but for this simple of a job, it'd be overkill big time. Either make a better filter, amplify your fundamental more before filtering, (the 5 volt digital squarer ought to put out +17 dBm) or check the HP app note AN983 and take advantage of "filter gain".

W4ZCB

1975. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 15:32:23 UTC
From: Ian Bell <itb@yahoo.com>
Message-ID: <c2skt9$203u1k$2@ID-225948.news.uni-berlin.de>
Source record: 27812
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge wrote:

> Hi all,
>
> Is there some black magic required to get higher order harmonics out
> of an oscillator?
> I'm only trying to get 17.2Mhz out of a 3.44Mhz source and am thus far
> failing spectacularly. I've tried everything I can think of so far to
> no avail. All I can get apart from the fundamental is a strong third
> harmonic on 10.32Mhz, regardless of what I tune for.

In RF circles, the 'normal' way to do this would be a simple Class C amplifier with a collector load tuned to the fifth harmonic. In calls C, conduction only occurs for a small fraction of a cycle which produces a correspondingly higher proportion of higher harmonics than a square wave.

Ian

1976. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 16:08:15 UTC
From: John Woodgate <jmw@jmwa.demon.contraspam.yuk>
Message-ID: <q9aPZ1GvBeUAFwcK@jmwa.demon.co.uk>
Source record: 27813
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

I read in sci.electronics.design that Reg Edwards
<g4fgq.regp@ZZZbtinternet.com> wrote (in <c2skhorkn1@hercules.btintern
et.com>) about 'Extracting the 5th Harmonic', on Fri, 12 Mar 2004:
>According to Fourier, at some mark-space ratios of a square wave certain
>harmonics may be missing from the spectrum.

For a waveform like this (use Courier font):

```
_____
/ \ /
_____/ \____________/
```

with rise-time f, dwell time d, fall time r and period T, the harmonic
magnitudes are given by:

Cn = 2Aav{sinc(n[pi]f/T)}{sinc(n[pi][f+d]/T)}{sinc(n[pi][r-f]/T)},

where sinc(x)= {sin(x)}/x

There seems to be a number of opportunities for a harmonic to 'hide' in
a zero of that function.
--
Regards, John Woodgate, OOO - Own Opinions Only.
The good news is that nothing is compulsory.
The bad news is that everything is prohibited.
http://www.jmwa.demon.co.uk Also see http://www.isce.org.uk

1977. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 16:55:51 UTC
From: Bob Stephens <stephensyomamadigital@earthlink.net>
Message-ID: <mugb0a3kfxzx.93plax1g3f67$.dlg@40tude.net>
Source record: 27814
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Fri, 12 Mar 2004 16:08:15 +0000, John Woodgate wrote:

> where sinc(x)= {sin(x)}/x

I've never seen this terminology before. Is this standard math parlance or
is it something of your own?

Don't flame, I'm genuinely curious.

Bob

1978. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 17:15:46 UTC
From: Ben Bradley <ben_nospam_bradley@mindspring.example.com>
Message-ID: <12s35014t9hukqctr5sfdgnivsv3aq5m1u@4ax.com>
Source record: 27815
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

In rec.radio.amateur.homebrew,sci.electronics.design, Bob Stephens
<stephensyomamadigital@earthlink.net> wrote:

>On Fri, 12 Mar 2004 16:08:15 +0000, John Woodgate wrote:
>
>> where sinc(x)= {sin(x)}/x
>
>I've never seen this terminology before. Is this standard math parlance or
>is it something of your own?

You can google for it (Usenet or Web) and find it, I've seen it
used a good bit in signal processing and such.

>Don't flame, I'm genuinely curious.
>
>Bob

-----
http://mindspring.com/~benbradley

1979. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 17:25:59 UTC
From: mikea@mikea.ath.cx
Message-ID: <c2srr7$277$1@puck.litech.org>
Source record: 27816
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

In <12s35014t9hukqctr5sfdgnivsv3aq5m1u@4ax.com> (rec.radio.amateur.homebrew), Ben Bradley wrote:
> In rec.radio.amateur.homebrew,sci.electronics.design, Bob Stephens
> <stephensyomamadigital@earthlink.net> wrote:

> >On Fri, 12 Mar 2004 16:08:15 +0000, John Woodgate wrote:
> >
> >> where sinc(x)= {sin(x)}/x
> >
> >I've never seen this terminology before. Is this standard math parlance or
> >is it something of your own?

> You can google for it (Usenet or Web) and find it, I've seen it
> used a good bit in signal processing and such.

And it shows up in some math classes as well, though its main use is
in electronics. I suspect it showed up because the instructor wanted
to show a real-life example, which just happened to be -- electronics.

--
End-to-end connectivity is the "coin of the realm" for internet
operations. Use it wisely. You only control your end of it.

1980. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 17:57:24 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <4gt3501m5p9u1tq4daa9avhlu57gkl6lvr@4ax.com>
Source record: 27817
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Fri, 12 Mar 2004 16:08:15 +0000, John Woodgate
<jmw@jmwa.demon.contraspam.yuk> wrote:

>I read in sci.electronics.design that Reg Edwards
><g4fgq.regp@ZZZbtinternet.com> wrote (in <c2skhorkn1@hercules.btintern
>et.com>) about 'Extracting the 5th Harmonic', on Fri, 12 Mar 2004:
>>According to Fourier, at some mark-space ratios of a square wave certain
>>harmonics may be missing from the spectrum.
>
>
>For a waveform like this (use Courier font):
> _____
> / \ /
>_____/ ____________/
>
>with rise-time f, dwell time d, fall time r and period T, the harmonic
>magnitudes are given by:
>
>Cn = 2Aav{sinc(n[pi]f/T)}{sinc(n[pi][f+d]/T)}{sinc(n[pi][r-f]/T)},
>
>where sinc(x)= {sin(x)}/x
>
>There seems to be a number of opportunities for a harmonic to 'hide' in
>a zero of that function.

Great. So without a spectrum analyser there's no way to tell? If I
examine the output of the multiplier, it's very messy. There's a
dominant 3rd harmonic alright (my frequency counter resolves it
without difficulty) but the scope trace reveals a number of 'ghost
traces' of different frequencies and amplitudes co-incident with the
dominant trace. All rather confusing. I suppose the only answer is to
build Reg's band pass filter and stick it between the inverter output
and the multiplier input? <shrug>
--

The BBC: Licensed at public expense to spread lies.

1981. Re: Ameco AC-1 problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 18:03:15 UTC
From: N2EY@AOL.COM
Message-ID: <c2356669.0403121003.21505644@posting.google.com>
Source record: 27818

Uwe <outhouse@midcoast.com> wrote in message news:<BC7670C2.1CAB%outhouse@midcoast.com>...
> So a 50 resistor serves as my dummy load and a meter connected to
> the dummy load indicates around 10 volts RMS. If I did my homework that
> would indicate around 2 watt output.

E squared over R, yes, two watts is about right.

> All this at B+ of 200v and an anode
> current of about 35mA (I am running the transmitter off an adjustable bench
> tube power supply at this point).

Seven watts input, two watts output is a bit low. How are you
adjusting the controls?
>
> Does all this compare with the numbers you get with your transmitter??
> I will need to build a power supply for the final version and would be
> interested to know what you use for B+. In order to get 5 Watts I would have
> to crank up the B+ quite a bit.

IIRC that design called for 300 or 350 volts B+, which would work out
to 15 watts or so input. The output network is not optimized for 200
volts B+, and in addition the efficieny is better with more plate
voltage.

> Actually I don't care at this point since I am still practicing for my code
> exam, so I can't even use the transmitter right now.

What study methods are you using?
>
> How do you monitor your transmitting tone with a device like this.

Several ways:

1) Connect an audio oscillator to the key so that both it and the
transmitter are keyed at the same time. This can be a bit tricky
because the two circuits must not interact.

2) Listen to the transmitted signal on your receiver when
transmitting. This requires that you have a way of reducing the
receiver gain while transmitting, but not completely silencing the
receiver. What sort of receiver do you have to go with the
transmitter?

73 de Jim, N2EY

1982. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 18:21:03 UTC
From: Bob Stephens <stephensyomamadigital@earthlink.net>
Message-ID: <13cz47b6erwqy$.1uegqbcvjamtl.dlg@40tude.net>
Source record: 27819
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Fri, 12 Mar 2004 17:25:59 +0000 (UTC), Mike Andrews wrote:

> In <12s35014t9hukqctr5sfdgnivsv3aq5m1u@4ax.com> (rec.radio.amateur.homebrew), Ben Bradley wrote:
>> In rec.radio.amateur.homebrew,sci.electronics.design, Bob Stephens
>> <stephensyomamadigital@earthlink.net> wrote:
>
>>>On Fri, 12 Mar 2004 16:08:15 +0000, John Woodgate wrote:
>>>
>>>> where sinc(x)= {sin(x)}/x
>>>
>>>I've never seen this terminology before. Is this standard math parlance or
>>>is it something of your own?
>
>> You can google for it (Usenet or Web) and find it, I've seen it
>> used a good bit in signal processing and such.
>
> And it shows up in some math classes as well, though its main use is
> in electronics. I suspect it showed up because the instructor wanted
> to show a real-life example, which just happened to be -- electronics.

I've always seen it as 1/x sin(x) "one over ex sine ex". the hyperbolic sine function sinh is usually pronounced "Cinch"
So how do you pronounce sinc? "Sink ?"

1983. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 18:54:25 UTC
From: John Woodgate <jmw@jmwa.demon.contraspam.yuk>
Message-ID: <ZipzuJAhdgUAFw6h@jmwa.demon.co.uk>
Source record: 27823
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

I read in sci.electronics.design that Bob Stephens <stephensyomamadigita
l@earthlink.net> wrote (in <13cz47b6erwqy$.1uegqbcvjamtl.dlg@40tude.net>
) about 'Extracting the 5th Harmonic', on Fri, 12 Mar 2004:
>So how do you pronounce
>sinc? "Sink ?"

If you wish.
--
Regards, John Woodgate, OOO - Own Opinions Only.
The good news is that nothing is compulsory.
The bad news is that everything is prohibited.
http://www.jmwa.demon.co.uk Also see http://www.isce.org.uk

1984. Re: Device identification

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 19:46:05 UTC
From: Rv! <no@spam.here.thanks>
Message-ID: <1079120754.15693.0@lotis.uk.clara.net>
Source record: 27820

"Allodoxaphobia" <bit-bucket@config.com> wrote in message
news:slrnc4q147.2i5p.bit-bucket@localhost.config.com...
> On 8 Mar 2004 14:24:16 -0800, Fred hath writ:
> > Hi all,
> > is there a crossreference list for transistors such as C2827, C3405,
> > D553, D844 etc. I tried GOOGLE in various ways but got no positive
> > results.
>
> All those xistors are "2S"-yaa-daa-yaa-daa-yaa-daa.
> The Japanese for nomenclature each of those above
> then:
> 2SC2827,
> 2SC3405,
> 2SD553,
> 2SD844
> 2Setc. :-)
>

Also the prefix number tells you the amount of pins usually.
1N - 2 leg diode.
2S - 3 leg transistor like item.
etc.

1985. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 19:52:01 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <105456l62pp04ad@corp.supernews.com>
Source record: 27821
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Bob Stephens" <stephensyomamadigital@earthlink.net> wrote in message
news:13cz47b6erwqy$.1uegqbcvjamtl.dlg@40tude.net...
> On Fri, 12 Mar 2004 17:25:59 +0000 (UTC), Mike Andrews wrote:
>
> > In <12s35014t9hukqctr5sfdgnivsv3aq5m1u@4ax.com>
(rec.radio.amateur.homebrew), Ben Bradley wrote:
> >> In rec.radio.amateur.homebrew,sci.electronics.design, Bob Stephens
> >> <stephensyomamadigital@earthlink.net> wrote:
> > >
> > >>>On Fri, 12 Mar 2004 16:08:15 +0000, John Woodgate wrote:
> > >>>
> > >>>> where sinc(x)= {sin(x)}/x
> > >>>
> > >>>I've never seen this terminology before. Is this standard math parlance
or
> > >>>is it something of your own?
> > >
> > >> You can google for it (Usenet or Web) and find it, I've seen it
> > >> used a good bit in signal processing and such.
> > >
> > > And it shows up in some math classes as well, though its main use is
> > > in electronics. I suspect it showed up because the instructor wanted
> > > to show a real-life example, which just happened to be -- electronics.
>
> I've always seen it as 1/x sin(x) "one over ex sine ex". the hyperbolic
> sine function sinh is usually pronounced "Cinch"
> So how do you pronounce sinc? "Sink ?"

Yes, it's pronounced "sink", and it's quite common in signal processing.
You define it as being the _limit_ of sin(x)/x as x -> 0 because otherwise
it's undefined at zero, and all the mathematicians in the crowd will curse
at you for being yet another engineer who's treating math so casually.

1986. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 19:54:24 UTC
From: mikea@mikea.ath.cx
Message-ID: <c2t4hgaoc1@puck.litech.org>
Source record: 27822
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

In <105456l62pp04ad@corp.supernews.com> (rec.radio.amateur.homebrew), Tim Wescott wrote:

> Yes, it's pronounced "sink", and it's quite common in signal processing.
> You define it as being the _limit_ of sin(x)/x as x -> 0 because otherwise
> it's undefined at zero, and all the mathematicians in the crowd will curse
> at you for being yet another engineer who's treating math so casually.

That's not precisely true.

Some fraction of us mathematicians wander away, shaking our heads and
muttering "Engineers!" under our breaths.

--
The official state religion of France is Bureaucracy. They've replaced
the Trinity with the Triplicate.
-- David Richerby, in a place not to be named.

1987. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 20:27:26 UTC
From: averyfineman@aol.com
Message-ID: <20040312152726.06226.00003366@mb-m19.aol.com>
Source record: 27825

In article <9nf350hjb0c38qibba1155fnt50v1e3s30@4ax.com>, Paul Burridge
<pb@osiris1.notthisbit.co.uk> writes:

>Is there some black magic required to get higher order harmonics out
>of an oscillator?

[did you miss a class at Hogwarts? :-)]

>I'm only trying to get 17.2Mhz out of a 3.44Mhz source and am thus far
>failing spectacularly. I've tried everything I can think of so far to
>no avail. All I can get apart from the fundamental is a strong third
>harmonic on 10.32Mhz, regardless of what I tune for. I've tried
>passing the osc output through two successive inverter gates to
>sharpen it up, but still nothing beyond the third appears after tuned
>amplification for the fifth. I no longer have a spectrum analyser so
>can't check for the presence of a decent comb of harmonics at the
>input to the multiplier stage but can only assume the fifth is well
>down in the mush for some reason.

As others have suggested, the duty cycle may be off such that
the 5th harmonic is not as strong as it should be (it would be only
about 10% of the fundamental frequency with the 'best' duty cycle).

Part of the problem can be in trying to L-C tune logic gate outputs,
presuming a great deal that such is what you are doing. If you must
use logic gate inverters, use an open collector kind and put a 5th
harmonic parallel-tuned circuit there and couple it to a relatively high
impedance buffer amplifier input. Or, use a transistor stage and tune
the collector (or drain if FET) to the 5th harmonic.

With TTL gates the output characteristics are non-linear in that a
conducting-to-logic-0 state is a rather low impedance source while
output conducting to a logic-1 state is a medium impedance source.
The resulting loading is not good for trying to filter out a 5th or higher
harmonic. An open-collector output allows the average output Z to
be higher with less upset of a tuned circuit.

The above also applies to a series-tuned L-C circuit for the 5th but
that may be an advantage with the curious impedance of TTL gate
inputs. Using CMOS logic gates over all might prove to be an
advantage since their input impedances are quite high and most
output characteristics don't differ as much between logic 0 and 1.

>I could change the inverters for
>schmitt triggers and gain a couple of nS but can't see that making
>enough difference. What about sticking a varactor in there somewhere?
>Would its non-linearity assist or are they only any good for even

>order harmonics?

Varactors don't create harmonics all by themselves. Those need to be "tuned" either through resonant circuits or harmonics selected via L-C filters. What you want to do can be done with stock parts but in different arrangements.

Len Anderson
retired (from regular hours) electronic engineer person.

1988. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 20:27:27 UTC
From: averyfineman@aol.com
Message-ID: <20040312152727.06226.00003367@mb-m19.aol.com>
Source record: 27824

In article <c2shiqnec1@xuxa.iecc.com>, "Tam/WB2TT" <t-tammaru@c0mca$t.net>
writes:

>I don't know what you mean by ordinary crystal, but even.001% is not very
>good. You may want to look at high accuracy temperature compensated
>oscillators. Depending on where you live, you may actually be able to phase
>lock your oscillator to the WWB carrier. You would have to use a phase
>detector that does not pull you off to one side if you lose the signal.
>Also, the ~3.58MHz color subcarrier on some TV stations is locked to a
>cesium standard.

"Ordinary" quartz crystals are available off-the-shelf with tolerances
ranging from 20 ppm to 200 ppm. That equates to 0.002 to 0.020%.

TCXOs (Temperature Compensated Xtal Oscillators) will have much
better tolerance over temperature -but- the oscillator circuit itself must
be trimmed for the nominal temperature frequency.

If the operating environment temperature has a "room temperature"
range, then it might be better to use a VCXO (Voltage-Controlled
X O) enclosed in an insulated container. The voltage control (from a
very hum-free and very stable source) allows trimming down to better
than 1 ppm with the least disturbance of the temperature-insulating
properties of the enclosure...no tuning trimming shafts nor access
holes for intruding alignment tweakers needed.

There are some TCVXOs available stock at specific frequencies but
those cost a bit more than the average crystal oscillator unit. ECS
made a few of those which were dealt through DigiKey, but those
aren't in their current industrial on-line catalog.

In the NTSC TV standards, the color sub-carrier reference frequency
of 3.579454545454545... MHz is related to the 5 MHz NIST standard
frequency by: (88 x Cs) / 63 = 5 MHz, were Cs is the sub-carrier f.
Integer dividers and multipliers can create one from the other.

The NTSC aural carrier frequency offset is exactly 4.5 MHz and that
can be found from the color sub-carrier frequency by: (44 Cs)/35 =
4.5 MHz.

To compare one crystal source against another, a color sub-carrier
oscillator can be divided down by 63 to achieve 56.1818181818.. KHz
and a 5 MHz oscillator divided by 88 to get the same frequency. The
divided frequencies can be input to a phase detector whose output
can be used for direct phase comparison or for a PLL that locks one
of the oscillators to the other. Integer flip-flop dividers can be:

88 = 2 x 2 x 2 x 11 63 = 7 x 9

Len Anderson
retired (from regular hours) electronic engineer person

1989. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 20:41:49 UTC
From: Ian Bell <itb@yahoo.com>
Message-ID: <c2t71g$1s9j75$1@ID-225948.news.uni-berlin.de>
Source record: 27826
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Mike Andrews wrote:

> In <105456l62pp04ad@corp.supernews.com> (rec.radio.amateur.homebrew), Tim
> Wescott wrote:
>
>> Yes, it's pronounced "sink", and it's quite common in signal processing.
>> You define it as being the _limit_ of sin(x)/x as x -> 0 because
>> otherwise it's undefined at zero, and all the mathematicians in the crowd
>> will curse at you for being yet another engineer who's treating math so
>> casually.
>
> That's not precisely true.
>
> Some fraction of us mathematicians wander away, shaking our heads and
> muttering "Engineers!" under our breaths.
>

Reminds me of the old joke about the mathemetician, the physicist and the engineer. They were each shown into a room in the centre of which was ï¿½50 note / $100 bill (depending on which side of the pond you live).

They were told they could walk half the distance to the money and stop. Then they could walk half the remaining ditance and so on until they got the money.

The mathemetician worked out you would never reach the money so he didn't even try. The physicist, working to five decimal places was still there a week later. The engineer did three iterations, said 'That's close enough' and picked up the money.

The moral is of course, horses for courses.

Ian

1990. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 20:54:59 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c2t833$4qf$1@titan.btinternet.com>
Source record: 27827
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

The Hyperbolic Cosine is pronounced Cosh.
The Hyperbolic Sine is pronounced Shine.
The Hyperbolic Tangent is pronounced Than with a soft Th.

At least that's the way I've been doing it for the last 55 years.

They don't seem to come up very often in conversation although they are just as fundamental in mathematics as are the trigonometrical functions. They crop up all over the place especially in transmission lines where they appear in complex form such as Tanh(A+jB).

1991. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 21:18:50 UTC
From: averyfineman@aol.com
Message-ID: <20040312161850.21457.00004579@mb-m10.aol.com>
Source record: 27828

In article <105456l62pp04ad@corp.supernews.com>, "Tim Wescott"
<tim@wescottnospamdesign.com> writes:

>> I've always seen it as 1/x sin(x) "one over ex sine ex". the hyperbolic
>> sine function sinh is usually pronounced "Cinch"
>> So how do you pronounce sinc? "Sink ?"
>
>Yes, it's pronounced "sink", and it's quite common in signal processing.
>You define it as being the _limit_ of sin(x)/x as x -> 0 because otherwise
>it's undefined at zero, and all the mathematicians in the crowd will curse
>at you for being yet another engineer who's treating math so casually.

Heh heh heh...rememberances of my instructor throughout all math
classes except analytical geometry...same one, who also had
a HOBBY of advanced math. :-)

Instructor always warned everyone NOT to pronounce the apparent
word meaning hyperbolic sine...just say "hyperbolic" before "sine"
but write it "SinC." Someone in the class would object and then
he would write the word for hyperbolic tangent on the board and
challenge him to pronounce "TanH." :-)

Basic algebra texts explain what they are and their identities, but
some want to emulate Professor Higgins in "My Fair Lady"...i.e.,
"...they don't care what they DO, only that they pronounce it
correctly!" :-) :-) :-)

Len Anderson
retired (from regular hours) electronic engineer person

1992. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 21:28:40 UTC
From: peg@slingshot.co.nz
Message-ID: <62069f15.0403121328.2d77ec7a@posting.google.com>
Source record: 27829
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Reg Edwards" <g4fgq.regp@ZZZbtinternet.com> wrote in message
news:<c2skhorkn1@hercules.btinternet.com>...
> According to Fourier, at some mark-space ratios of a square wave certain
> harmonics may be missing from the spectrum.
>
> Just generate a a train of very short sharp pulses from the oscillator and
> you will find all the harmonics are present allbeit with reducing
> amplitudes. A single transistor should do the job.

The inverse of the duty cycle. For a square wave 1:1 M/S = 1/2 duty
and all harmonics divisble by 2 are absent. For duty 1/5, fifth
harmonic (and multiples)are absent.

1993. FRG-8800 Circuit Diagram

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 22:07:59 UTC
From: Andrew Tyler <andrew@tyler39.freeserve.co.uk>
Message-ID: <c2tcmgeej1@newsg3.svr.pol.co.uk>
Source record: 27830

Hi All,
Looking for a circuit diagram for my Yaesu FRG-8800. Can anyone help ??

Andy G1GKN

1994. Re: Ameco AC-1 problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 22:19:06 UTC
From: jgboyles@aol.com
Message-ID: <20040312171906.12145.00001420@mb-m02.aol.com>
Source record: 27831

>So a 50 resistor serves as my dummy load and a meter connected to
>the dummy load indicates around 10 volts RMS. If I did my homework that
>would indicate around 2 watt output.

Uwe, The 10 Vrms that your meter indicates may not be accurate at 3.5 or 7 MHZ. It is probably OK at 60 hz. What you can derive from the 10 Vrms is that the AC-1 is producing power, just not sure how much.
One thing you might try is a method to remove the frequency dependency of your measurements. Use a 10:1 voltage divider (10k and a 1.11k). Run this thru a Germanium or Schottky detector diode and a .01 filter capacitor. You now have a DC voltage that is proportional to power, and relatively frequency independent.
To calculate the RMS voltage across the 50 ohm load: Read the DC volts out of the detector-Vdc. Then Vrms=(Vdc*.707)*10.
Example: You read 2Vdc out of the detector. Vrms=14.14 volts. Power into the 50 ohm load is then: 14.14^2/50=4 Watts. The diode drop in the dector will introduce some error at QRP levels, hopefully not too much for what you are trying to do.
73 Gary N4AST

1995. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 22:22:23 UTC
From: Charles Edmondson <edmondson@ieee.org>
Message-ID: <4052381f$1@news.cadence.com>
Source record: 27832
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Mike Andrews wrote:
> In <12s35014t9hukqctr5sfdgnivsv3aq5m1u@4ax.com> (rec.radio.amateur.homebrew), Ben
Bradley wrote:
>
>>In rec.radio.amateur.homebrew,sci.electronics.design, Bob Stephens
>><stephensyomamadigital@earthlink.net> wrote:
>
>
>>>On Fri, 12 Mar 2004 16:08:15 +0000, John Woodgate wrote:
>>>
>>>
>>>>where sinc(x)= {sin(x)}/x
>>>
>>>I've never seen this terminology before. Is this standard math parlance or
>>>is it something of your own?
>
>
>> You can google for it (Usenet or Web) and find it, I've seen it
>>used a good bit in signal processing and such.
>
>
> And it shows up in some math classes as well, though its main use is
> in electronics. I suspect it showed up because the instructor wanted
> to show a real-life example, which just happened to be -- electronics.
>
And if you want to see the graph of it, look at the Broadcomm logo! 8-)
--
Charlie
--
Edmondson Engineering
Unique Solutions to Unusual Problems

1996. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 22:31:19 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <8j545094ojhfdaahr8oh5oa825iormf0kq@4ax.com>
Source record: 27833
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Fri, 12 Mar 2004 17:57:24 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>Great. So without a spectrum analyser there's no way to tell? If I
>examine the output of the multiplier, it's very messy. There's a
>dominant 3rd harmonic alright (my frequency counter resolves it
>without difficulty) but the scope trace reveals a number of 'ghost
>traces' of different frequencies and amplitudes co-incident with the
>dominant trace. All rather confusing. I suppose the only answer is to
>build Reg's band pass filter and stick it between the inverter output
>and the multiplier input? <shrug>

You may want to try something like this:

```
COUNTER SCOPE COUNTER
| | |
| | |
FIN>--[50R]-+-[1N4148>]---+----+-------+--->FOUT
| |
[L] [C]
| |
GND>----------------------+----+
```

The 50 ohm resistor is the internal impedance of a function generator,
and when I set it to output a square wave at 1.5VPP, I got 10.8kHz for
the fundamental of the tank. Then I tuned the function generator down
until I got a peak out of the tank, and here's what I found:

```
Fin Fout Vout fout/fin
kHz kHz VPP
-----|-----|------|---------
10.8 10.8 0.9 1.0
3.58 10.8 0.25 3.02 ~ 3
2.14 10.8 0.2 5.05 ~ 5
```

So with a square wave in there were no even harmonics and it was easy
to trap the 3rd and 5th harmonics with a tank.

Next, I tried it with a 3VPP sine wave in and got:

```
Fin Fout Vout fout/fin
kHz kHz VPP
-----|-----|------|---------
10.8 10.8 1.3 1.0
5.39 10.8 0.9 ~ 2.0
```

2.14 10.8 0.3 5.05 ~ 5

So it looks like the second and the fifth harmonics were there. There were also some other responses farther down, but I just wanted to see primarily whether the fifth had enough amplitude to work with, and apparently it does, so I let the rest of it slide.

So, it looks like if you square up your oscillator's output to 50% duty cycle you could get the 5th harmonic without too much of a problem. If you can't, then clip the oscillator's output with a diode or make its duty cycle less than or greater than 50%, and you ought to be able to get the 5th that way.

--
John Fields

1997. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 22:35:16 UTC
From: jdurban@vorel.com
Message-ID: <118afaeb.0403121435.ab8a2d3@posting.google.com>
Source record: 27834
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

mikea@mikea.ath.cx (Mike Andrews) wrote in message news:<c2shs0uuo3@puck.litech.org>...
> In <9nf350hjb0c38qibba1155fnt50v1e3s30@4ax.com> (rec.radio.amateur.homebrew), Paul Burridge wrote:
> > Hi all,
>
> > Is there some black magic required to get higher order harmonics out
> > of an oscillator?
> > I'm only trying to get 17.2Mhz out of a 3.44Mhz source and am thus far
> > failing spectacularly. I've tried everything I can think of so far to
> > no avail. All I can get apart from the fundamental is a strong third
> > harmonic on 10.32Mhz, regardless of what I tune for. I've tried
> > passing the osc output through two successive inverter gates to
> > sharpen it up, but still nothing beyond the third appears after tuned
> > amplification for the fifth. I no longer have a spectrum analyser so
> > can't check for the presence of a decent comb of harmonics at the
> > input to the multiplier stage but can only assume the fifth is well
> > down in the mush for some reason. I could change the inverters for
> > schmitt triggers and gain a couple of nS but can't see that making
> > enough difference. What about sticking a varactor in there somewhere?
> > Would its non-linearity assist or are they only any good for even
> > order harmonics?
> > Any suggestions, please. I'm stumped! :(
>
> There must be something killing the fifth harmonic, which should be
> present at (1/5) of the amplitude of the fundamental in a square
> wave. That's a pretty strong component.
>
> If you can amplify the output of the source and then square it up
> sharply, the fifth harmonic ought to be pretty easy to extract. The
> larger the amplitude of that square wave, the larger the amplitude of
> the fifth harmonic, of course, so amplification is your friend here --
> but you may want to shield very well indeed to keep other components
> out of places where they don't belong and may cause trouble.
>
> Have a look at
> <http://hyperphysics.phy-astr.gsu.edu/hbase/audio/geowv.html>
> for a lot of stuff that you probably already know.
>
> Best of luck, and please keep us posted.

Hey Mike,

Thanks for that great link. What an awesome site! I am going to be a
regular visitor.

All the best,

Jack

1998. Re: Ameco AC-1 problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 22:47:52 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BC77A844.1EE8%outhouse@midcoast.com>
Source record: 27838

Doug, that is much more power than I had hoped to get.
I am unsure about the max. values for the 6v6, therefore I stayed low.

When I increase the plate voltage to 325V my 2. grid runs about 280V and the plate current increases to about 65 mA. I don't really dare to do that without knowing the max values on that tube.
I guess I could lower the 2. grid voltage by increasing the value of the resistor connectd to it.
I don't know if that would lower my plate current to what you get.

And yes I have a few 807's lying around, so eventually I could build something more powerful, but at this point I need to work on my code, otherwise all of this is a mute point.

You are right about monitoring the CW, it spills over to my receiver and I can monitor it there, even if I run the transmitter with a dummy load.

So eventually I guess I could just use an arrangement that on transmitt I would automatically shorten out my receivers antenna.
Hate to use a computer chip (for example) to do it though, I will have to look for a lower tech way to accomplish this switching.

regards Uwe

in article 20040312083631.06601.00001267@mb-m25.aol.com, Troglodite at troglodite@aol.com wrote on 3/12/04 08:36:

>
> I run my 6V6's at about 325 volts on the plate, 250 on the screen. The plate
> is
> loaded to about 40ma, which is about 13 watts input. You can push it beyond
> this, but there's really no point since you have to quadruple your power to
> gain one S unit on the receiving end. You'll get about 8 watts out which is
> fine. If you want something heftier, you can go to a 6L6, 807 or 6146 tube.
> There is a compromise with single tube transmitters though, as the power goes
> up they tend to chirp, that is, the frequency slides a bit as they are keyed.
> It's not objectionable on the 6V6 transmitters, which is why I favor this
> power
> level.
>
> I started out in 1954 with a surplus ARC-5 receiver and a simple 6V6
> transmitter. With it I gained code proficiency and managed to work 28 states
> before my Novice licence expired. (They were only good for a year back then.)
>
> For monitoring, you can just use your receiver with the antenna disconnected,
> or you can construct any number of monitor devices which you will find in the

> ARRL handbook. You can get more sophisticated but you don't have to. There is
> a
> special satisfaction in communicating with very simple equipment.
>
> Doug Moore KB9TMY
>

1999. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 23:02:30 UTC
From: John Larkin <jjlarkin@highSNIPlandTHIStechPLEASEnology.com>
Message-ID: <tre450lm2cuoo6r2frn2m1b5pa06dq0mr5@4ax.com>
Source record: 27835
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Fri, 12 Mar 2004 16:31:19 -0600, John Fields
<jfields@austininstruments.com> wrote:

>On Fri, 12 Mar 2004 17:57:24 +0000, Paul Burridge
><pb@osiris1.notthisbit.co.uk> wrote:
>
>
>>Great. So without a spectrum analyser there's no way to tell? If I
>>examine the output of the multiplier, it's very messy. There's a
>>dominant 3rd harmonic alright (my frequency counter resolves it
>>without difficulty) but the scope trace reveals a number of 'ghost
>>traces' of different frequencies and amplitudes co-incident with the
>>dominant trace. All rather confusing. I suppose the only answer is to
>>build Reg's band pass filter and stick it between the inverter output
>>and the multiplier input? <shrug>
>
>---
>You may want to try something like this:
>
>
> COUNTER SCOPE COUNTER
> | | |
> | | |
>FIN>--[50R]-+-[1N4148>]---+----+-------+--->FOUT
> | |
> [L] [C]
> | |
>GND>----------------------+----+
>
>The 50 ohm resistor is the internal impedance of a function generator,
>and when I set it to output a square wave at 1.5VPP, I got 10.8kHz for
>the fundamental of the tank. Then I tuned the function generator down
>until I got a peak out of the tank, and here's what I found:
>
> Fin Fout Vout fout/fin
> kHz kHz VPP
>-----|-----|------|---------
>10.8 10.8 0.9 1.0
>3.58 10.8 0.25 3.02 ~ 3
>2.14 10.8 0.2 5.05 ~ 5
>
>So with a square wave in there were no even harmonics and it was easy
>to trap the 3rd and 5th harmonics with a tank.

>
>
>Next, I tried it with a 3VPP sine wave in and got:
>
> Fin Fout Vout fout/fin
> kHz kHz VPP
>-----|-----|------|---------
>10.8 10.8 1.3 1.0
>5.39 10.8 0.9 ~ 2.0
>2.14 10.8 0.3 5.05 ~ 5
>
>So it looks like the second and the fifth harmonics were there. There
>were also some other responses farther down, but I just wanted to see
>primarily whether the fifth had enough amplitude to work with, and
>apparently it does, so I let the rest of it slide.
>
>So, it looks like if you square up your oscillator's output to 50% duty
>cycle you could get the 5th harmonic without too much of a problem. If
>you can't, then clip the oscillator's output with a diode or make its
>duty cycle less than or greater than 50%, and you ought to be able to
>get the 5th that way.

Historical note: about 1960, a guy at HP was doing exactly this with some new diodes, and he got way more higher harmonics than theory predicts. To figure it out, they hooked up the just-invented HP185 sampling scope (which then used avalanche transistors to make its sampling pulses) and discovered the diode reverse-recovery snap phenom. Soon the scope itself was using this effect. They were originally called Boff diodes, after the discoverer Frank Boff, but the name didn't stick (wonder why?) and they became "snap diodes" and later "step-recovery diodes". I think I may have the HP Journal article around somewhere.

See page 31:

http://cp.literature.agilent.com/litweb/pdf/5980-2090E.pdf

John

2000. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 23:02:41 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403121502.2abe910@posting.google.com>
Source record: 27836
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Assuming you have edges quite a bit shorter than the period, it's easy
to see what pulse widths you want to avoid to maximize the 5th: don't
let 5*pi*width/period be an integer multiple of pi. So avoid
width/period = 1/5, 2/5, 3/5 or 4/5. 2/5 and 3/5 (40% and 60%) are
not all that far from 50%. There are lots of ways to get 50% (or
close to it). One is to slow the edges a bit, and put the result into
a Schmitt trigger with adjustable DC level; the DC level will then
adjust the period. You can servo the DC level with an integrator tied
to the output and referenced to (v(high)+v(low))/2, for high accuracy.
Maybe that's too complicated, though, if you want things small. Note
that by not causing dissipation of the fundamental or other harmonics,
a multiplier can be considerably more efficient than indicated by the
percentage available power in the selected harmonic. In other words,
don't put a filter on a logic output that shorts out the fundamental,
but rather one that looks like an open circuit to the fundamental,
etc.

Cheers,
Tom

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:<4gt3501m5p9u1tq4daa9avhlu57gkl6lvr@4ax.com>...
> On Fri, 12 Mar 2004 16:08:15 +0000, John Woodgate
> <jmw@jmwa.demon.contraspam.yuk> wrote:
>
> >I read in sci.electronics.design that Reg Edwards
> ><g4fgq.regp@ZZZbtinternet.com> wrote (in <c2skhorkn1@hercules.btintern
> >et.com>) about 'Extracting the 5th Harmonic', on Fri, 12 Mar 2004:
> >>According to Fourier, at some mark-space ratios of a square wave certain
> >>harmonics may be missing from the spectrum.
> >
> >
> >For a waveform like this (use Courier font):
> > _____
> > / \ /
> >_____/ ____________/
> >
> >with rise-time f, dwell time d, fall time r and period T, the harmonic
> >magnitudes are given by:
> >
> >Cn = 2Aav{sinc(n[pi]f/T)}{sinc(n[pi][f+d]/T)}{sinc(n[pi][r-f]/T)},
> >
> >where sinc(x)= {sin(x)}/x
> >

> >There seems to be a number of opportunities for a harmonic to 'hide' in
> >a zero of that function.
>
> Great. So without a spectrum analyser there's no way to tell? If I
> examine the output of the multiplier, it's very messy. There's a
> dominant 3rd harmonic alright (my frequency counter resolves it
> without difficulty) but the scope trace reveals a number of 'ghost
> traces' of different frequencies and amplitudes co-incident with the
> dominant trace. All rather confusing. I suppose the only answer is to
> build Reg's band pass filter and stick it between the inverter output
> and the multiplier input? <shrug>

2001. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-12 23:21:41 UTC
From: Joseph Fenn <jfenn@lava.net>
Message-ID: <c2tgm5$c7m$1@xuxa.iecc.com>
Source record: 27837
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc, rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

Gerry and others,
Yes I have went thru 2 of those dam things already. A big white one
with normal minute and hour hands which I threw away after a few weeks
of trying to make it behafe. Then got the more or less square shaped
one with wooden panels on eachside of the clock face. Shows
day date weekday (seconds or indoor temp) Outdoor temp. Has an ICON
top center thats supposed to show up black if WWV is being heard.
Mine rarely does unless take it upstairs and point it north/south.
Then the icon (wwv) shows very dimly. Mine is supposed to access
the WWV sig during hours from midnight to 6am only. But still the
ICON rarely shows up. I hear the people who sell them are very
helpful and will even replace your clock if you cant resolve the
problems. Their ph nr is 1 (800) 972-0292 and ask for Shelly.
Kokomo Joe (in Hawaii)

****
* Ham KH6JF AARS/MARS ABM6JF QCWA WW2 VET WD RADIO *
****

On Thu, 12 Mar 2004, Gerry Wheeler KG4NBB wrote:

> On Tue, 09 Mar 2004 16:46:54 +0000, Dennis wrote:
>
> > In article <c2jdpg$f9h$1@xuxa.iecc.com>, dragon40@shaw.ca says...
> >
> > Yes, I have one of these clocks also. The thing is, these clocks are set
> > 6 times in a 24hr perod by the WWVB signal. The rest of the time the
> > time base is an ordinary crystal.
>
> Mine is set only once per day, sometime between midnight and 4 am.
>
> I was under the impression that the reason this was done is that the
> signal is too weak to be decoded during other times of the day. In fact, I
> have some (admittedly very inexpensive) atomic clocks that have *never*
> decoded the signal here in Florida.
> --
> Gerry Wheeler KG4NBB
> Naples, FL
> N26.28 W081.76
>
>

2002. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 00:00:52 UTC
From: Tony <tony_roe@tpg.com.au>
Message-ID: <8oi450llighd6uc9t3iqes2ae0uqst281e@4ax.com>
Source record: 27840
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

The 5th harmonic should be only 14dB below the fundamental, although it will drop fairly quickly as the sides of the input square wave deviate from vertical.

Does the 3.44MHz have a 50% duty cycle?

Are you filtering before amplifying (eg a high impedance 3 pole bandpass/highpass L-C filter with a gain of about 5 at 17.2MHz).

Does the inverter supply a decent square wave under the load of the filter?

If all else fails, could you reverse the process - generate 17.2MHz and divide it down to 3.44MHz?

(Many) years ago I made a functional TV modulator for an Apple][PC by pulling out the 3rd harmonic of the 14.318MHz system clock. I know it was only 3rd harmonic, but it was at ~43MHz, so I would expect similar or better logic should be able to produce 17.2MHz for you.

On Fri, 12 Mar 2004 13:56:10 +0000, Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote:

>Hi all,
>
>Is there some black magic required to get higher order harmonics out
>of an oscillator?
>I'm only trying to get 17.2Mhz out of a 3.44Mhz source and am thus far
>failing spectacularly. I've tried everything I can think of so far to
>no avail. All I can get apart from the fundamental is a strong third
>harmonic on 10.32Mhz, regardless of what I tune for. I've tried
>passing the osc output through two successive inverter gates to
>sharpen it up, but still nothing beyond the third appears after tuned
>amplification for the fifth. I no longer have a spectrum analyser so
>can't check for the presence of a decent comb of harmonics at the
>input to the multiplier stage but can only assume the fifth is well
>down in the mush for some reason. I could change the inverters for
>schmitt triggers and gain a couple of nS but can't see that making
>enough difference. What about sticking a varactor in there somewhere?
>Would its non-linearity assist or are they only any good for even
>order harmonics?
>Any suggestions, please. I'm stumped! :(

Tony (remove the "_" to reply by email)

2003. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 00:16:28 UTC
From: James Meyer <jmeyer@nowhere.com>
Message-ID: <2hk450h1o4tq5mrur5enqg43hto3hqsggi@4ax.com>
Source record: 27839
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Fri, 12 Mar 2004 13:56:10 +0000, Paul Burridge <pb@osiris1.notthisbit.co.uk>
posted this:

>Hi all,
>
>Is there some black magic required to get higher order harmonics out
>of an oscillator?
>I'm only trying to get 17.2Mhz out of a 3.44Mhz source and am thus far
>failing spectacularly. I've tried everything I can think of so far to
>no avail.

Is this a simulated circuit or a "real" one built with "real"
components?

I have at least one suggestion, but I need to know whether to send an
LTspice netlist or a gif.

Jim

2004. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 00:46:32 UTC
From: DRGrok@munged.net
Message-ID: <405258ea$0$2821$61fed72c@news.rcn.com>
Source record: 27841

In article <c2shs0uuo3@puck.litech.org>, mikea@mikea.ath.cx (Mike Andrews) wrote:
>In <9nf350hjb0c38qibba1155fnt50v1e3s30@4ax.com> (rec.radio.amateur.homebrew),
> Paul Burridge wrote:
>> Hi all,
>
>> Is there some black magic required to get higher order harmonics out
>> of an oscillator?
>> I'm only trying to get 17.2Mhz out of a 3.44Mhz source and am thus far
>> failing spectacularly. I've tried everything I can think of so far to
>> no avail. All I can get apart from the fundamental is a strong third
>> harmonic on 10.32Mhz, regardless of what I tune for. I've tried
>> passing the osc output through two successive inverter gates to
>> sharpen it up, but still nothing beyond the third appears after tuned
>> amplification for the fifth. I no longer have a spectrum analyser so
>> can't check for the presence of a decent comb of harmonics at the
>> input to the multiplier stage but can only assume the fifth is well
>> down in the mush for some reason. I could change the inverters for
>> schmitt triggers and gain a couple of nS but can't see that making
>> enough difference. What about sticking a varactor in there somewhere?
>> Would its non-linearity assist or are they only any good for even
>> order harmonics?
>> Any suggestions, please. I'm stumped! :(
>
>There must be something killing the fifth harmonic, which should be
>present at (1/5) of the amplitude of the fundamental in a square
>wave. That's a pretty strong component.
>
>If you can amplify the output of the source and then square it up
>sharply, the fifth harmonic ought to be pretty easy to extract. The
>larger the amplitude of that square wave, the larger the amplitude of
>the fifth harmonic, of course, so amplification is your friend here --
>but you may want to shield very well indeed to keep other components
>out of places where they don't belong and may cause trouble.
>
>Have a look at
><http://hyperphysics.phy-astr.gsu.edu/hbase/audio/geowv.html>
>for a lot of stuff that you probably already know.
>
>Best of luck, and please keep us posted.
>
Remember the harmonic energy is in the edges of the waveform. You need to
have fast rise and fall times to get the theoretical 1/5 of the fundamental.

From experience an 'ACT type device [74ACT04 or whatever] driving thru a small resistor [20 to 50 ohms] into a properly tuned tank should work. I have used that method to due a multiplication to a hifger frequency than you are looking for.

Dr. G.

2005. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 01:30:36 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <euo450t2hql9nfio7gtp06i6ncvlbepm3a@4ax.com>
Source record: 27842

On Fri, 12 Mar 2004 20:41:49 +0000, Ian Bell <itb@yahoo.com> wrote:

>>
>
>Reminds me of the old joke about the mathemetician, the physicist and the
>engineer. They were each shown into a room in the centre of which was ï¿½50
>note / $100 bill (depending on which side of the pond you live).
>
>They were told they could walk half the distance to the money and stop.
>Then they could walk half the remaining ditance and so on until they got
>the money.
>
>The mathemetician worked out you would never reach the money so he didn't
>even try. The physicist, working to five decimal places was still there a
>week later. The engineer did three iterations, said 'That's close enough'
>and picked up the money.
>
>The moral is of course, horses for courses.
>
>Ian

.....and I always believed John was an engineer, have some similar
expressions which an instructor used the xmas holidays to derive

JM

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

2006. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 04:24:00 UTC
From: averyfineman@aol.com
Message-ID: <20040312232400.25517.00004728@mb-m15.aol.com>
Source record: 27843

In article <20040312152727.06226.00003367@mb-m19.aol.com>, averyfineman@aol.com (Avery Fineman) writes, adding to a previous post:

>In article <c2shiqnec1@xuxa.iecc.com>, "Tam/WB2TT" <t-tammaru@c0mca$t.net>
>writes:
>
>>I don't know what you mean by ordinary crystal, but even.001% is not very
>>good. You may want to look at high accuracy temperature compensated
>>oscillators. Depending on where you live, you may actually be able to phase
>>lock your oscillator to the WWB carrier. You would have to use a phase
>>detector that does not pull you off to one side if you lose the signal.
>>Also, the ~3.58MHz color subcarrier on some TV stations is locked to a
>>cesium standard.

> In the NTSC TV standards, the color sub-carrier reference frequency
> of 3.579454545454545... MHz is related to the 5 MHz NIST standard
> frequency by: (88 x Cs) / 63 = 5 MHz, were Cs is the sub-carrier f.
> Integer dividers and multipliers can create one from the other.
>
> The NTSC aural carrier frequency offset is exactly 4.5 MHz and that
> can be found from the color sub-carrier frequency by: (44 Cs)/35 =
> 4.5 MHz.

Using a "3.58 MHz" color TV crystal, it's possible to use 17 flip-flops in a set and reset depending on states of stages 4, 16, and 17 to achieve a 60, 50, or 100 Hz precise output. That's done in the old National Semiconductor MM5369 divider, a little 8-pin CMOS DIP that runs on 5 to 15 VDC single supply, crystal oscillator active circuitry on-board. If one can still find them, the following suffixes will produce the following outputs with a colorburst crystal:

MM5369AA - 60 Hz
MM5369EYR - 100 Hz
MM5369EST - 50 Hz

Couldn't find the 20+ year old notes on the division presetting so all I've got for those is a 1980 National MOS Databook (which doesn't say squat about the divider chain's details). It's an interesting game on paper with a calculator to figure out the exact division value. :-)

That little oscillator-divider was used in several Russian "Woodpecker" (over the horizon radar) blanker add-ons for receiver two decades ago.. Some additional decade dividers coming off the output would get down to the Woodpecker's impulse rate.

Len Anderson
retired (from regular hours) electronic engineer person

2007. ZipperFish talk radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 05:18:29 UTC
From: spearhead <webmaster@siteomatic.com>
Message-ID: <FQw4c.208862$B81.3005695@twister.tampabay.rr.com>
Source record: 27844

New!!

Talk - Call In

Adult Internet stream radio.

Try it out - It's open to the public!

http://www.zipperfish.com/radio.html

Siteomatic
Web Hosting

2008. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 06:23:42 UTC
From: tommyknocker <tomynokr@uucp.hell>
Message-ID: <c2u9de$o9e$1@xuxa.iecc.com>
Source record: 27846
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

Joseph Fenn wrote:

> Gerry and others,
> Yes I have went thru 2 of those dam things already. A big white one
> with normal minute and hour hands which I threw away after a few weeks
> of trying to make it behafe. Then got the more or less square shaped
> one with wooden panels on eachside of the clock face. Shows
> day date weekday (seconds or indoor temp) Outdoor temp. Has an ICON
> top center thats supposed to show up black if WWV is being heard.
> Mine rarely does unless take it upstairs and point it north/south.
> Then the icon (wwv) shows very dimly. Mine is supposed to access
> the WWV sig during hours from midnight to 6am only. But still the
> ICON rarely shows up. I hear the people who sell them are very
> helpful and will even replace your clock if you cant resolve the
> problems. Their ph nr is 1 (800) 972-0292 and ask for Shelly.
> Kokomo Joe (in Hawaii)

Forget about getting an atomic clock to set in Hawaii. The signal is
simply too weak. Atomic Time (who I bought my dual time clock from) says
that it helps if you point the antenna (apparently they just use ferrite
rod antennas-just like in a cheap transistor radio-to recieve) towards
Fort Collins, which is due east of my QTH.
>
>
> **********
> * Ham KH6JF AARS/MARS ABM6JF QCWA WW2 VET WD RADIO *
> **********
>
>
> On Thu, 12 Mar 2004, Gerry Wheeler KG4NBB wrote:
>
> > On Tue, 09 Mar 2004 16:46:54 +0000, Dennis wrote:
> >
> > > In article <c2jdpg$f9h$1@xuxa.iecc.com>, dragon40@shaw.ca says...
> > >
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> > > 6 times in a 24hr perod by the WWVB signal. The rest of the time the
> > > time base is an ordinary crystal.
> >
> > Mine is set only once per day, sometime between midnight and 4 am.
> >
> > I was under the impression that the reason this was done is that the
> > signal is too weak to be decoded during other times of the day. In fact, I

> > have some (admittedly very inexpensive) atomic clocks that have *never*
> > decoded the signal here in Florida.

Yes, that's the impression I got too. Somewhere on the net I saw a
diagram of WWVB's coverage area-it covers all of North America at night
and just a little area of the Rockies during the day.

> > --
> > Gerry Wheeler KG4NBB
> > Naples, FL
> > N26.28 W081.76
> >
> >
>

2009. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 06:23:44 UTC
From: Dennis <Howdy.Doody@howdydoody.net>
Message-ID: <c2u9dg$oa0$1@xuxa.iecc.com>
Source record: 27845
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

In article <c2tgm5$c7m$1@xuxa.iecc.com>, jfenn@lava.net says...
>
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>Gerry and others,
>Yes I have went thru 2 of those dam things already. A big white one
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>of trying to make it behafe. Then got the more or less square shaped
>one with wooden panels on eachside of the clock face. Shows
>day date weekday (seconds or indoor temp) Outdoor temp. Has an ICON
>top center thats supposed to show up black if WWV is being heard.
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>Then the icon (wwv) shows very dimly. Mine is supposed to access
>the WWV sig during hours from midnight to 6am only. But still the
>ICON rarely shows up. I hear the people who sell them are very
>helpful and will even replace your clock if you cant resolve the
>problems. Their ph nr is 1 (800) 972-0292 and ask for Shelly.

Are you sure your not talking about wwvb, and not wwv. Or in
your case it would be wwvh.

Dennis
> Kokomo Joe (in Hawaii)
>
>
>**
>* Ham KH6JF AARS/MARS ABM6JF QCWA WW2 VET WD RADIO *
>**
>
>
>On Thu, 12 Mar 2004, Gerry Wheeler KG4NBB wrote:
>
>> On Tue, 09 Mar 2004 16:46:54 +0000, Dennis wrote:
>>
>> > In article <c2jdpg$f9h$1@xuxa.iecc.com>, dragon40@shaw.ca says...
>> >
>> > Yes, I have one of these clocks also. The thing is, these clocks are set
>> > 6 times in a 24hr perod by the WWVB signal. The rest of the time the
>> > time base is an ordinary crystal.
>>
>> Mine is set only once per day, sometime between midnight and 4 am.
>>
>> I was under the impression that the reason this was done is that the
>> signal is too weak to be decoded during other times of the day. In fact, I

>> have some (admittedly very inexpensive) atomic clocks that have *never*
>> decoded the signal here in Florida.
>> --
>> Gerry Wheeler KG4NBB
>> Naples, FL
>> N26.28 W081.76
>>
>>
>

2010. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 06:33:58 UTC
From: ChipS <spike@vollyball.net>
Message-ID: <4052aebe_6@corp.newsgroups.com>
Source record: 27847

"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040310000201.21642.00004902@mb-m01.aol.com...

...snip...

> To avoid quantization errors of setting the internal calendar clock,
> the "update" could advance or retard the crystal through a VCXO
> circuit driven by a D-to-A whose digital correction is derived from
> a comparison of the NIST time code to the internal calendar
> clock. Kind of a very slow phase-lock done the hard way. Might
> take days to get in phase. :-)
>

...snip...

>
> Len Anderson
> retired (from regular hours) electronic engineer person

I have watched one of my two radio clocks do precisely this - they appear to
have this iterative locking feature built in. The internal clock was first
fast two or three seconds, and the next day, slow by one or so; at the end
of a week it was right on WWV and has been ever since.

--
Chip
KC5UES
real e-mail address:
trilby1989@yahoo.com

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

2011. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 07:17:10 UTC
From: Mac <foo@bar.net>
Message-ID: <pan.2004.03.13.07.17.09.997333@bar.net>
Source record: 27848
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Fri, 12 Mar 2004 16:55:51 +0000, Bob Stephens wrote:

> On Fri, 12 Mar 2004 16:08:15 +0000, John Woodgate wrote:
>
>> where sinc(x)= {sin(x)}/x
>
> I've never seen this terminology before. Is this standard math parlance or
> is it something of your own?
>
> Don't flame, I'm genuinely curious.
>
> Bob

I see the sinc function all the time. I was introduced to it in school, in a signal processing class, and people at work use it fairly often. In my experience it seems that anyone who deals with signal processing or fft's is familiar with the sinc() function. And I've always heard it pronounced the same as the word "sink."

--Mac

2012. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 07:29:57 UTC
From: averyfineman@aol.com
Message-ID: <20040313022957.15923.00004292@mb-m12.aol.com>
Source record: 27849

In article <c2u9de$o9e$1@xuxa.iecc.com>, tommyknocker <tomynokr@uucp.hell>
writes:

>Yes, that's the impression I got too. Somewhere on the net I saw a
>diagram of WWVB's coverage area-it covers all of North America at night
>and just a little area of the Rockies during the day.

One can find out just about anything about WWVB by going to:

http://www.bldrdoc.gov/timefreq/stations/wwvb.htm

Once there, click on the yellow buttons below the photo of WWVB
towers against an awesomely forbidding dark sky. Click COVERAGE
for the best signal strength around the clock...which is 0600 to 0800
UTC. Lots of other fascinating information under those buttons,
especially on metrology of time and frequency...plus one 1.15 MB
paper from 2003 on Radio Clocks under the Publications for Time
and Frequency page.

Note: NIST must have played with their website since I was there
last in 2003. Getting to the time-frequency stations takes more
button guessing and pushing since then from the main one. :-)
I was just at the link above and it worked on 12 Mar 04.

Len Anderson
retired (from regular hours) electronic engineer person

2013. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 07:43:07 UTC
From: John Woodgate <jmw@jmwa.demon.contraspam.yuk>
Message-ID: <gJzNEjALurUAFwvI@jmwa.demon.co.uk>
Source record: 27850
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

I read in sci.electronics.design that Tim Wescott
<tim@wescottnospamdesign.com> wrote (in <105456l62pp04ad@corp.supernews.
com>) about 'Extracting the 5th Harmonic', on Fri, 12 Mar 2004:

>Yes, it's pronounced "sink", and it's quite common in signal processing.
>You define it as being the _limit_ of sin(x)/x as x -> 0 because
>otherwise it's undefined at zero, and all the mathematicians in the
>crowd will curse at you for being yet another engineer who's treating
>math so casually.

I don't fear the wrath of any mathematician. The limit is very firmly
established as = 1 at a quite elementary level. Just consider the
expansion of sin(x) = x - (x^3)/3! +.....

Of course, it can be established more rigorously, but there is nothing
wrong with the series expansion AFAIK.
--
Regards, John Woodgate, OOO - Own Opinions Only.
The good news is that nothing is compulsory.
The bad news is that everything is prohibited.
http://www.jmwa.demon.co.uk Also see http://www.isce.org.uk

2014. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 09:08:29 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c2uj2dofp1@hercules.btinternet.com>
Source record: 27851
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Fourier (Napoleonic era or earlier?) first used his analysis to study conduction not of electric current but of of heat. That was long before the invention of the electric soldering iron. When the soldering iron (actually copper) arrived Fourier's analysis was already here to greet it.

Then along came Oliver Heaviside who turned the World upside down by replacing jw with p.

2015. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 09:20:59 UTC
From: budgie <me@privacy.net>
Message-ID: <cck550hsgbben56i0cfnj0b09vtm5cu7lc@4ax.com>
Source record: 27852

On Fri, 12 Mar 2004 15:32:23 +0000, Ian Bell <itb@yahoo.com> wrote:

>Paul Burridge wrote:
>
>> Hi all,
>>
>> Is there some black magic required to get higher order harmonics out
>> of an oscillator?
>> I'm only trying to get 17.2Mhz out of a 3.44Mhz source and am thus far
>> failing spectacularly. I've tried everything I can think of so far to
>> no avail. All I can get apart from the fundamental is a strong third
>> harmonic on 10.32Mhz, regardless of what I tune for.
>
>In RF circles, the 'normal' way to do this would be a simple Class C
>amplifier with a collector load tuned to the fifth harmonic. In calls C,
>conduction only occurs for a small fraction of a cycle which produces a
>correspondingly higher proportion of higher harmonics than a square wave.

I've been waiting for someone to post this. I would only add "The drive level,
and the bais point, will vary the amount of fifth (or whichever) you will see."

It's as common as noses in RF, as Ian pointed out. Just look at the average
two-way radio prior to frequency synthesisers. Crystal freqs were multiplied
this way in transmitter chains and for receive injection, although use of fifth
wasn't especially common because you normally had enough design control to use
the more efficient *2, *3 or *4.

2016. SOFTWARES

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 11:24:46 UTC
From: David <g3vfp@blueyonder.co.uk>
Message-ID: <4cC4c.7177$2s5.173@news-binary.blueyonder.co.uk>
Source record: 27875

Interested in softwares which use the sound card for
PSK31,SSTV,RTTY,CW,HELL, ETC ETC.

Take a look at www.g3vfp.org/download.html

I try to keep up to date with most current softwares, and keep some older
stuff too.

Cheers,

Dave.

2017. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 11:49:15 UTC
From: Richard Henry <rphenry@home.com>
Message-ID: <1zC4c.4816$uh.3366@fed1read02>
Source record: 27855
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Reg Edwards" <g4fgq.regp@ZZZbtinternet.com> wrote in message
news:c2t833$4qf$1@titan.btinternet.com...
> The Hyperbolic Cosine is pronounced Cosh.
> The Hyperbolic Sine is pronounced Shine.
> The Hyperbolic Tangent is pronounced Than with a soft Th.
>
> At least that's the way I've been doing it for the last 55 years.

Have you ever noticed no one sits next to you at meetings?

>
> They don't seem to come up very often in conversation although they are
just
> as fundamental in mathematics as are the trigonometrical functions. They
> crop up all over the place especially in transmission lines where they
> appear in complex form such as Tanh(A+jB).
>
>

2018. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 11:50:12 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <c7r550h04jq4l3coh7d6om5r855hkhmmv2@4ax.com>
Source record: 27853
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Firstly, thanks to everyone who's responded to this question. I've had plenty of valuable leads to follow up on, for which I am as ever very grateful.

On Sat, 13 Mar 2004 00:16:28 GMT, James Meyer <jmeyer@nowhere.com> wrote:

> Is this a simulated circuit or a "real" one built with "real" >components?

It *is* actually a real one in this instance! Although I've simulated it as well, of course, but that hasn't provided any clues as to what might be causing the problem with the actual circuit.

> I have at least one suggestion, but I need to know whether to send an >LTspice netlist or a gif.

Send 'em both!
--

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2019. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 11:50:13 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <jer5501fi9p19vguod35e3o9f5b38cs9pk@4ax.com>
Source record: 27854
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 13 Mar 2004 10:00:52 +1000, Tony <tony_roe@tpg.com.au> wrote:

>The 5th harmonic should be only 14dB below the fundamental, although it will
>drop fairly quickly as the sides of the input square wave deviate from vertical.
>
>Does the 3.44MHz have a 50% duty cycle?

Not quite, no. Why would that make any difference? I'd have thought
any decent 'squarish wave' of the correct frequency with sharp
rise/fall edges ought to do the trick? It's spewing out the 3rd quite
nicely after all.
How about I post a pic of the sig trace into the multiplier? I'll see
if I can do that a bit later 2day...
--

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2020. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 13:51:20 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <od4650p9a43jmrm458qkemc71i9bpcdntv@4ax.com>
Source record: 27856
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Fri, 12 Mar 2004 15:02:30 -0800, John Larkin
<jjlarkin@highSNIPlandTHIStechPLEASEnology.com> wrote:

>On Fri, 12 Mar 2004 16:31:19 -0600, John Fields
><jfields@austininstruments.com> wrote:
>
>>On Fri, 12 Mar 2004 17:57:24 +0000, Paul Burridge
>><pb@osiris1.notthisbit.co.uk> wrote:
>>
>>
>>>Great. So without a spectrum analyser there's no way to tell? If I
>>>examine the output of the multiplier, it's very messy. There's a
>>>dominant 3rd harmonic alright (my frequency counter resolves it
>>>without difficulty) but the scope trace reveals a number of 'ghost
>>>traces' of different frequencies and amplitudes co-incident with the
>>>dominant trace. All rather confusing. I suppose the only answer is to
>>>build Reg's band pass filter and stick it between the inverter output
>>>and the multiplier input? <shrug>
>>
>>---
>>You may want to try something like this:
>>
>>
>> COUNTER SCOPE COUNTER
>> | | |
>> | | |
>>FIN>--[50R]-+-[1N4148>]---+----+-------+--->FOUT
>> | |
>> [L] [C]
>> | |
>>GND>----------------------+----+
>>
>>The 50 ohm resistor is the internal impedance of a function generator,
>>and when I set it to output a square wave at 1.5VPP, I got 10.8kHz for
>>the fundamental of the tank. Then I tuned the function generator down
>>until I got a peak out of the tank, and here's what I found:
>>
>> Fin Fout Vout fout/fin
>> kHz kHz VPP
>>-----|-----|------|---------
>>10.8 10.8 0.9 1.0
>>3.58 10.8 0.25 3.02 ~ 3
>>2.14 10.8 0.2 5.05 ~ 5

>>
>>So with a square wave in there were no even harmonics and it was easy
>>to trap the 3rd and 5th harmonics with a tank.
>>
>>
>>Next, I tried it with a 3VPP sine wave in and got:
>>
>> Fin Fout Vout fout/fin
>> kHz kHz VPP
>>-----|-----|------|---------
>>10.8 10.8 1.3 1.0
>>5.39 10.8 0.9 ~ 2.0
>>2.14 10.8 0.3 5.05 ~ 5
>>
>>So it looks like the second and the fifth harmonics were there. There
>>were also some other responses farther down, but I just wanted to see
>>primarily whether the fifth had enough amplitude to work with, and
>>apparently it does, so I let the rest of it slide.
>>
>>So, it looks like if you square up your oscillator's output to 50% duty
>>cycle you could get the 5th harmonic without too much of a problem. If
>>you can't, then clip the oscillator's output with a diode or make its
>>duty cycle less than or greater than 50%, and you ought to be able to
>>get the 5th that way.
>
>Historical note: about 1960, a guy at HP was doing exactly this with
>some new diodes, and he got way more higher harmonics than theory
>predicts. To figure it out, they hooked up the just-invented HP185
>sampling scope (which then used avalanche transistors to make its
>sampling pulses) and discovered the diode reverse-recovery snap
>phenom. Soon the scope itself was using this effect. They were
>originally called Boff diodes, after the discoverer Frank Boff, but
>the name didn't stick (wonder why?) and they became "snap diodes" and
>later "step-recovery diodes". I think I may have the HP Journal
>article around somewhere.
>
>See page 31:
>
>http://cp.literature.agilent.com/litweb/pdf/5980-2090E.pdf

:-)

--
John Fields

2021. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 14:08:45 UTC
From: Genome <genome@nothere.com>
Message-ID: <zAE4c.78$Q66.7@newsfe2-gui.server.ntli.net>
Source record: 27857
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in
message news:9nf350hjb0c38qibba1155fnt50v1e3s30@4ax.com...
> Hi all,
>
> I'm only trying to get 17.2Mhz out of a 3.44Mhz source and
am thus far
> failing spectrally. I've tried everything I can think of
so far to
> no avail.
>
> Any suggestions, please. I'm stumped! :(
> --
>
> The BBC: blah de blah, yawn.

Certainly. Next time you want to put your foot in your mouth
don't remove it from the end of your leg. Then you won't
be.........

Otherwise 17MHz sits in the range of a 74HC4046 PLL. I
shouldn't suggest such things lest you start asking other
questions..... but.

DNA

2022. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 14:14:23 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c2v4vv$es8$1@sparta.btinternet.com>
Source record: 27858
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

> > The Hyperbolic Cosine is pronounced Cosh.
> > The Hyperbolic Sine is pronounced Shine.
> > The Hyperbolic Tangent is pronounced Than with a soft Th.
> >
> > At least that's the way I've been doing it for the last 55 years.
==========
> Have you ever noticed no one sits next to you at meetings?
==========

I always thought it was due to B.O.

But we live and learn!

2023. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 15:31:27 UTC
From: John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com>
Message-ID: <e5a650lm0ojmovsg3b2jpkmsu7jt9denbm@4ax.com>
Source record: 27859

On Fri, 12 Mar 2004 15:32:23 +0000, Ian Bell <itb@yahoo.com> wrote:

>In RF circles, the 'normal' way to do this would be a simple Class C
>amplifier with a collector load tuned to the fifth harmonic. In calls C,
>conduction only occurs for a small fraction of a cycle which produces a
>correspondingly higher proportion of higher harmonics than a square wave.

But if you want to filter the 5th, it's mighty handy not to have nuch
4th or 6th around.

Is a Smith Chart how you map an "RF circle"?

John

2024. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 15:33:15 UTC
From: shoppa@trailing-edge.com
Message-ID: <bec993c8.0403130733.267dfd50@posting.google.com>
Source record: 27860
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:<9nf350hjb0c38qibba1155fnt50v1e3s30@4ax.com>...
> Hi all,
>
> Is there some black magic required to get higher order harmonics out
> of an oscillator?
> I'm only trying to get 17.2Mhz out of a 3.44Mhz source and am thus far
> failing spectacularly. I've tried everything I can think of so far to
> no avail. All I can get apart from the fundamental is a strong third
> harmonic on 10.32Mhz, regardless of what I tune for. I've tried
> passing the osc output through two successive inverter gates to
> sharpen it up, but still nothing beyond the third appears after tuned
> amplification for the fifth. I no longer have a spectrum analyser so
> can't check for the presence of a decent comb of harmonics at the
> input to the multiplier stage but can only assume the fifth is well
> down in the mush for some reason.

Fifth harmonic frequency multipliers do exist, but it's usually much
easier to double and triple your way to the final frequency if possible.
(You just discovered this, I think!)

The lack of even harmonics is typical of push-pull stages ... if you
are messing around with CMOS gates, you might try using a TTL gate
(which pulls low much stronger than it pulls high) or an open collector
TTL gate, both with smmallish (100-200 ohm) pull-up resistors for
doubling.

Why not do a x3 followed by a x2 to get 17.2 MHz out of 2.866 MHz?

Tim.

2025. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 15:34:57 UTC
From: John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com>
Message-ID: <hba6505tpn35brv69vl0qp0iqfuog0ja7d@4ax.com>
Source record: 27861
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 13 Mar 2004 11:50:13 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>On Sat, 13 Mar 2004 10:00:52 +1000, Tony <tony_roe@tpg.com.au> wrote:
>
>>The 5th harmonic should be only 14dB below the fundamental, although it will
>>drop fairly quickly as the sides of the input square wave deviate from vertical.
>>
>>Does the 3.44MHz have a 50% duty cycle?
>
>Not quite, no. Why would that make any difference?

As the duty cycle deviates from 50%, the even harmonics start to
appear, so you need a better filter to keep them out.

John

2026. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 16:15:53 UTC
From: kensmith@violet.rahul.net
Message-ID: <c2vc3p$8aa$5@blue.rahul.net>
Source record: 27862
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

In article <hba6505tpn35brv69vl0qp0iqfuog0ja7d@4ax.com>,
John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> wrote:
[....]
>As the duty cycle deviates from 50%, the even harmonics start to
>appear, so you need a better filter to keep them out.

Also as you get nearer the 20-80 duty cycle the amplitude of the 5th
harmonic decreases.
--
--
kensmith@rahul.net forging knowledge

2027. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 16:26:10 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <vhc650taqbos5odq0q2lonubkjia0vbsfu@4ax.com>
Source record: 27863
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 13 Mar 2004 10:00:52 +1000, Tony <tony_roe@tpg.com.au> wrote:

>The 5th harmonic should be only 14dB below the fundamental, although it will
>drop fairly quickly as the sides of the input square wave deviate from vertical.
>
>Does the 3.44MHz have a 50% duty cycle?

Okay, I've now tweaked the osc. to get as near to 50% as possible.
Alas, still no sign of any 5th present in the multiplier's output.
Here's a shot of the (fundamental) output from the inverters. I can't
see any real problem with why it shouldn't be good for a reasonable
comb of harmonics, but our experts may know better. BTW, settings were
2V/div. and 0.1uS/div.

http://www.burridge8333.fsbusiness.co.uk/trace.gif

This other trace was snapped at the base of the transistor stage that
does the multiplying. All there is (circuitry-wise) between this trace
and the last one is a 330 ohm series resistor and a 47pF cap. I'd have
expected to see some clamping action due to the b/e junction, but the
waveshape seems very odd - but does concur with the Spice simulation.
Is there anything amiss, here? (Setting here is 0.5V/div)

http://www.burridge8333.fsbusiness.co.uk/trace2.gif

Still not a sniff of a fifth! :-(
Currently building Reg's 17.2Mhz BPF to see if that can expose it.
--

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2028. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 16:51:48 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <62e650h7h4v89m962r02q8gg486go1kgek@4ax.com>
Source record: 27864
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 13 Mar 2004 07:33:15 -0800, shoppa@trailing-edge.com (Tim Shoppa)
wrote:

>Fifth harmonic frequency multipliers do exist, but it's usually much
>easier to double and triple your way to the final frequency if possible.
>(You just discovered this, I think!)

Yeah, but trying to get the 5th is hardly asking for the moon...

>The lack of even harmonics is typical of push-pull stages ... if you
>are messing around with CMOS gates, you might try using a TTL gate
>(which pulls low much stronger than it pulls high) or an open collector
>TTL gate, both with smmallish (100-200 ohm) pull-up resistors for
>doubling.

I've a reasonably fast Schmitt I'm going to stick in there in place of
the 74HC04 before I resort to anything fancy (same pin-out).

>Why not do a x3 followed by a x2 to get 17.2 MHz out of 2.866 MHz?

Because I don't have a rock lying about for that fundamental!

Hopefully some supreme being here will spot a problem with the traces
I've now posted...
--

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2029. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 17:21:22 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c2vfui$kp1$1@freenet9.carleton.ca>
Source record: 27865

John Larkin (jjlarkin@highlandSNIPtechTHISnologyPLEASE.com) writes:
> On Fri, 12 Mar 2004 15:32:23 +0000, Ian Bell <itb@yahoo.com> wrote:
>
>>In RF circles, the 'normal' way to do this would be a simple Class C
>>amplifier with a collector load tuned to the fifth harmonic. In calls C,
>>conduction only occurs for a small fraction of a cycle which produces a
>>correspondingly higher proportion of higher harmonics than a square wave.
>
> But if you want to filter the 5th, it's mighty handy not to have nuch
> 4th or 6th around.
>
But one of the problems Paul seems to be having, on an ongoing basis,
is the lack of a historical perspective.

He's going the digital route because that's where he comes from, and
therefore he extends the idea. But anyone of us who have been around for
a while, or even has just spent time with older books and magazines, knows
that RF multipliers was done all the time before digital circuits had
made much inroad.

WItness the thread about VXOs a while back. He started with a digital
oscillator, again because that's all he knows, and then sets out to
pull it as much as possible. But this too has been done before, and
doing some research in older ham magazines would have shown the problems
and solutions.

Maybe "oldtimers" are biased towards what they grew up with. But I see
time after time in the sci.electronics.* hierarchy people wanting to do
RF and see it as simply extending audio or digital concepts they already know.
So they suddenly need a 5MHz oscillator, and wonder why they aren't having
success with a function generator type IC, where the needed frequency is
at it's upper limit. "How can I make an active filter at 10MHz" is not
usually someone who has a specific need for an active filter at that
frequency, but from someone who is used to active filters and has yet to
see their limitations, or maybe more importantly, are unaware of what's
normally done at RF. A coil is pretty bulky at 1KHz, but at 10MHz it's
downright easy to wind.

And I do find it interesting, to see fairly complicated answers for
problems that were solved a long time ago, simply by coming from a different
angle.

Michael VE2BVW

2030. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 17:42:37 UTC
From: legg@magma.ca
Message-ID: <e715b5cc.0403130942.45e5ba4b@posting.google.com>
Source record: 27866

budgie <me@privacy.net> wrote in message
news:<cck550hsgbben56i0cfnj0b09vtm5cu7lc@4ax.com>...
> On Fri, 12 Mar 2004 15:32:23 +0000, Ian Bell <itb@yahoo.com> wrote:
>
> >Paul Burridge wrote:
> >
>
> >
> >In RF circles, the 'normal' way to do this would be a simple Class C
> >amplifier with a collector load tuned to the fifth harmonic. In calls C,
> >conduction only occurs for a small fraction of a cycle which produces a
> >correspondingly higher proportion of higher harmonics than a square wave.
>
> I've been waiting for someone to post this. I would only add "The drive level,
> and the bais point, will vary the amount of fifth (or whichever) you will see."
>
> It's as common as noses in RF, as Ian pointed out. Just look at the average
> two-way radio prior to frequency synthesisers. Crystal freqs were multiplied
> this way in transmitter chains and for receive injection, although use of fifth
> wasn't especially common because you normally had enough design control to use
> the more efficient *2, *3 or *4.

'Tune for smoke' isn't an option for most new products, which have to
be manufactured without hands.

Better to pick a suitable duty cycle (or more likely a conduction time
period in a digital circuit), that has an efficient 5th harmonic
component, including delays, at low power levels.

http://www.wenzel.com/pdffiles/choose.pdf

RL

2031. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 17:45:23 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c2vhbj$f6q$1@titan.btinternet.com>
Source record: 27867
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Here's the solution. Build a 17.2 one-transistor LC oscillator. It will easily lock to an injection of the 5th harmonic of 3.44 Mhz at any output level you like.

Whatever you do don't go for phase locked loops.

Junk your Spice. It tells you nothing you didn't already ought to know. If you don't know it then you shouldn't be doing the job anyway.

You must have plenty of room on the PCB. But why don't you invest in a 17.2 MHz quartz crystal. They're cheap enough. You've already spent more time and trouble on research and investigation. Cut your losses.

Redundency is a serious crime. It degrades reliabilty. Reliability is Quality versus Time. Every individual component must serve a recognisable, readily understandable purpose. If it's not understood then it shouldn't be there.

High Quality is adherence to the specified intended purpose.

Now I suppose some bright spark will say deliberate redundency can improve reliability. But ONLY when all else has failed.

Reg.

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message news:vhc650taqbos5odq0q2lonubkjia0vbsfu@4ax.com...
> On Sat, 13 Mar 2004 10:00:52 +1000, Tony <tony_roe@tpg.com.au> wrote:
>
> >The 5th harmonic should be only 14dB below the fundamental, although it will
> >drop fairly quickly as the sides of the input square wave deviate from vertical.
> >
> >Does the 3.44MHz have a 50% duty cycle?
>
> Okay, I've now tweaked the osc. to get as near to 50% as possible.
> Alas, still no sign of any 5th present in the multiplier's output.
> Here's a shot of the (fundamental) output from the inverters. I can't
> see any real problem with why it shouldn't be good for a reasonable
> comb of harmonics, but our experts may know better. BTW, settings were
> 2V/div. and 0.1uS/div.
>
> http://www.burridge8333.fsbusiness.co.uk/trace.gif
>

> This other trace was snapped at the base of the transistor stage that
> does the multiplying. All there is (circuitry-wise) between this trace
> and the last one is a 330 ohm series resistor and a 47pF cap. I'd have
> expected to see some clamping action due to the b/e junction, but the
> waveshape seems very odd - but does concur with the Spice simulation.
> Is there anything amiss, here? (Setting here is 0.5V/div)
>
> http://www.burridge8333.fsbusiness.co.uk/trace2.gif
>
> Still not a sniff of a fifth! :-(
> Currently building Reg's 17.2Mhz BPF to see if that can expose it.
> --
>
> The BBC: Licensed at public expense to spread lies.

2032. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 17:57:05 UTC
From: legg <legg@nospam.magma.ca>
Message-ID: <uki6505np1ps7f6mchlpeomspppubgv39v@4ax.com>
Source record: 27868
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Fri, 12 Mar 2004 13:56:10 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>Hi all,
>
>Is there some black magic required to get higher order harmonics out
>of an oscillator?
>I'm only trying to get 17.2Mhz out of a 3.44Mhz source and am thus far
>failing spectacularly. I've tried everything I can think of so far to
>no avail. All I can get apart from the fundamental is a strong third
>harmonic on 10.32Mhz, regardless of what I tune for. I've tried
>passing the osc output through two successive inverter gates to
>sharpen it up, but still nothing beyond the third appears after tuned
>amplification for the fifth. I no longer have a spectrum analyser so
>can't check for the presence of a decent comb of harmonics at the
>input to the multiplier stage but can only assume the fifth is well
>down in the mush for some reason. I could change the inverters for
>schmitt triggers and gain a couple of nS but can't see that making
>enough difference. What about sticking a varactor in there somewhere?
>Would its non-linearity assist or are they only any good for even
>order harmonics?
>Any suggestions, please. I'm stumped! :(

Certain duty cycles contain better 5th harmonic component amplitudes.
A graph of fourier components is a useful guide -

http://www.wenzel.com/pdffiles/choose.pdf

One precaution; the chart in this article does not include phase
information - this can reverse - which may be important for timing.

RL

2033. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 18:37:13 UTC
From: John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com>
Message-ID: <a0l650p14c49nmjprt0aev5b2slk3r1ri0@4ax.com>
Source record: 27869
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 13 Mar 2004 16:26:10 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>
>Okay, I've now tweaked the osc. to get as near to 50% as possible.
>Alas, still no sign of any 5th present in the multiplier's output.
>Here's a shot of the (fundamental) output from the inverters. I can't
>see any real problem with why it shouldn't be good for a reasonable
>comb of harmonics, but our experts may know better. BTW, settings were
>2V/div. and 0.1uS/div.
>
>http://www.burridge8333.fsbusiness.co.uk/trace.gif
>

That waveform *has* bunches of 5th harmonic. All you need is a
properly functioning bandpass filter to pluck it out.

John

2034. TS850. Want 300mW output by use of ALC.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 18:37:39 UTC
From: Rv! <no@spam.here.thanks>
Message-ID: <1079203059.26053.0@nnrp-t71-03.news.uk.clara.net>
Source record: 27870

Hi all,
I want to drive a transverter from my TS850.
I know there's a mod that's available for the rig but it is
a bit OTT as it required extensive mods.

I an thinking of building an attenuator (20dB) to take the
rig from 30w to 320mW to drive the TVTR. However I am wondering
how the ALC control might be used to help.

Will the ALC input on the radio be able to hold the radio at
300mW directly? I don't really think it will so I will probably
use the attenuator and use the ALC to hold the radio down to 30w.

Has anyone use dthe ALC dierctly on this radio? Seems it is a -V
input, but having never had to interface to this I am not sure.
Electronically I'm fine so any advice on the expected signals to
the rigs ALC would be appreciated.

I will also build a small sequencing unit to ensure the PTT is
applied nicely to the various units.

TIA..

Robert

2035. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 18:50:42 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <9ok650l1llm3ksfmd0s2321a5rud9oinn3@4ax.com>
Source record: 27871
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 13 Mar 2004 16:26:10 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>On Sat, 13 Mar 2004 10:00:52 +1000, Tony <tony_roe@tpg.com.au> wrote:
>
>>The 5th harmonic should be only 14dB below the fundamental, although it will
>>drop fairly quickly as the sides of the input square wave deviate from vertical.
>>
>>Does the 3.44MHz have a 50% duty cycle?
>
>Okay, I've now tweaked the osc. to get as near to 50% as possible.
>Alas, still no sign of any 5th present in the multiplier's output.
>Here's a shot of the (fundamental) output from the inverters. I can't
>see any real problem with why it shouldn't be good for a reasonable
>comb of harmonics, but our experts may know better. BTW, settings were
>2V/div. and 0.1uS/div.
>
>http://www.burridge8333.fsbusiness.co.uk/trace.gif

That's close enough to 50% that you should have no problem generating
and extracting a fifth harmonic.

>This other trace was snapped at the base of the transistor stage that
>does the multiplying. All there is (circuitry-wise) between this trace
>and the last one is a 330 ohm series resistor and a 47pF cap. I'd have
>expected to see some clamping action due to the b/e junction, but the
>waveshape seems very odd - but does concur with the Spice simulation.
>Is there anything amiss, here? (Setting here is 0.5V/div)
>
>http://www.burridge8333.fsbusiness.co.uk/trace2.gif

If you've got the cap and resistor in series with the base, and no other
circuitry in there, then what you're doing is half-wave rectifying the
square wave in the base-to-emitter diode, and that's what you're seeing,
along with what looks like some AC at the fundamental riding on the
falling peaks and rising valleys of the square wave. The reason you
can't see the fifth harmonic is because it's far enough down that
everything else is so much higher in voltage that it's essentially down
in the mud. If you want the fifth out, you'll have to extract it using
a filter of some sort, the easiest being a series tuned trap or a
parallel tuned tank.

Why don't you post your schematic so we can see exactly what you're doing?

>Still not a sniff of a fifth! :-(
>Currently building Reg's 17.2Mhz BPF to see if that can expose it.

That'll probably do it, but it needs to go on the output of the multiplier, not between the square wave generator and the input, I think.

Again, why don't you post a schematic of what you're up to? Please?-)

--
John Fields

2036. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 19:00:19 UTC
From: averyfineman@aol.com
Message-ID: <20040313140019.07984.00001087@mb-m22.aol.com>
Source record: 27873

In article <62e650h7h4v89m962r02q8gg486go1kgek@4ax.com>, Paul Burridge
<pb@osiris1.notthisbit.co.uk> writes:

>On 13 Mar 2004 07:33:15 -0800, shoppa@trailing-edge.com (Tim Shoppa)
>wrote:
>
>>Fifth harmonic frequency multipliers do exist, but it's usually much
>>easier to double and triple your way to the final frequency if possible.
>>(You just discovered this, I think!)
>
>Yeah, but trying to get the 5th is hardly asking for the moon...

In a way, it IS. Fifth harmonic of an infinitely sharp transition
rectangular waveform is still low in energy compared to the
fundamental. Chances are that a single stage using an active
device as a quintupler will NOT be successful, transistor or tube
(valve).

Let's get to some specifics on this problem -

1. Let us know what you are using to determine whether or not
a 5th harmonic exists. The lack of indication may be due to
whatever it is (not a spectrum analyzer) being used.
2. Describe the multiplier stage in more detail and include an
approximate level and impedance/admittance of the RF
source. That would include supply rails and biasing.
3. Describe whatever is being used to select the 5th harmonic
and inhibit the fundamental and other harmonics. There's
lots of energy at many different frequencies floating around
there and you only want one frequency.
4. Review again with us the output drive level requirements so
we can get a handle on that.
5. If you are using an oscilloscope to measure the fundamental
waveform, estimate the actual risetime/falltime based on the
rise/fall times limits of the oscilloscope. That yields some
basic data that can be applied to a Fourier series to determine
the level of 5th harmonic energy you have to work with. [that
will also reveal the approximate frequency limits of the scope]

>>The lack of even harmonics is typical of push-pull stages ... if you
>>are messing around with CMOS gates, you might try using a TTL gate
>>(which pulls low much stronger than it pulls high) or an open collector
>>TTL gate, both with smmallish (100-200 ohm) pull-up resistors for
>>doubling.
>
>I've a reasonably fast Schmitt I'm going to stick in there in place of

>the 74HC04 before I resort to anything fancy (same pin-out).
>
>>Why not do a x3 followed by a x2 to get 17.2 MHz out of 2.866 MHz?
>
>Because I don't have a rock lying about for that fundamental!

Hint: A mixed 2x and 3x = 5x out if filtered to pass that. No lying-around rock needed. [not an optimum solution]

Note: As already pointed out, a single PLL IC can do the job in the same PCB footprint.

When frustration hits a peak, it's time to sit back away from the problem and do an objective review of what is the overall task and what you've accomplished so far and what you know about certain circuits fundamentals. General problem descriptions only result in general solutions without quantitative values needed for a specific application.

I've found that NON-linear circuits (a multiplier stage is definietly in the non-linear category) take rather more development time than a linear circuit. There's lots of different things going on in a multiplier circuit and those have to be considered for the whole.

>Hopefully some supreme being here will spot a problem with the traces
>I've now posted...

Try as we might in the depths of our frustrations, supreme beings tend not to intervene in us humans' petty affairs. :-)

Len Anderson
retired (from regular hours) electronic engineer person

2037. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 19:00:20 UTC
From: averyfineman@aol.com
Message-ID: <20040313140020.07984.00001088@mb-m22.aol.com>
Source record: 27872

In article <cck550hsgbben56i0cfnj0b09vtm5cu7lc@4ax.com>, budgie
<me@privacy.net> writes:

>On Fri, 12 Mar 2004 15:32:23 +0000, Ian Bell <itb@yahoo.com> wrote:
>
>>Paul Burridge wrote:
>>
>>> Hi all,
>>>
>>> Is there some black magic required to get higher order harmonics out
>>> of an oscillator?
>>> I'm only trying to get 17.2Mhz out of a 3.44Mhz source and am thus far
>>> failing spectacularly. I've tried everything I can think of so far to
>>> no avail. All I can get apart from the fundamental is a strong third
>>> harmonic on 10.32Mhz, regardless of what I tune for.
>>
>>In RF circles, the 'normal' way to do this would be a simple Class C
>>amplifier with a collector load tuned to the fifth harmonic. In calls C,
>>conduction only occurs for a small fraction of a cycle which produces a
>>correspondingly higher proportion of higher harmonics than a square wave.
>
>I've been waiting for someone to post this. I would only add "The drive
level,
>and the bais point, will vary the amount of fifth (or whichever) you will
see."
>
>It's as common as noses in RF, as Ian pointed out. Just look at the average
>two-way radio prior to frequency synthesisers. Crystal freqs were multiplied
>this way in transmitter chains and for receive injection, although use of
fifth
>wasn't especially common because you normally had enough design control to
>use the more efficient *2, *3 or *4.

Fifty years ago that was mostly true and multiplier stages rarely went
beyond the 4th harmonic. Two notable exceptions, though -

A circa 1950 design by General Electric for an 1800 MHz radio relay
terminal used a SEPTUPLER via a 2C39 planar triode. [7 x multiplier]
Roughly 260 MHz input following a buffer stage from a 5th overtone
crystal oscillator. Used in both transmitter and receiver panels ("dish-
pan" style, chassis = rack panel) with the receiver septupler driving
the mixer. Fussy to tune but stayed there once tuned.

Another G.E. design of the early 1950s used Locked Oscillators in a
TV broadcast local color subcarrier supply. Locked oscillators operate

on integral multiples of the input and their use was almost extinct back then. That was deemed necessary in the G.E. design for an 11 x multiplier, the highest direct multiple I've encountered. A locked oscillator can also operate as a divider as G.E. did. The 3.58 MHz crystal could also be phase-locked to a network feed color burst.

However, all those multiplier types went the way of the dinosaur when PLLs operating directly at the desired frequency came into being. There isn't any advantage to using those old "exotic" technologies other than in restoration for nostalgia's sake.

Quintuplers CAN be made, but, so far, Paul hasn't explained enough specifics about his circuit, or how he is sensing any 5th harmonic for any of us to get a good handle on a possible aid.

Note: Lacking any spectrum analyzer, a wide-range HF receiver with an S meter can be an indicator...but such needs to be checked against a calibrated signal generator for compensation of varying S meter indication versus input levels. That's what I use for checking HF levels (Icom R70) and it has been calibrated against a reasonably-known-level RF source.

Len Anderson
retired (from regular hours) electronic engineer person

2038. FS: Peanut Whistle Two

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 19:07:54 UTC
From: wa8mea@hotmail.com
Message-ID: <8a260fb2.0403131107.42a3e5eb@posting.google.com>
Source record: 27874

FS: Peanut Whistle 2. Have a demo "PW2" on my shelf. A photo is at my website. Click "Peanut Whistle" at left menu. Only difference between photo & actual xmtr is the use of RCA phono jacks for the 14v input & for the antenna feed. Also used crafted "hobby wood" to mount the xmtr/code key. Assembled xmtr, key and 7.040 mhz crystal ALL for just $39.95. I will pay for shipping/insurance. Use this xmtr with any portable rcvr,(ie: Sangean 909, Grundig YB-400, Sony 7600) for a FUN lil' QRP station! First e-mail gets it! 73, Bill, WA8MEA, wa8mea@hotmail.com, http://qth.com/dwm

2039. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 19:34:46 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403131134.1225834a@posting.google.com>
Source record: 27879
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

In addition to what John L. posted about adding in 4th and 6th
harmonics and making it harder to filter, if you have a 40% or 60% (or
20% or 80%) duty cycle, there will be NO fifth harmonic. From what
you've posted, that likely is the crux of your problem.

Cheers,
Tom

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:<jer5501fi9p19vguod35e3o9f5b38cs9pk@4ax.com>...
> On Sat, 13 Mar 2004 10:00:52 +1000, Tony <tony_roe@tpg.com.au> wrote:
>
> >The 5th harmonic should be only 14dB below the fundamental, although it will
> >drop fairly quickly as the sides of the input square wave deviate from vertical.
> >
> >Does the 3.44MHz have a 50% duty cycle?
>
> Not quite, no. Why would that make any difference? I'd have thought
> any decent 'squarish wave' of the correct frequency with sharp
> rise/fall edges ought to do the trick? It's spewing out the 3rd quite
> nicely after all.
> How about I post a pic of the sig trace into the multiplier? I'll see
> if I can do that a bit later 2day...

2040. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 19:38:45 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <fqn650tdg5pl0s21femtrbgnaqgfdmtt7b@4ax.com>
Source record: 27876
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 13 Mar 2004 17:45:23 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@ZZZbtinternet.com> wrote:

>Here's the solution. Build a 17.2 one-transistor LC oscillator. It will
>easily lock to an injection of the 5th harmonic of 3.44 Mhz at any output
>level you like.
>
>Whatever you do don't go for phase locked loops.
>
>Junk your Spice. It tells you nothing you didn't already ought to know. If
>you don't know it then you shouldn't be doing the job anyway.
>
>You must have plenty of room on the PCB. But why don't you invest in a 17.2
>MHz quartz crystal. They're cheap enough. You've already spent more time
>and trouble on research and investigation. Cut your losses.

Hi Reg,

I'm not into cutting my losses and taking the easy way out; I wouldn't
learn anything by doing so. This circuit *ought* to work and I hope
to find out why it doesn't and remedy the situation.
I can't build a 17.2Mhz osc. I need to start much lower to multiply up
the 'pullability' of the fundamental to the best part of half a Meg.
Try doing that with a quartz xtal at 17Mhz! Sorry, I mean no offence I
know you're unaware of the background to this project.
BTW, I've built the filter your s/ware designed and it works pretty
much as advertised - bang on 17.2Mhz pass[1] and the third harmonic of
the fundamental at just over 10Mhz is *well* down by a factor of 80X
(sorry, can't be arsed to work out the dB equivalent). The coils I
used to build it were designed with one of your other programs, BTW!
Many thanks indeed. I urge anyone else reading this in r.r.a.hb to
grab Reg's programs whilst they can; they're *extremely* useful and
Reg deserves a vote of thanks from us all for taking the time and
trouble to write them.

[1] Significant spurious pass response at 13.2Mhz for some reason
(probably my use of inappropriate capacitors for the sake of
expediency - Spice didn't predict it) fortunately it just misses the
fourth harmonic!
--

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2041. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 19:38:47 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <mfo650h7ai4h5ss3ol3cs4m89gnkids026@4ax.com>
Source record: 27877
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 13 Mar 2004 10:37:13 -0800, John Larkin
<jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> wrote:

>On Sat, 13 Mar 2004 16:26:10 +0000, Paul Burridge
><pb@osiris1.notthisbit.co.uk> wrote:
>
>>
>>Okay, I've now tweaked the osc. to get as near to 50% as possible.
>>Alas, still no sign of any 5th present in the multiplier's output.
>>Here's a shot of the (fundamental) output from the inverters. I can't
>>see any real problem with why it shouldn't be good for a reasonable
>>comb of harmonics, but our experts may know better. BTW, settings were
>>2V/div. and 0.1uS/div.
>>
>>http://www.burridge8333.fsbusiness.co.uk/trace.gif
>>
>
>
>That waveform *has* bunches of 5th harmonic. All you need is a
>properly functioning bandpass filter to pluck it out.

You must have bloody good eyesight, John! :-)
BTW, can you recommend a sub nS Schmitt inverter that's easily
obtainable?
--

The BBC: Licensed at public expense to spread lies.

2042. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 19:38:48 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <oho650pc7slq27jlh10dl2se1s4o6sm8t7@4ax.com>
Source record: 27878
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 13 Mar 2004 12:50:42 -0600, John Fields
<jfields@austininstruments.com> wrote:

>That's close enough to 50% that you should have no problem generating
>and extracting a fifth harmonic.

Thanks, John. I'd have been surprised if having tweaked it for maximum
50:50 this still wasn't good enough (it's only a tiny bit out now).

>If you've got the cap and resistor in series with the base, and no other
>circuitry in there, then what you're doing is half-wave rectifying the
>square wave in the base-to-emitter diode, and that's what you're seeing,
>along with what looks like some AC at the fundamental riding on the
>falling peaks and rising valleys of the square wave. The reason you
>can't see the fifth harmonic is because it's far enough down that
>everything else is so much higher in voltage that it's essentially down
>in the mud. If you want the fifth out, you'll have to extract it using
>a filter of some sort, the easiest being a series tuned trap or a
>parallel tuned tank.

I've lashed up a 17.2Mhz BPF that should do the trick just fine. It'll
be a bit of a fiddle trying to hook it into the existing circuit but
I'll do my best.

>Why don't you post your schematic so we can see exactly what you're
>doing?

Will do....
--

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2043. Re: Homebrew Antenna ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 19:40:15 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403131140.3254b4dc@posting.google.com>
Source record: 27880

A better place to post this would be rec.radio.amateur.antenna.

Suggest you post a bit more about how you will judge "best." That is,
what bands/frequencies do you want it to cover? Is it for receiving
or transmitting or both? What sort of listening do you want to do, or
contacts do you want to make? Clearly, there is no one "best" or
everyone would be using that. It depends on your constraints and what
you want to accomplish with it.

Cheers,
Tom

"Bob" <nubob5001@yahoo.com> wrote in message
news:<hsb4c.6421$n37.520554@read2.cgocable.net>...
> Hi,
> What is the best homebrew antenna our there to make? I have a 50ft tower
> that I have had a 22ft something omni telescoping aluminum antenna with some
> as long as possible ground planes (4). It works good on most bands, I have a
> good antenna tuner. I have to bring it down and fix it so wondering what
> alternatives are available to throw back up. I like to keep the omni style.
> What would be a practical length for the whip and or is there a copper wire
> style antenna that would perform better? Thanks for opinions!!!

2044. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 19:47:12 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <i8p6501hivmit0spqg8ofkkljgn7t10nta@4ax.com>
Source record: 27881
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 13 Mar 2004 12:50:42 -0600, John Fields
<jfields@austininstruments.com> wrote:

>Again, why don't you post a schematic of what you're up to? Please?-)

The schematic is now on abse....

--

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2045. WTB-4 pin E.F. Johnson tube skts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 20:22:51 UTC
From: "Jim L." <jfladd@flash.net>
Message-ID: <v4K4c.24013$gc3.7283@newssvr31.news.prodigy.com>
Source record: 27882

Greetings- would like to buy one or two ceramic tube sockets for 811's or 572B's, such as E.F.J. no.224. Tnx, Jim, K8JL, jfladd@flash.net

2046. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 20:35:34 UTC
From: John Woodgate <jmw@jmwa.demon.contraspam.yuk>
Message-ID: <rFEP3+CWC3UAFwvs@jmwa.demon.co.uk>
Source record: 27883
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

I read in sci.electronics.design that Reg Edwards
<g4fgq.regp@ZZZbtinternet.com> wrote (in <c2uj2dofp1@hercules.btintern
et.com>) about 'Extracting the 5th Harmonic', on Sat, 13 Mar 2004:
>Then along came Oliver Heaviside who turned the World upside down by
>replacing jw with p.

I should probably change my name to Phon .oodgate in his honour. (;-)
--
Regards, John Woodgate, OOO - Own Opinions Only.
The good news is that nothing is compulsory.
The bad news is that everything is prohibited.
http://www.jmwa.demon.co.uk Also see http://www.isce.org.uk

2047. Re: Ameco AC-1 problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 20:42:35 UTC
From: n2ey@aol.comSPAMNO
Message-ID: <20040313154235.12631.00005512@mb-m28.aol.com>
Source record: 27884

In article <BC77A844.1EE8%outhouse@midcoast.com>, Uwe <outhouse@midcoast.com>
writes:

>When I increase the plate voltage to 325V my 2. grid runs about 280V and the
>plate current increases to about 65 mA. I don't really dare to do that
>without knowing the max values on that tube.
> I guess I could lower the 2. grid voltage by increasing the value of the
>resistor connectd to it.
>I don't know if that would lower my plate current to what you get.

Uwe,

How are you tuning up the transmitter? Are you adjusting the plate capacitor
for minimum current?

73 de Jim, N2EY

2048. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-13 21:31:26 UTC
From: John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com>
Message-ID: <c6u650198bbibauouddlf1acm8vrj342qp@4ax.com>
Source record: 27885
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 13 Mar 2004 19:38:47 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>On Sat, 13 Mar 2004 10:37:13 -0800, John Larkin
><jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> wrote:
>
>>On Sat, 13 Mar 2004 16:26:10 +0000, Paul Burridge
>><pb@osiris1.notthisbit.co.uk> wrote:
>>
>>>
>>>>Okay, I've now tweaked the osc. to get as near to 50% as possible.
>>>>Alas, still no sign of any 5th present in the multiplier's output.
>>>>Here's a shot of the (fundamental) output from the inverters. I can't
>>>>see any real problem with why it shouldn't be good for a reasonable
>>>>comb of harmonics, but our experts may know better. BTW, settings were
>>>>2V/div. and 0.1uS/div.
>>>>
>>>>http://www.burridge8333.fsbusiness.co.uk/trace.gif
>>>>
>>>
>>>
>>>That waveform *has* bunches of 5th harmonic. All you need is a
>>>properly functioning bandpass filter to pluck it out.
>>
>>You must have bloody good eyesight, John! :-)

You can count the graticule lines fairly well; it's close to 50%, and
the edges are fairly fast. And no, in fact I have terrible eyesight.

>BTW, can you recommend a sub nS Schmitt inverter that's easily
>obtainable?

I don't know of any really fast Schmitts. An HC14 followed by an AC04
should have fast edges. My favorite thing like this is an OnSemi
NL37WZ16 with all three sections in parallel. Powered from +6 or so,
it puts 5 volts into 50 ohms in something like 750 ps.

The old original RCA AC-series parts were sub-ns - crude and rude,
they were - but some ACs are now a little slower to reduce ground
bounce.

Most of the LVDS-to-TTL LVDS line receivers make damned fine
comparators with sub-ns output edges.

For screaming edges, there's always the step-recovery diode, or a medium-power gaasfet like the CLY2.

John

2049. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 00:12:40 UTC
From: Dave VanHorn <dvanhorn@cedar.net>
Message-ID: <GK-dnc7ZvrD1GcndRVn-vA@comcast.com>
Source record: 27758
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Mike Andrews" <mikea@mikea.ath.cx> wrote in message
news:c2shs0uuo3@puck.litech.org...
> In <9nf350hjb0c38qibba1155fnt50v1e3s30@4ax.com>
(rec.radio.amateur.homebrew), Paul Burridge wrote:
> > Hi all,
>
> > Is there some black magic required to get higher order harmonics out
> > of an oscillator?

The crystal osc itself, probably is sine wave, and therefore has low 5th
content.
Square it up, then pass through a filter, and moderate Q parallel resonant
tank on the 5th harmonic.

2050. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 00:35:06 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <co8750th7qimeildub1bksr7s2510saojn@4ax.com>
Source record: 27886

On 13 Mar 2004 19:00:20 GMT, averyfineman@aol.com (Avery Fineman)
wrote:

[nostalgic history lesson snipped]
> Quintuplers CAN be made, but, so far, Paul hasn't explained
> enough specifics about his circuit, or how he is sensing any 5th
> harmonic for any of us to get a good handle on a possible aid.

There's now the schematic of the relevant stages viewable on abse. If
there's anything else that's unclear, please feel free to ask for
clarification.

> Note: Lacking any spectrum analyzer, a wide-range HF receiver
> with an S meter can be an indicator...but such needs to be checked
> against a calibrated signal generator for compensation of varying
> S meter indication versus input levels. That's what I use for
> checking HF levels (Icom R70) and it has been calibrated against
> a reasonably-known-level RF source.

Len, you're a genius! I'd totally forgotten about that old dodge. Now
I have just the job in the attic: an aging Yaesu FT767GX that hasn't
been used for years, just lying around waiting to have its front end
blown up! :-)
Thanks!
--

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2051. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 00:35:08 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <g09750hsjals7tr78elk4ovbensoensrp0@4ax.com>
Source record: 27887
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 13 Mar 2004 11:34:46 -0800, k7itm@aol.com (Tom Bruhns) wrote:

>In addition to what John L. posted about adding in 4th and 6th
>harmonics and making it harder to filter, if you have a 40% or 60% (or
>20% or 80%) duty cycle, there will be NO fifth harmonic. From what
>you've posted, that likely is the crux of your problem.

Nope! You obviously haven't seen the scope traces I posted earlier
(given a clean bill of health by John Fields). Keep thinking!
--

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2052. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 00:35:08 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <t29750h7jv97e4637203sfm0p9sp1o0bus@4ax.com>
Source record: 27888
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 13 Mar 2004 13:31:26 -0800, John Larkin
<jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> wrote:

>I don't know of any really fast Schmitts. An HC14 followed by an AC04
>should have fast edges. My favorite thing like this is an OnSemi
>NL37WZ16 with all three sections in parallel. Powered from +6 or so,
>it puts 5 volts into 50 ohms in something like 750 ps.
>
>The old original RCA AC-series parts were sub-ns - crude and rude,
>they were - but some ACs are now a little slower to reduce ground
>bounce.
>
>Most of the LVDS-to-TTL LVDS line receivers make damned fine
>comparators with sub-ns output edges.
>
>For screaming edges, there's always the step-recovery diode, or a
>medium-power gaasfet like the CLY2.

Thanks, John.
I don't see the need for anything super-fast in this instance (I mean
- 3 to4 Mhz for God's sake) but was just curious as to what they use
in UHF and beyond...
2morrow I'm going to stick Reg's 17.2Mhz BPF in line and see if that
kills the 3rd enough to allow the 5th to thrive.
--

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2053. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 00:35:10 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <5c97501d6qm4m8n5sud4eroig46fsm8b44@4ax.com>
Source record: 27889

On 13 Mar 2004 19:00:19 GMT, averyfineman@aol.com (Avery Fineman)
wrote:

> In a way, it IS. Fifth harmonic of an infinitely sharp transition
> rectangular waveform is still low in energy compared to the
> fundamental. Chances are that a single stage using an active
> device as a quintupler will NOT be successful, transistor or tube
> (valve).

I find that surprising but bow to your superior knowledge...

> Let's get to some specifics on this problem -

> 1. Let us know what you are using to determine whether or not
> a 5th harmonic exists. The lack of indication may be due to
> whatever it is (not a spectrum analyzer) being used.

As I said, since I've disposed of my SA I have no way of detecting the
presence of the 5th unless it's strong enough to be seen by 'scope or
read by my frequency counter. (Except for your brilliant idea of using
an HF rx, that is, which I intend to implement 2morrow).

> 2. Describe the multiplier stage in more detail and include an
> approximate level and impedance/admittance of the RF
> source. That would include supply rails and biasing.

There's a circuit diagram now viewable on abse under a similar thread
title. That should answer all your queries...

> 3. Describe whatever is being used to select the 5th harmonic
> and inhibit the fundamental and other harmonics. There's
> lots of energy at many different frequencies floating around
> there and you only want one frequency.

Nothing more than what you can see in the schematic's two stages.

> 4. Review again with us the output drive level requirements so
> we can get a handle on that.

It's got to eventually end up feeding another CMOS inverter for a
tripler stage.

> 5. If you are using an oscilloscope to measure the fundamental
> waveform, estimate the actual risetime/falltime based on the
> rise/fall times limits of the oscilloscope. That yields some
> basic data that can be applied to a Fourier series to determine
> the level of 5th harmonic energy you have to work with. [that
> will also reveal the approximate frequency limits of the scope]

I prefer to go by the device's datasheet. In this case, the r/f times
are 7 to 8nS.

If there's anything I've missed out, lemme know...

--

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2054. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 01:23:45 UTC
From: Active8 <reply2group@ndbbm.net>
Message-ID: <17fw5ugudbxgo$.dlg@news.individual.net>
Source record: 27890
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 13 Mar 2004 16:51:48 +0000, Paul Burridge wrote:

> On 13 Mar 2004 07:33:15 -0800, shoppa@trailing-edge.com (Tim Shoppa)
> wrote:
>
>>Fifth harmonic frequency multipliers do exist, but it's usually much
>>easier to double and triple your way to the final frequency if possible.
>>(You just discovered this, I think!)
>
> Yeah, but trying to get the 5th is hardly asking for the moon...
>
>>The lack of even harmonics is typical of push-pull stages ... if you
>>are messing around with CMOS gates, you might try using a TTL gate
>>(which pulls low much stronger than it pulls high) or an open collector
>>TTL gate, both with smmallish (100-200 ohm) pull-up resistors for
>>doubling.
>
> I've a reasonably fast Schmitt I'm going to stick in there in place of
> the 74HC04 before I resort to anything fancy (same pin-out).
>
>>Why not do a x3 followed by a x2 to get 17.2 MHz out of 2.866 MHz?
>
> Because I don't have a rock lying about for that fundamental!
>
> Hopefully some supreme being here will spot a problem with the traces
> I've now posted...

Just a rough guess, since your calling on supreme beings...

That input cap... I take it the input source is a reasonable
estimate of your square wave... if the time constant of that input
RC net isn't right, it'll be a differentiator, and turn your square
wave into pulses coincident with the rising and falling edges. Your
scope trace suggested otherwise, but IIRC, at that tin=me you were
using the filter at the input to the mult., xo things have changed.

It doesn't look like you're biased in Class C. All the mults I've
seen are Class C biased with the tuned circuit on the collector. And
remember, when you're doing this later for some other purpose, in
Class C, the transistors Vceo - reverse breakdown - must be at least
twice the supply voltage.

--
Best Regards,
Mike

2055. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 01:26:13 UTC
From: budgie <me@privacy.net>
Message-ID: <h4d75015qd9fqpd1qh03880rja62fqg0lg@4ax.com>
Source record: 27891
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 13 Mar 2004 20:35:34 +0000, John Woodgate
<jmw@jmwa.demon.contraspam.yuk> wrote:

>I read in sci.electronics.design that Reg Edwards
><g4fgq.regp@ZZZbtinternet.com> wrote (in <c2uj2dofp1@hercules.btintern
>et.com>) about 'Extracting the 5th Harmonic', on Sat, 13 Mar 2004:
>>Then along came Oliver Heaviside who turned the World upside down by
>>replacing jw with p.
>
>I should probably change my name to Phon .oodgate in his honour. (;-)

It came out as Poodgate in my use of the transform ... ;-)

2056. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 01:32:42 UTC
From: budgie <me@privacy.net>
Message-ID: <ced750h4bvh87b4obbmeo7glmphkevqgee@4ax.com>
Source record: 27892

On 13 Mar 2004 19:00:20 GMT, averyfineman@aol.com (Avery Fineman) wrote:

>In article <cck550hsgbben56i0cfnj0b09vtm5cu7lc@4ax.com>, budgie
><me@privacy.net> writes:
>
>>On Fri, 12 Mar 2004 15:32:23 +0000, Ian Bell <itb@yahoo.com> wrote:
>>
>>>Paul Burridge wrote:
>>>
>>>> Hi all,
>>>>
>>>> Is there some black magic required to get higher order harmonics out
>>>> of an oscillator?
>>>> I'm only trying to get 17.2Mhz out of a 3.44Mhz source and am thus far
>>>> failing spectacularly. I've tried everything I can think of so far to
>>>> no avail. All I can get apart from the fundamental is a strong third
>>>> harmonic on 10.32Mhz, regardless of what I tune for.
>>>
>>>In RF circles, the 'normal' way to do this would be a simple Class C
>>>amplifier with a collector load tuned to the fifth harmonic. In calls C,
>>>conduction only occurs for a small fraction of a cycle which produces a
>>>correspondingly higher proportion of higher harmonics than a square wave.
>>
>>I've been waiting for someone to post this. I would only add "The drive
>level,
>>and the bais point, will vary the amount of fifth (or whichever) you will
>see."
>>
>>It's as common as noses in RF, as Ian pointed out. Just look at the average
>>two-way radio prior to frequency synthesisers. Crystal freqs were multiplied
>>this way in transmitter chains and for receive injection, although use of
>fifth
>>wasn't especially common because you normally had enough design control to
>>use the more efficient *2, *3 or *4.
>
> Fifty years ago that was mostly true and multiplier stages rarely went
> beyond the 4th harmonic. Two notable exceptions, though -

That IS what I said.

(snip exceptions)

> However, all those multiplier types went the way of the dinosaur when
> PLLs operating directly at the desired frequency came into being.

That IS what I said.

> There isn't any advantage to using those old "exotic" technologies
> other than in restoration for nostalgia's sake.

There IS advantage in being aware of analog techniques.

2057. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 01:34:52 UTC
From: budgie <me@privacy.net>
Message-ID: <fid7505h03mi19l1lb878nquvg1812ra1i@4ax.com>
Source record: 27893

On 13 Mar 2004 09:42:37 -0800, legg@magma.ca (R.Legg) wrote:

>budgie <me@privacy.net> wrote in message
news:<cck550hsgbben56i0cfnj0b09vtm5cu7lc@4ax.com>...
>> On Fri, 12 Mar 2004 15:32:23 +0000, Ian Bell <itb@yahoo.com> wrote:
>>
>> >Paul Burridge wrote:
>> >
>>
>> >
>> >In RF circles, the 'normal' way to do this would be a simple Class C
>> >amplifier with a collector load tuned to the fifth harmonic. In calls C,
>> >conduction only occurs for a small fraction of a cycle which produces a
>> >correspondingly higher proportion of higher harmonics than a square wave.
>>
>> I've been waiting for someone to post this. I would only add "The drive level,
>> and the bais point, will vary the amount of fifth (or whichever) you will see."
>>
>> It's as common as noses in RF, as Ian pointed out. Just look at the average
>> two-way radio prior to frequency synthesisers. Crystal freqs were multiplied
>> this way in transmitter chains and for receive injection, although use of fifth
>> wasn't especially common because you normally had enough design control to use
>> the more efficient *2, *3 or *4.
>
>'Tune for smoke' isn't an option for most new products, which have to
>be manufactured without hands.

Agreed, but read Michael Black's post below. It's about awareness of other
techniques which help broaden the outlook, rather than starting with a very
narrow view of the solution and trying to make that fit the problem.

onya Michael.

>Better to pick a suitable duty cycle (or more likely a conduction time
>period in a digital circuit), that has an efficient 5th harmonic
>component, including delays, at low power levels.
>
>http://www.wenzel.com/pdffiles/choose.pdf
>
>RL

2058. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 02:17:56 UTC
From: Jim Weir <jim@rst-engr.com>
Message-ID: <l4g7505nmp3bvi2pm4eefn9pah70v1po1j@4ax.com>
Source record: 27894

Another way of saying that:

If your only tool is a hammer, all problems look like nails.

Jim

->
->Agreed, but read Michael Black's post below. It's about awareness of other
->techniques which help broaden the outlook, rather than starting with a very
->narrow view of the solution and trying to make that fit the problem.

Jim Weir, VP Eng. RST Eng. WX6RST
A&P, CFI, and other good alphabet soup

2059. WTB:2 Meter Duplexers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 02:31:17 UTC
From: Charlie <okiemansc@yahoo.com>
Message-ID: <RtP4c.93268$Bz3.28034@okepread05>
Source record: 27895
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.swap

Small ham club in the midwest is looking to buy a set of 2 meter
duplexers. Prefer 4 or 6 cavity. MIN: 65 db rejection @ 600 kHz. No mobile
duplexers please.
Please state price,condition and location.
THANKS,
...Charlie...

2060. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 04:30:28 UTC
From: Tony <tony_roe@tpg.com.au>
Message-ID: <cnn750d24ffah77u67uh1hjs3684eeho00@4ax.com>
Source record: 27896
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 13 Mar 2004 16:15:53 +0000 (UTC), kensmith@violet.rahul.net (Ken Smith) wrote:

>In article <hba6505tpn35brv69vl0qp0iqfuog0ja7d@4ax.com>,
>John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> wrote:
>[....]
>>As the duty cycle deviates from 50%, the even harmonics start to
>>appear, so you need a better filter to keep them out.
>
>Also as you get nearer the 20-80 duty cycle the amplitude of the 5th
>harmonic decreases.

Even worse than that - relying on simple reasoning (no maths), the 5th will be COMPLETELY suppressed when the input's rising and falling edges are spaced so they correspond in time with the SAME point in the 5th harmonic waveform, certainly at 20-80, but also at 40-60, 60-40 or 80-20 - a good reason to make sure that the 50-50 is stable and accurate.
Tony (remove the "_" to reply by email)

2061. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 04:43:58 UTC
From: mcalhoun@ksu.edu
Message-ID: <c30nue$9cu@unix2.cc.ksu.edu>
Source record: 27747
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

>Is there some black magic required to get higher order harmonics out
>of an oscillator?
>I'm only trying to get 17.2Mhz out of a 3.44Mhz source and am thus far
>....[snip]....

John L. Reinartz, W1QP, published "A Fundamental-Reinforced Harmonic-Generating Circuit" in the July, 1937, issue of QST. I don't have a copy handy, but a followup article "Putting the Harmonic Generator to Work" in the April, 1938, QST contains this statement:

"It will be remembered that in the harmonic-generator circuit the crystal oscillator was operated on the crystal frequency only, and that the following tube was used to generate the even and odd harmonics up to the 11th and 12th. For our present purpose, the 8th harmonic is sufficient; that is, 28 Mc. from an 80-meter crystal...."

Hope this helps.

--Myron.
--
Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge
PhD EE (retired). "Barbershop" tenor. CDL(PTXS). W0PBV. (785) 539-4448
NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle, Pistol)

2062. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 06:15:43 UTC
From: John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com>
Message-ID: <4mt750tbkane3mb1ipl4bkuteghmm24qlu@4ax.com>
Source record: 27748
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 14 Mar 2004 14:30:28 +1000, Tony <tony_roe@tpg.com.au> wrote:

>Even worse than that - relying on simple reasoning (no maths),
>the 5th will be COMPLETELY suppressed when the input's rising
>and falling edges are spaced so they correspond in time with the
>SAME point in the 5th harmonic waveform,

Nicely put.

Something like Fourier analysis can be an equation that you can apply,
or a reality you can visualize. When it becomes "simple reasoning" is
when you truly understand it.

I suppose that if a being were infinitely intelligent, it wouldn't
need any math; everything would be obvious.

John

2063. Re: Ameco AC-1 problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 06:54:37 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BC796BDF.1F71%outhouse@midcoast.com>
Source record: 27749

in article 20040313154235.12631.00005512@mb-m28.aol.com, N2EY at
n2ey@aol.comSPAMNO wrote on 3/13/04 15:42:

> In article <BC77A844.1EE8%outhouse@midcoast.com>, Uwe <outhouse@midcoast.com>
> writes:
>
>> When I increase the plate voltage to 325V my 2. grid runs about 280V and the
>> plate current increases to about 65 mA. I don't really dare to do that
>> without knowing the max values on that tube.
>> I guess I could lower the 2. grid voltage by increasing the value of the
>> resistor connectd to it.
>> I don't know if that would lower my plate current to what you get.
>
> Uwe,
>
> How are you tuning up the transmitter? Are you adjusting the plate capacitor
> for minimum current?
>
> 73 de Jim, N2EY

Jim,

Sofar I have connected a scope to the antenna and tuned for max waveform eg.
highest voltage. That is also the setting where my dummy load with bulbs is
brightest.
The original instructions for the AC1 explain how to tune but use
expressions like 'turn the capacitor clockwise' which is useless to me when
I am not using their exact part.

They have an alternative way to tune by inserting a mA meter into the key
lead but I do not get the little dips in current they are describing. For me
it is more of a linear increase in current from the highest capacity setting
(lowest current) to the setting where the cap is all open and the current is
highest.

The way things are the max output occurs more or less at the lowest anode
current of my power supply (about 35mA at 200V B+).

Why do I tune for minimum current??

73 Uwe KB1JOW

2064. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 08:33:44 UTC
From: Active8 <reply2group@ndbbm.net>
Message-ID: <19yfj1v8wbbdt.dlg@news.individual.net>
Source record: 27750
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 13 Mar 2004 22:43:58 -0600, mcalhoun@ksu.edu wrote:

>>Is there some black magic required to get higher order harmonics out
>>of an oscillator?
>>I'm only trying to get 17.2Mhz out of a 3.44Mhz source and am thus far
>>....[snip]....
>
> John L. Reinartz, W1QP, published "A Fundamental-Reinforced Harmonic-
> Generating Circuit" in the July, 1937, issue of QST. I don't have a
> copy handy, but a followup article "Putting the Harmonic Generator to
> Work" in the April, 1938, QST contains this statement:
>
> "It will be remembered that in the harmonic-generator circuit the
> crystal oscillator was operated on the crystal frequency only,
> and that the following tube was used to generate the even and
> odd harmonics up to the 11th and 12th. For our present purpose,
> the 8th harmonic is sufficient; that is, 28 Mc. from an 80-meter
> crystal...."
>
> Hope this helps.

Five boxes preserve our freedoms: soap, ballot, witness, jury, and
cartridge.

Hey Doc. Should that quote be attributed to you or what?

--
Best Regards,
Mike

2065. Re: TS850. Want 300mW output by use of ALC.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 11:39:17 UTC
From: Rv! <no@spam.here.thanks>
Message-ID: <1079264358.14514.0@doris.uk.clara.net>
Source record: 27751

"Bill Turner"
> Doesn't the '850 have a jack on the back for transverter drive? It's
> been a few years so my memory might be failing me, but I recall using
> that jack with a six meter transverter.

Thanks for the reply.

No, it has to be adapted to get this function. This involved adding sockets to the rear of the radio and getting access to the RF drive to the finals. Howver this isn't all that helpful in this case as the signal is apparently extremely small and not enough to drive this TVTR unit.

Page 49 of the user manual show how to convert the IF output to a low level RF drive with 250mV P-P output when drive is at max. Unfortunately this still leaves the final PA in action which is where the manual recommends connecting the transverter output (RX signal).

I don't know what their TVTR was expecting. I can get a low level drive just fine but at the same time pump the full 100w into the receive port of the TVTR. Not exactly as wanted.

Rv!

2066. Re: Ameco AC-1 problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 12:12:34 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <S_X4c.12803$Pa7.327738@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27752

"Uwe" <outhouse@midcoast.com> wrote in message
news:BC796BDF.1F71%outhouse@midcoast.com...
> They have an alternative way to tune by inserting a mA meter into the key
> lead but I do not get the little dips in current they are describing. For
me
> it is more of a linear increase in current from the highest capacity
setting
> (lowest current) to the setting where the cap is all open and the current
is
> highest.

It seems as though your Plate Tuning capacitor has too little capacitance to resonate at the frequency you are using.

> The way things are the max output occurs more or less at the lowest anode
> current of my power supply (about 35mA at 200V B+).
>
> Why do I tune for minimum current??

The combination of the Plate Tuning capacitor and the inductor in the output circuit comprise a parallel-resonant tuned circuit, which has its highest impedance at resonance. Therefore, when the two are resonant, current is at its lowest point. Tuning for maximum voltage on the antenna is not guaranteed to get the plate circuit on frequency, at least not the frequency you want. On many of those older tube transmitters, there was enough range in the plate tuning capacitor that the circuit could be tuned to the second harmonic of the desired frequency. Ie, if your desired frequency was 3500 kHz, the circuit could also be tuned to 7000 kHz. Measuring antenna voltage (which many cheap rigs did, by using a "Relative Output" meter, just an rf voltmeter connected across the antenna terminal) could lead you to adjust for the wrong resonance frequency. (In the 1960s the 80-meter Novice subband was 3.7-3.75 MHz, putting the second harmonic outside of any amateur band and generating a lot of QSL cards from the FCC for unsuspecting owners of transmitters like the Knight T-60, which had only a relative output meter.)

If you can find someone who has a "dip meter," you can determine whether your plate circuit can be tuned to resonance, and, if not, how far off it is. A dip meter is an oscillator with an exposed coil, and an analog meter that dips when the oscillator is positioned near a resonant circuit. You adjust the dip meter knob until its meter dips and read the frequency off the dial. The dial calibration is not great, but if you have a general-coverage receiver you can listen for the oscillator signal.

I would also investigate the coupling capacitor from the tube plate to the ungrounded terminal of the plate tuning capacitor. It may have dried out and shorted. Carefully measure for dc voltage from the ungrounded terminal of

the plate tuning capacitor to the chassis. There shouldn't be any. If there is, replace the capacitor. As a rule of thumb, its voltage rating should be 4x the plate voltage, capacitance about 1000-1500 pF.

"PM"

2067. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 13:14:39 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <mpk8509vi96k16hkfg605vedu41ne2vt8c@4ax.com>
Source record: 27753
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 13 Mar 2004 22:15:43 -0800, John Larkin
<jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> wrote:

>I suppose that if a being were infinitely intelligent, it wouldn't
>need any math; everything would be obvious.

Yeah, but he wouldn't have much of a social life.
--

The BBC: Licensed at public expense to spread lies.

2068. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 13:14:40 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <8dl850tbqbfgrvp90ckacjr4k91j19vl66@4ax.com>
Source record: 27754
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 13 Mar 2004 20:23:45 -0500, Active8 <reply2group@ndbbm.net>
wrote:

>Just a rough guess, since your calling on supreme beings...

The post is still vacant as yet...
:-)

>That input cap... I take it the input source is a reasonable
>estimate of your square wave... if the time constant of that input
>RC net isn't right, it'll be a differentiator, and turn your square
>wave into pulses coincident with the rising and falling edges. Your
>scope trace suggested otherwise, but IIRC, at that tin=me you were
>using the filter at the input to the mult., xo things have changed.

There's been no filtering (other than the selective properties of the
tank circuits) whatsoever employed thus far.

>It doesn't look like you're biased in Class C. All the mults I've
>seen are Class C biased with the tuned circuit on the collector. And
>remember, when you're doing this later for some other purpose, in
>Class C, the transistors Vceo - reverse breakdown - must be at least
>twice the supply voltage.

Yup, perfectly correct. I must admit that going the class C route with
the tank tuned to the required harmonic was the way I was 'brought up'
as it were. Class C typically generates lots of harmonics as you
obviously know. This multiplier seems to be operating in class A,
which I admit is odd given its high linearity. But I didn't design the
multiplying stage you see here, but the guy who did is an RF expert so
I don't argue. :-)

But you've just given me an idea: maybe I should increase the value of
the 82 ohm base-ground resistor to increase drive signal level and tip
the stage into class C. Worth a try?

--

The BBC: Licensed at public expense to spread lies.

2069. Extracting the 5th Harmonic - revised design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 14:32:40 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <n0r850daqa0kn6vr09bvj19ptngq27i4r5@4ax.com>
Source record: 27755
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Hi all,

Following general agreement that class C might be a better bias
arrangement for the purpose of better harmonic generation, I've posted
a revised circuit to alt.binaries.schematics.electronics which makes
better use of the high input signal level available. Check it out and
let me know what you think.

p.
--

The BBC: Licensed at public expense to spread lies.

2070. Re: Ameco AC-1 problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 15:40:16 UTC
From: n2ey@aol.comSPAMNO
Message-ID: <20040314104016.08626.00003585@mb-m27.aol.com>
Source record: 27756

In article <S_X4c.12803$Pa7.327738@bgtnsc05-news.ops.worldnet.att.net>,
"Paul_Morphy" <nopaul_morphy2@coolgoose.com> writes:

>The combination of the Plate Tuning capacitor and the inductor in the output
>circuit comprise a parallel-resonant tuned circuit,

The AC-1 uses a pi network output circuit.

73 de Jim, N2EY

2071. Re: Ameco AC-1 problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 15:40:16 UTC
From: n2ey@aol.comSPAMNO
Message-ID: <20040314104016.08626.00003584@mb-m27.aol.com>
Source record: 27757

In article <BC796BDF.1F71%outhouse@midcoast.com>, Uwe <outhouse@midcoast.com>
writes:

>in article 20040313154235.12631.00005512@mb-m28.aol.com, N2EY at
>n2ey@aol.comSPAMNO wrote on 3/13/04 15:42:
>
>> In article <BC77A844.1EE8%outhouse@midcoast.com>, Uwe
><outhouse@midcoast.com>
>> writes:
>>
>>> When I increase the plate voltage to 325V my 2. grid runs about 280V and
>the
>>> plate current increases to about 65 mA. I don't really dare to do that
>>> without knowing the max values on that tube.
>>> I guess I could lower the 2. grid voltage by increasing the value of the
>>> resistor connectd to it.
>>> I don't know if that would lower my plate current to what you get.
>>
>> Uwe,
>>
>> How are you tuning up the transmitter? Are you adjusting the plate
>capacitor
>> for minimum current?
>>
>> 73 de Jim, N2EY
>
>Jim,
>
>Sofar I have connected a scope to the antenna and tuned for max waveform eg.
>highest voltage. That is also the setting where my dummy load with bulbs is
>brightest.
>The original instructions for the AC1 explain how to tune but use
>expressions like 'turn the capacitor clockwise' which is useless to me when
>I am not using their exact part.

The tuneup procedure (adapted to your setup) is as follows:

1) Set both output capacitors to maximum capacitance (plates fully meshed)
2) Close the key and adjust the "plate" capacitor (the one nearest the tube in
the circuit diagram) for minimum plate current. Maximum output should occur at
the same time. Release the key.
3) Unmesh the "load" capacitor about 10 degrees or so
4) Repeat Step 2. The plate current minimum should be higher and there should
be more output.
5) Repeat steps 2, 3, and 4 in order until you get maximum rated plate current

at the minimum setting of the plate capacitor.

>They have an alternative way to tune by inserting a mA meter into the key
>lead but I do not get the little dips in current they are describing.

Then there is something wrong with your output circuit. What capacitors and coil are you using? The original design had a 365 pf variable "plate" capacitor and a similar capacitor for the "load" adjustment. The coil was different for each band.

What components are you using in the output circuit? Plate tuning capacitor. coil, load capaticor, plate RF choke, coupling capacitor? Any of them could be the cause of your problem.

>For me
>it is more of a linear increase in current from the highest capacity setting
>(lowest current) to the setting where the cap is all open and the current is
>highest.

That says to me that your plate C is too low.
>
>The way things are the max output occurs more or less at the lowest anode
>current of my power supply (about 35mA at 200V B+).

Which should happen somewhere in the midrange of the plate capacitor adjustment.
>
>Why do I tune for minimum current??
>
Because that's when the impedance of the load circuit is closest to matching the tube's output.

73 de Jim, N2EY

2072. Re: Ameco AC-1 problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 16:30:09 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <IM%4c.13499$Pa7.351953@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27759

"N2EY" <n2ey@aol.comSPAMNO> wrote in message
news:20040314104016.08626.00003585@mb-m27.aol.com...
> In article <S_X4c.12803$Pa7.327738@bgtnsc05-news.ops.worldnet.att.net>,
> "Paul_Morphy" <nopaul_morphy2@coolgoose.com> writes:
>
> >The combination of the Plate Tuning capacitor and the inductor in the
output
> >circuit comprise a parallel-resonant tuned circuit,
>
> The AC-1 uses a pi network output circuit.

That's right, but the plate tuning cap and the inductor still operate as a
parallel-resonant circuit. That's why plate current dips at resonance. In
conjunction with the loading capacitor, the pi network also serves to match
the plate impedance to the load impedance.

73,

"PM"

2073. Re: Ameco AC-1 problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 16:51:36 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <s405c.13564$Pa7.353813@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27760

"N2EY" <n2ey@aol.comSPAMNO> wrote in message
news:20040314104016.08626.00003584@mb-m27.aol.com...

> 2) Close the key and adjust the "plate" capacitor (the one nearest the
tube in
> the circuit diagram) for minimum plate current. Maximum output should
occur at
> the same time.

It is a characteristic of pi-network amplifiers that efficiency and power output are slightly better when the plate is tuned slightly off resonance. Tuning for a dip is good enough for most purposes.

> >
> >Why do I tune for minimum current??
> >
> Because that's when the impedance of the load circuit is closest to
matching
> the tube's output.

If plate voltage is 200 and plate current is 35 mA, plate impedance is 200/0.035, or 5714 ohms. The impedance of the load has nothing to do with this, it is due to the reactance at resonance of the plate tuning capacitor and the coil, which are equal but opposite in phase. You can have an open circuit on the other side of the coil and still tune for a dip in plate current. Assuming stable plate voltage it is possible to have the same plate current over a wide range of load impedances. Because the pi network looks like a lumped section of transmission line, and because the plate tuning capacitor serves the dual functions of resonating the plate circuit _and_ matching the plate circuit to the input of the pi network, variations at the load end require slight adjustments of the plate tuning capacitor. To get maximum power transfer to the load, the pi network must transform the plate impedance to the load impedance, while also resonating the plate circuit. There's more going on than simple impedance matching.

73,

"PM"

2074. Re: Extracting the 5th Harmonic - revised design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 17:31:23 UTC
From: John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com>
Message-ID: <dj5950pc4bi2bef6htaqfrmg2iifenbhe0@4ax.com>
Source record: 27761
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 14 Mar 2004 14:32:40 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>
>Hi all,
>
>Following general agreement that class C might be a better bias
>arrangement for the purpose of better harmonic generation, I've posted
>a revised circuit to alt.binaries.schematics.electronics which makes
>better use of the high input signal level available. Check it out and
>let me know what you think.
>
>p.

A square wave has lots of 5th and - ideally - no 4th or 6th harmonics.
Going through a class-C stage *adds* in the 4-6 guys, and then you
have to work harder to filter them out. Why do that?

John

2075. Re: Converting sig gen to solid state

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 17:44:35 UTC
From: "Jim L." <jfladd@flash.net>
Message-ID: <7S05c.24750$KA7.22927@newssvr31.news.prodigy.com>
Source record: 27762

Knight Kit made a solid state sig. generator model KG-686. Maybe you could get some ideas from that. Jim

Bill Meara <n2cqr@clix.pt> wrote in message news:97f305da.0402242231.3e9a54ed@posting.google.com...
> I have an old Heath SG-6 signal generator. It uses two triodes.
> I'd like to convert it to solid state. The switched coils, varible cap
> and dial mechanism are very nice. Any suggestions on what kind of
> oscillator circuit I should use? I imagine the difficult part will
> be coming up with a feedback circuit that will cover the 160 kHz to 50 Mhz.
> Any ideas? Has anyone seen any articles on this kind of conversion?
> By going solid state and adding a few buffer stages I'm hoping I could make
> this thing a lot more stable. 73 Bill M0HBR CU2JL N2CQR
> http://planeta.clix.pt/n2cqr

2076. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 18:01:00 UTC
From: legg@magma.ca
Message-ID: <e715b5cc.0403141001.44ff632d@posting.google.com>
Source record: 27763
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:<9nf350hjb0c38qibba1155fnt50v1e3s30@4ax.com>...
> Hi all,
>
> Is there some black magic required to get higher order harmonics out
> of an oscillator?
> I'm only trying to get 17.2Mhz out of a 3.44Mhz source and am thus far
> failing spectacularly. I've tried everything I can think of so far to
> no avail.

C2's small size (3.3pF)is attenuating any 5th harmonic current by 6db
into
Q2's base biasing network, in both posted versions.

Biasing the first stage as classC in the second revision is a pretty
drastic change from the previous class A revision (100mW). Don't you
believe in tiny steps?

By the way, when you post a waveform where traces are only identified
by node numbers, when the schematic provided is an image only, there's
no way we can know where the traces originate, unless you tell us.

RL

2077. Re: WTB:2 Meter Duplexers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 18:05:56 UTC
From: Uncle Peter <radioconnectionNO@cox.netSPAM>
Message-ID: <1915c.2887$rQ.1210@lakeread04>
Source record: 27764
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.swap

"Charlie" <okiemansc@yahoo.com> wrote in message
news:RtP4c.93268$Bz3.28034@okepread05...
> Small ham club in the midwest is looking to buy a set of 2 meter
> duplexers. Prefer 4 or 6 cavity. MIN: 65 db rejection @ 600 kHz. No mobile
> duplexers please.
> Please state price,condition and location.
> THANKS,
> ...Charlie...
>
>

Charlie

I'd shoot for a bit more than -65 dB. A good Sinclair notch duplexer
can easily exceed -95 at 600 kHz spacing. I wouldn't good for much
less than -85 dB on a two meter system.

Pete k1zjh

2078. FT-41R HELP please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 19:29:21 UTC
From: geoff <ghagan@cinci.rr.com>
Message-ID: <lo25c.14692$8G2.11933@fe3.columbus.rr.com>
Source record: 27765

Maybe someone can help me?
My FT-41R 440 Hand Held, has no transmit or receive. If the squelch is "open", there is white noise out of the speaker, but the Green "Receive Light"
does not come on. When the PTT is pushed the Red "Transmit: light does not come on, but the bar graph indicates power output. No signals are heard by the
receiver when the PTT is released or in it's idle state.

The displayed frequency on the screen looks ok, if a repeater is set, then the
display changes to the Transmit frequency when the PTT is activated.
also the knob on top dose not work ,(that i can tell)
i have done a reset on it, no help

Thanks to all who will help with this problem.

2079. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 19:51:50 UTC
From: James Meyer <jmeyer@nowhere.com>
Message-ID: <hed95090vbul2fs4iu29bv88c3qrhro23v@4ax.com>
Source record: 27766
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 13 Mar 2004 11:50:12 +0000, Paul Burridge <pb@osiris1.notthisbit.co.uk>
posted this:

>
>> I have at least one suggestion, but I need to know whether to send an
>>LTspice netlist or a gif.
>
>Send 'em both!

I'm still working on an LTspice version of a varactor multiplier using
the base-emitter junction of a class C amp as the varactor. Basically using an
"idler" tank or tanks to augment the fifth harmonic.

The other idea is to make a doubler and a trippler fed from the
fundamental and then feed them into a mixer to get the fifth. If the doubler
and trippler are active (class C) stages, you should get as many db out at the
higher frequency as you put in at the fundamental. The mixer can have gain too.
Three transistors, three tuned circuits, and Bob's yer uncle.

Jim

2080. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 20:04:18 UTC
From: John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com>
Message-ID: <0he950dp5bmvc5k26tpcrbl50qisj9bprc@4ax.com>
Source record: 27767
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 14 Mar 2004 19:51:50 GMT, James Meyer <jmeyer@nowhere.com>
wrote:

>On Sat, 13 Mar 2004 11:50:12 +0000, Paul Burridge <pb@osiris1.notthisbit.co.uk>
>posted this:
>
>>
>>> I have at least one suggestion, but I need to know whether to send an
>>>LTspice netlist or a gif.
>>
>>Send 'em both!
>
> I'm still working on an LTspice version of a varactor multiplier using
>the base-emitter junction of a class C amp as the varactor. Basically using an
>"idler" tank or tanks to augment the fifth harmonic.
>
> The other idea is to make a doubler and a trippler fed from the
>fundamental and then feed them into a mixer to get the fifth. If the doubler
>and trippler are active (class C) stages, you should get as many db out at the
>higher frequency as you put in at the fundamental. The mixer can have gain too.
>Three transistors, three tuned circuits, and Bob's yer uncle.
>
>Jim

Why not just bandpass filter the 5th from the square wave? Too simple?

John

2081. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 20:55:04 UTC
From: Active8 <reply2group@ndbbm.net>
Message-ID: <1gn8n3loio5q6.dlg@news.individual.net>
Source record: 27768
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 14 Mar 2004 13:14:40 +0000, Paul Burridge wrote:

> On Sat, 13 Mar 2004 20:23:45 -0500, Active8 <reply2group@ndbbm.net>
> wrote:
>
>>Just a rough guess, since your calling on supreme beings...
>
> The post is still vacant as yet...
> :-)
>
>>That input cap... I take it the input source is a reasonable
>>estimate of your square wave... if the time constant of that input
>>RC net isn't right, it'll be a differentiator, and turn your square
>>wave into pulses coincident with the rising and falling edges. Your
>>scope trace suggested otherwise, but IIRC, at that tin=me you were
>>using the filter at the input to the mult., xo things have changed.
>
> There's been no filtering (other than the selective properties of the
> tank circuits) whatsoever employed thus far.
>
>>It doesn't look like you're biased in Class C. All the mults I've
>>seen are Class C biased with the tuned circuit on the collector. And
>>remember, when you're doing this later for some other purpose, in
>>Class C, the transistors Vceo - reverse breakdown - must be at least
>>twice the supply voltage.
>
> Yup, perfectly correct. I must admit that going the class C route with
> the tank tuned to the required harmonic was the way I was 'brought up'
> as it were. Class C typically generates lots of harmonics as you
> obviously know. This multiplier seems to be operating in class A,
> which I admit is odd given its high linearity. But I didn't design the
> multiplying stage you see here, but the guy who did is an RF expert so
> I don't argue. :-)
>
> But you've just given me an idea: maybe I should increase the value of
> the 82 ohm base-ground resistor to increase drive signal level and tip
> the stage into class C. Worth a try?

Nah. With a *sine* input, you'd bias it so it only conducts for less
than 180 degrees of the fundamental's cycle - keep the trans *out*
of conduction for the most part. Now that I think of it, yer using a
square wave and should have the stinkin' harmonic already, duh. What
was I thinkin'? I still wonder what that input cap is doing to the
edges. The trace you posted indicates it *might* be ok if nothing

changed.

Just for grins, get rid of that input cap and do whatever with the bias to allow you to DC couple the multiplier. That's pretty class C'ish assuming a 0 - 5V square wave. Don't fry your b-e junction. Something's wiping out your 5th, so lets get that input RC outta there.
--
Best Regards,
Mike

2082. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 21:27:19 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <8lg95052atap10j75ak2es37203el3fn0n@4ax.com>
Source record: 27769
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 14 Mar 2004 19:51:50 GMT, James Meyer <jmeyer@nowhere.com>
wrote:

>On Sat, 13 Mar 2004 11:50:12 +0000, Paul Burridge <pb@osiris1.notthisbit.co.uk>
>posted this:
>
>>
>>> I have at least one suggestion, but I need to know whether to send an
>>>LTspice netlist or a gif.
>>
>>Send 'em both!
>
> I'm still working on an LTspice version of a varactor multiplier using
>the base-emitter junction of a class C amp as the varactor. Basically using an
>"idler" tank or tanks to augment the fifth harmonic.
>
> The other idea is to make a doubler and a trippler fed from the
>fundamental and then feed them into a mixer to get the fifth. If the doubler
>and trippler are active (class C) stages, you should get as many db out at the
>higher frequency as you put in at the fundamental. The mixer can have gain too.
>Three transistors, three tuned circuits, and Bob's yer uncle.

Jim, please remember the fundamental has to be in the order of
~3.5Mhz.
--

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2083. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 21:27:21 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <dng950d820ejkr2rol72kb4id3s7dbptff@4ax.com>
Source record: 27770
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 14 Mar 2004 12:04:18 -0800, John Larkin
<jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> wrote:

>
>Why not just bandpass filter the 5th from the square wave? Too simple?

I suggested this a while ago, but no one seemed very keen on that
solution for some reason. Pity, as it does seem to Spice very well. A
5/6V TTL level square wave winds up as around .5 of a volt of 5th
harmonic, post-filtering. Not bad!
--

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2084. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 21:27:22 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <q1h950tiokidmosnca13rqlg0va5rk3e4r@4ax.com>
Source record: 27771
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 14 Mar 2004 10:01:00 -0800, legg@magma.ca (R.Legg) wrote:

>C2's small size (3.3pF)is attenuating any 5th harmonic current by 6db
>into
>Q2's base biasing network, in both posted versions.

Curious. Can you show some figures to back this claim up? (Not that I
don't believe you; just that I'd like to see how you arrived at this
view).

>Biasing the first stage as classC in the second revision is a pretty
>drastic change from the previous class A revision (100mW). Don't you
>believe in tiny steps?

I've been trying nothing else *but* "tiny steps" for the last few
days. There's no harm in the ocassional quantum jump. :-)

>By the way, when you post a waveform where traces are only identified
>by node numbers, when the schematic provided is an image only, there's
>no way we can know where the traces originate, unless you tell us.

My apologies. I'll try not to let it happen again.
--

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2085. Re: Extracting the 5th Harmonic - revised design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 21:27:23 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <sah9501qqfdou7ia7qjk6i7df30103dbdn@4ax.com>
Source record: 27772
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 14 Mar 2004 09:31:23 -0800, John Larkin
<jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> wrote:

>A square wave has lots of 5th and - ideally - no 4th or 6th harmonics.
>Going through a class-C stage *adds* in the 4-6 guys, and then you
>have to work harder to filter them out. Why do that?

For the simple reason that it's dead easy to re-wire the original
board to this new config and see straight away if there's any
indication of 5th. If that should be the case, and having already
built a BPF for the 5th, the problem would be solved for very minimal
effort indeed.
--

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2086. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 21:58:05 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <p5l950pk9lna1g77nll3n4bd2sgmdv2plr@4ax.com>
Source record: 27773
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 14 Mar 2004 15:55:04 -0500, Active8 <reply2group@ndbbm.net>
wrote:

>On Sun, 14 Mar 2004 13:14:40 +0000, Paul Burridge wrote:
>
>> On Sat, 13 Mar 2004 20:23:45 -0500, Active8 <reply2group@ndbbm.net>
>> wrote:
>>
>>>Just a rough guess, since your calling on supreme beings...
>>
>> The post is still vacant as yet...
>> :-)
>>
>>>That input cap... I take it the input source is a reasonable
>>>estimate of your square wave... if the time constant of that input
>>>RC net isn't right, it'll be a differentiator, and turn your square
>>>wave into pulses coincident with the rising and falling edges. Your
>>>scope trace suggested otherwise, but IIRC, at that tin=me you were
>>>using the filter at the input to the mult., xo things have changed.
>>
>> There's been no filtering (other than the selective properties of the
>> tank circuits) whatsoever employed thus far.
>>
>>>It doesn't look like you're biased in Class C. All the mults I've
>>>seen are Class C biased with the tuned circuit on the collector. And
>>>remember, when you're doing this later for some other purpose, in
>>>Class C, the transistors Vceo - reverse breakdown - must be at least
>>>twice the supply voltage.
>>
>> Yup, perfectly correct. I must admit that going the class C route with
>> the tank tuned to the required harmonic was the way I was 'brought up'
>> as it were. Class C typically generates lots of harmonics as you
>> obviously know. This multiplier seems to be operating in class A,
>> which I admit is odd given its high linearity. But I didn't design the
>> multiplying stage you see here, but the guy who did is an RF expert so
>> I don't argue. :-)
>>
>> But you've just given me an idea: maybe I should increase the value of
>> the 82 ohm base-ground resistor to increase drive signal level and tip
>> the stage into class C. Worth a try?
>
>Nah. With a *sine* input, you'd bias it so it only conducts for less
>than 180 degrees of the fundamental's cycle - keep the trans *out*

>of conduction for the most part. Now that I think of it, yer using a
>square wave and should have the stinkin' harmonic already, duh. What
>was I thinkin'? I still wonder what that input cap is doing to the
>edges. The trace you posted indicates it *might* be ok if nothing
>changed.
>
>Just for grins, get rid of that input cap and do whatever with the
>bias to allow you to DC couple the multiplier. That's pretty class
>C'ish assuming a 0 - 5V square wave. Don't fry your b-e junction.
>Something's wiping out your 5th, so lets get that input RC outta
>there.

Hi Mike,
I'm made your suggested changes and re-run the sim.
The new output result across the 1k resistor is now viewable on
abse....

--

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2087. VCO Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-14 23:35:56 UTC
From: Gary Morton <gary@alma.demon.co.uk>
Message-ID: <w%55c.16916$ma7.360835218@news-text.cableinet.net>
Source record: 27774

I'm experimenting with various VCO configurations/designs for a general coverage short wave receiver. The output of the VCO will drive a MOSFET mixer.

I am able to vary the gain of the oscillator. I get the best looking sine wave at the point that oscillation just starts. The 2nd harmonic is around -40dbC. The voltage as scoped at the tank is around 1V ptp. If the gain is increased the 2nd harmonic raises to -30dbC and the tank voltage to 4V ptp. I think this is about the right drive level for the MOSFET mixer (yet to be built).

Just what difference will the level of 2nd harmonic make? Does it matter whether I have -40 or -30dbC? I'm not sure what effect it will have on the performance of the final receiver, but my gut feeling is that the better the input to the mixer the less unwanted components coming out from the mixer. Then again this is not meant to be a high performance receiver.

I have seen designs which take the output from the source of the FET (for the design under test). The waveform here varies from bad to attrocious - not the kind of thing that should IMHO be fed into the mixer, although of course it will still work.

The variable gain is necessary to obtain oscillation as the tuning capacitance varies. Later I want to add an AGC circuit.

I have also experimented with buffering the tank, as this is the place with the cleanest waveform. A fet source follower didn't seem to work as expected and I now think that this type of circuit is only good for low level signals, let's say 1V ptp if the pinch voltage is around -3 or -4V. Comments?

In a previous circuit I used an emitter follower using two 100k resistors to bias the transistor base to Vdd/2. It seemed to work and certainly I understand far better the voltage swing limitations of this circuit. The tank will be loaded by <50k (depending upon beta and emitter load), however an experiment with the tank loaded with a 12k resistor showed that this had little detrimental effect on the circuit, although the gain control needed to be increased. The general opinion that I have read appears to recommended loading the tank as lightly as possible, although the advantages as not clearly spelt out (at least to me!).

regards...

--Gary

2088. Re: VCO Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 00:08:44 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <gu65c.14907$Pa7.390672@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27775

"Gary Morton" <gary@alma.demon.co.uk> wrote in message
news:w%55c.16916$ma7.360835218@news-text.cableinet.net...
> The general opinion that I have read appears to recommended
> loading the tank as lightly as possible, although the advantages as not
> clearly spelt out (at least to me!).

Frequency stability. If the load varies it can 'pull' the oscillator. I think the output waveform will look nicer with light loading, too. Driving a diode mixer works better with square waves, which are harmonic-rich. Not sure about a MOSFET mixer.

I'm interested in your project because I just took a break from working on a design for a general-coverage receiver, using a couple of VCOs (Wadley Loop). One is going to run at ~ 55-85 MHz, the other at MF. After poring over a bunch of varactor datasheets it looks as though I can get reasonable linearity if I stick to the middle of the curve. What kind of frequency stability are you getting?

I know the Wadley Loop is pass , but I think it will be an interesting project.

Cheers,

"PM"

2089. Re: VCO Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 00:24:06 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c32t36$d6q$1@freenet9.carleton.ca>
Source record: 27776

"Paul_Morphy" (nopaul_morphy2@coolgoose.com) writes:
> "Gary Morton" <gary@alma.demon.co.uk> wrote in message
> news:w%55c.16916$ma7.360835218@news-text.cableinet.net...
>> The general opinion that I have read appears to recommended
>> loading the tank as lightly as possible, although the advantages as not
>> clearly spelt out (at least to me!).
>
> Frequency stability. If the load varies it can 'pull' the oscillator. I
> think the output waveform will look nicer with light loading, too. Driving a
> diode mixer works better with square waves, which are harmonic-rich. Not
> sure about a MOSFET mixer.
>
> I'm interested in your project because I just took a break from working on a
> design for a general-coverage receiver, using a couple of VCOs (Wadley
> Loop). One is going to run at ~ 55-85 MHz, the other at MF. After poring
> over a bunch of varactor datasheets it looks as though I can get reasonable
> linearity if I stick to the middle of the curve. What kind of frequency
> stability are you getting?
>
> I know the Wadley Loop is pass&#65533;, but I think it will be an interesting
> project.
>
But I think what makes it passe is that it goes against what has
become good receiver design.

It gives you multiple conversions, when another scheme would give
you fewer (depending on design). More signficantly, there is not
much selectivity until after that third mixer. This opens things
up to mixer overload. And unless it's done well, with a good selection
of actual frequencies and good shielding, it opens up lots of
chances for spurs.

Forty to fifty years ago, the Wadley loop was a scheme that gave you
a fixed 500KHz tuning range per band, just like the Collins receivers,
but without the need for a crystal every 500KHz. Put a converter ahead
of a receiver that tunes a 500KHz range. With the Collins and all it's
crystals, you ended up with a dual-conversion receiver. With a Wadley
loop, you added an extra conversion for no reason except to replace
those crystals.

But once PLLs became commonly feasible, the Wadley Loop lost it's
advantage. You could synthesize all those needed crystals without
adding an extra conversion in the signal chain. Initially, we'd
just see synthesizers that replaced all those crystals, with

the same overall scheme of a converter ahead of a tuneable receiver.
But move ahead a few years, and the norm was to move the IF into
the HF range, and make the first (and only) local oscilaltor tuneable.
The LO would either be a premixing of a 500KHz range VFO and
a PLL that generated signals every 500KHz, or the PLL itself
would generate the LO directly, in very small steps. You still
needed to watch for good shielding and frequency selection, but
it moved it all out of the signal path.

I'd say Wadley Loops are a curiosity at this point, since other
schemes have long been available.

Of course, curiosity is always a good reason to actually try
something, and this was just a chance to comment on Wadley Loops
rather than to discourage you.

Michael VE2BVW

2090. Re: VCO Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 00:48:53 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1059vb7sft2vbcf@corp.supernews.com>
Source record: 27777

"Gary Morton" <gary@alma.demon.co.uk> wrote in message
news:w%55c.16916$ma7.360835218@news-text.cableinet.net...
> I'm experimenting with various VCO configurations/designs for a general
> coverage short wave receiver. The output of the VCO will drive a MOSFET
mixer.
>
> I am able to vary the gain of the oscillator. I get the best looking sine
wave
> at the point that oscillation just starts. The 2nd harmonic is
around -40dbC.
> The voltage as scoped at the tank is around 1V ptp. If the gain is
increased
> the 2nd harmonic raises to -30dbC and the tank voltage to 4V ptp. I think
this
> is about the right drive level for the MOSFET mixer (yet to be built).
>
> Just what difference will the level of 2nd harmonic make? Does it matter
> whether I have -40 or -30dbC? I'm not sure what effect it will have on the
> performance of the final receiver, but my gut feeling is that the better
the
> input to the mixer the less unwanted components coming out from the mixer.
> Then again this is not meant to be a high performance receiver.
>
> I have seen designs which take the output from the source of the FET (for
the
> design under test). The waveform here varies from bad to attrocious - not
the
> kind of thing that should IMHO be fed into the mixer, although of course
it
> will still work.
>
> The variable gain is necessary to obtain oscillation as the tuning
capacitance
> varies. Later I want to add an AGC circuit.
>
> I have also experimented with buffering the tank, as this is the place
with
> the cleanest waveform. A fet source follower didn't seem to work as
expected
> and I now think that this type of circuit is only good for low level
signals,
> let's say 1V ptp if the pinch voltage is around -3 or -4V. Comments?
>
> In a previous circuit I used an emitter follower using two 100k resistors

to
> bias the transistor base to Vdd/2. It seemed to work and certainly I
> understand far better the voltage swing limitations of this circuit. The
tank
> will be loaded by <50k (depending upon beta and emitter load), however an
> experiment with the tank loaded with a 12k resistor showed that this had
> little detrimental effect on the circuit, although the gain control needed
to
> be increased. The general opinion that I have read appears to recommended
> loading the tank as lightly as possible, although the advantages as not
> clearly spelt out (at least to me!).
>
> regards...
>
> --Gary
>

I doubt that there's any real advantage to feeding a nice clean sine wave to your MOSFET mixer -- the best distortion performance that you'll get out of the mixer will be if you're driving it hard (i.e. turning it on and off). Even with sine waves in you'd get lots of harmonics internally in the mixer.

By the way, why not use an off-the-shelf mixer like the NE602? I doubt that you'd get much better performance out of a single MOSFET unless you're a real RF circuits whiz, and the NE602 is quite easy to apply.

2091. Re: VCO Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 01:54:01 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <Z085c.23308$H44.435063@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27778

"Michael Black" <et472@FreeNet.Carleton.CA> wrote in message
news:c32t36$d6q$1@freenet9.carleton.ca...
> But I think what makes it passe is that it goes against what has
> become good receiver design.

Good points. I'm just too lazy to learn how to design a synthesizer. I can make a Wadley Loop. I have two SW receivers now that I rarely listen to. One is a superhet, the other is a regen. At least with the regen I get to do something besides turn the tuning knob, so it gets used more often. IMO, SWBC went to hades when the Cold War ended and commercial CW virtually disappeared. As a left-wing atheist CW enthusiast (steeeerike thuree!), I don't find very much on the air that I agree with or that interests me. Maybe I should learn Spanish. :>

"PM"

2092. Icom IC-251A Low Power Mod?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 02:22:38 UTC
From: acepilot <acepilot@bloomer.net>
Message-ID: <nn85c.361$KG2.788@reggie.win.bright.net>
Source record: 27779

Has anybody successfully modified the Icom IC-251A 2M all mode rig so that it will provide only 1 mW at the antenna terminal to drive a transverter? On the schematic, it looks like there is a plug that supplies the 13.8 Volts to the PA and driver transistors. If I removed this plug, effectively killing these stages, might there be enough power leaking through to provide the 1 mW at the antenna jack? If so, how bad do you suppose the harmonics would be at the output? Any other ideas appreciated (I could control the power using the mic gain control down to some lower power such as 1 Watt or so and then use a 30 dB pad. Down side is if I ever adjust the mic gain to 10 Watts out, I'd pump 100mW into the tranverter until the 30 dB pad finally blew)...What say???

Scott
N0EDV

2093. Re: VCO Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 03:45:51 UTC
From: maxfoo <maxfooHeadFromButt@punkass.com>
Message-ID: <ig9a50lghits6ge81juvkpbvakao9gdl4g@4ax.com>
Source record: 27780

On Sun, 14 Mar 2004 16:48:53 -0800, "Tim Wescott" <tim@wescottnospamdesign.com>
wrote:

>I doubt that there's any real advantage to feeding a nice clean sine wave to
>your MOSFET mixer -- the best distortion performance that you'll get out of
>the mixer will be if you're driving it hard (i.e. turning it on and off).
>Even with sine waves in you'd get lots of harmonics internally in the mixer.
>
>By the way, why not use an off-the-shelf mixer like the NE602? I doubt that
>you'd get much better performance out of a single MOSFET unless you're a
>real RF circuits whiz, and the NE602 is quite easy to apply.

agreed, I'd concentrate on the loop filter section, if he's even using one.

Remove "HeadFromButt", before replying by email.

2094. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 04:00:13 UTC
From: James Meyer <jmeyer@nowhere.com>
Message-ID: <uaaa50drs1s2muh5uqbn6a92duh31am0pv@4ax.com>
Source record: 27781
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 14 Mar 2004 12:04:18 -0800, John Larkin
<jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> posted this:

>On Sun, 14 Mar 2004 19:51:50 GMT, James Meyer <jmeyer@nowhere.com>
>wrote:
>
>> The other idea is to make a doubler and a trippler fed from the
>>fundamental and then feed them into a mixer to get the fifth. If the doubler
>>and trippler are active (class C) stages, you should get as many db out at the
>>higher frequency as you put in at the fundamental. The mixer can have gain too.
>>Three transistors, three tuned circuits, and Bob's yer uncle.
>>
>>Jim
>
>
>Why not just bandpass filter the 5th from the square wave? Too simple?
>
>
>John

Because a square wave has to have a particular on to off ratio to get
enough fifth. Because a square wave needs those nasty logic gates. Because
three transistors are simpler.

Jim

2095. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 04:05:16 UTC
From: James Meyer <jmeyer@nowhere.com>
Message-ID: <biaa50917b4f8jag7db9g00leoden9ua2v@4ax.com>
Source record: 27782
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 14 Mar 2004 21:27:19 +0000, Paul Burridge <pb@osiris1.notthisbit.co.uk>
posted this:

>On Sun, 14 Mar 2004 19:51:50 GMT, James Meyer <jmeyer@nowhere.com>
>wrote:
>
>> I'm still working on an LTspice version of a varactor multiplier using
>>the base-emitter junction of a class C amp as the varactor. Basically using an
>>"idler" tank or tanks to augment the fifth harmonic.
>>
>> The other idea is to make a doubler and a trippler fed from the
>>fundamental and then feed them into a mixer to get the fifth. If the doubler
>>and trippler are active (class C) stages, you should get as many db out at the
>>higher frequency as you put in at the fundamental. The mixer can have gain too.
>>Three transistors, three tuned circuits, and Bob's yer uncle.
>
>Jim, please remember the fundamental has to be in the order of
>~3.5Mhz.

3.5 MHz... 3.5 GHz 3.5 uHz... makes no difference. The laws of physics
scale nicely for most electronic circuits. Although some ICs are getting
features small enough that the electrons have to line up single file. 8-)

Jim

2096. Re: VCO Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 07:21:03 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <1qja50pl6tfnk240s77ok31tqjd60mifia@4ax.com>
Source record: 27783

On Sun, 14 Mar 2004 23:35:56 GMT, Gary Morton <gary@alma.demon.co.uk>
wrote:

>I'm experimenting with various VCO configurations/designs for a general
>coverage short wave receiver.

I assume that this is an up conversion design, with the (first) IF
well above the intended Rx band.

>The output of the VCO will drive a MOSFET mixer.

I assume this is a single ended dual-gate MOSFET mixer (and not some
kind of MOSFET quad).

In dual gate MOSFET mixers (as well as in heptode mixers) the load
current is proportional to both the gate voltages, thus some
multiplication occurs between the various gate signals and the
trigonometric relation sin(A)*sin(B) = 1/2*(cos(A-B)-cos(A+B)) can be
used to estimate the amplitudes of the mixing products.

>I am able to vary the gain of the oscillator. I get the best looking sine wave
>at the point that oscillation just starts. The 2nd harmonic is around -40dbC.
> The voltage as scoped at the tank is around 1V ptp. If the gain is increased
>the 2nd harmonic raises to -30dbC and the tank voltage to 4V ptp. I think this
>is about the right drive level for the MOSFET mixer (yet to be built).

The second and higher harmonics will no doubt produce mixing products
with the antenna spectrum and will cause a lot of unwanted responses
at 2LO+/-IF and 3LO+/-IF and so on, but this is mainly a problem, if
the IF is comparable to the received signal (e.g. 9 MHz or 10.7 MHz)
or the LO is below the received signal, in which case the second
harmonic could fall close to the received frequency. In all these
cases, it is important, that there is a sufficient selectivity in
front of the mixer, usually requiring at least one and preferably
several constantly tunable front end stages as in high quality old
receivers.

However, in up-converting systems, with say 40 MHz IF, the LO range is
40-70 MHz, the second harmonic is 80-140 MHz and the unwanted signals
that can produce the 40 MHz IF signal are at 40-180 MHz. Good
shielding and a steep fixed low pass filter at 30 MHz should take care
of these higher image responses.

While the unwanted mixing products may still occur, the mixing is
between the internally generated front end thermal noise and the 2LO,
the amplitudes are insignificant, especially when receiving the noisy
HF range.

If you are using the traditional general coverage up-conversion system, I would not be too concerned about the amplitude of the second harmonic.

One advantage of using some balanced, hard driven mixer, is that the first strong spurious response is at 3LO, the spurious image responses are at even higher frequencies, simplifying the input filtering.

Paul OH3LWR

2097. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 07:43:57 UTC
From: legg@magma.ca
Message-ID: <e715b5cc.0403142343.10f00009@posting.google.com>
Source record: 27784
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:<q1h950tiokidmosnca13rqlg0va5rk3e4r@4ax.com>...
> On 14 Mar 2004 10:01:00 -0800, legg@magma.ca (R.Legg) wrote:
>
> >C2's small size (3.3pF)is attenuating any 5th harmonic current by 6db
> >into
> >Q2's base biasing network, in both posted versions.
>
> Curious. Can you show some figures to back this claim up? (Not that I
> don't believe you; just that I'd like to see how you arrived at this
> view).

The reactance of the C2 part is almost 3K at the fifth harmonic.

Input impedance of the biasing network is 300 ohms - this is about
half the small signal input impedance of the 3904 @4mA.

Even with bypassed emitter, only 1/3 of C2's AC current will enter the
base of Q2.

If the resonant circuit used lower L and higher C values, C2 could be
increased without as severe an effect as it has here.

>
> >Biasing the first stage as classC in the second revision is a pretty
> >drastic change from the previous class A revision (100mW). Don't you
> >believe in tiny steps?
>
> I've been trying nothing else *but* "tiny steps" for the last few
> days. There's no harm in the ocassional quantum jump. :-)

As previous posters have stated, if the input is squarish then the
harmonics are already there.

There is a +/- 3% window on all the optimum duty cycles (ie 10, 30,
50, 70, 90%), including risetime, for which the 5th harmonic amplitude
is relatively constant, at about 10% of the initial peak amplitude.
Note that the 30/70% period is a median quasi-minima for both 3rd and
4th harmonics, possibly reducing LF filtering problems in the first
stage, as the 1st and 2nd are farther away. 50% being available, you
should stick to it.

I don't know if you're doing any actual physical breadboarding. The
100mW power dissipation suggests not. Pre-apps it's time.

If this is a physical breadboard, then perhaps you might let us know what you are actually using for your 2uH inductors. You wouldn't want the relatively hefty classA bias to have any effect on them, so there should be a lot of air in their flux path - not a couple of turns on a bead, I hope.

RL

2098. Re: Microwave PIN switch

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 08:40:23 UTC
From: pake@extrafoi.se
Message-ID: <pake-0101040101490001@dhcp-032-102.foi.se>
Source record: 27785

In article <gw74c.366$p%6.280@newsfe2-gui.server.ntli.net>, "owen.home"
<owen.home@ntlworld.com> wrote:

> Help
> I've got some HP 33123A, SPST PIN switches rated 100MHz -15GHz, they aren't
> in my HP catalogue and I can't find any info about them. I specifically need
> to know how to drive them and hope that I can switch them at a 1KHz rate to
> give me modulated test signals, they are a small rectangular box with 3
> SMAs.
> Thanks in advance for any information.
> Thanks
> John
> MW1FGQ

Are you sure its 33123A , and not 33132A ?

I found 33132A in catalogue from late 70:th tells that you can find info
how to drive them in: HP application Notes 922, "Applications of PIN Diodes",
"Selection and Use of Microwave Diode Switches and Limiters"

I dont have that app. note but the old catalogue tells under Driving Consid.:
Driver requirements are dictated by the specific application.
When the switch is used as a modulator or attenuator, a current amplifier is
required. Suitable integrated circuits can be obtained for either laboratory
or OEM applications.
Typical 10%-90% switching speed is 50 to 100 ns in either of-on or on-off
switching.

/Per-Ake

--
Remove "extra" in my e-mail adress !!

2099. 100W linear PA: output matching

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 09:51:31 UTC
From: Heikki Ahola <heikki.ahola@vtt.fi>
Message-ID: <40557CA3.D34DEDED@vtt.fi>
Source record: 27786

Hi!

I am planning to increase my RF output considerably beyond the QRP levels I have been using thus far. The idea is to construct a 100 W PA-module with IRF510-fets
as many others have done before... At this stage I will concentrate in the 160, 80 and maybe 40 m because the switching fets may not work too well at higher frequencies and also I feel that this extra power is most urgently needed in the lowest bands.

For this power level two pairs of IRF510 are needed in push-pull configuration and with Vdd = 30 V. The question that has bothered me is the type of output matching.In order to reach the 100W level an impedance step-up 1:4 is necessary. After studying ARRL HB:s from the past decades, RSGB material and Solid State Desing for Radio Amateurs I have noticed that a conventional broadband transformer with two rows of ferrite toroids is used almost invariably. In some cases like the 300W design by the late H. Granberg (from Motorola) a transmission line transformer wound on two separate toroids is used. What is missing totally (in this power level, at least) is the application of large single toroids as transformers (why ???).

Another possibility which might be feasible is a narrowband (T-) matching section for each band (max 3) followed by the standard low pass filter.

Any comments/suggestions from more experienced homebrewers ? Also, if a better but still low cost alternative for IFR510 has appeared in the market, this info also taken into consideration when finalizing the design...

73 de Heikki (OH2LZI)

2100. Re: VCO Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 10:02:22 UTC
From: Leon Heller <leon_heller@hotmail.com>
Message-ID: <40557f2f$0$24218$cc9e4d1f@news.dial.pipex.com>
Source record: 27787

"Gary Morton" <gary@alma.demon.co.uk> wrote in message
news:w%55c.16916$ma7.360835218@news-text.cableinet.net...
> I'm experimenting with various VCO configurations/designs for a general
> coverage short wave receiver. The output of the VCO will drive a MOSFET
mixer.
>
> I am able to vary the gain of the oscillator. I get the best looking sine
wave
> at the point that oscillation just starts. The 2nd harmonic is
around -40dbC.
> The voltage as scoped at the tank is around 1V ptp. If the gain is
increased
> the 2nd harmonic raises to -30dbC and the tank voltage to 4V ptp. I think
this
> is about the right drive level for the MOSFET mixer (yet to be built).
>
> Just what difference will the level of 2nd harmonic make? Does it matter
> whether I have -40 or -30dbC? I'm not sure what effect it will have on the
> performance of the final receiver, but my gut feeling is that the better
the
> input to the mixer the less unwanted components coming out from the mixer.
> Then again this is not meant to be a high performance receiver.

You could put an LP filter on the buffered oscillator output.

Leon

2101. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 10:20:43 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <bsva501joc917ic3gvat727q43h7em4c9d@4ax.com>
Source record: 27788
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 14 Mar 2004 23:43:57 -0800, legg@magma.ca (R.Legg) wrote:

>The reactance of the C2 part is almost 3K at the fifth harmonic.
>
>Input impedance of the biasing network is 300 ohms - this is about
>half the small signal input impedance of the 3904 @4mA.
>
>Even with bypassed emitter, only 1/3 of C2's AC current will enter the
>base of Q2.

Understood. I chose a very low value for C2 because it was the third harmonic that was dominating and most needed cutting down to size. Though the reactance at the fifth is high, it's a lot higher still at the third. Although I suppose I could have used a simple series L/C tuned circuit tuned to pass on the fifth and attenuate everything else. Do you think that might work?

>If the resonant circuit used lower L and higher C values, C2 could be
>increased without as severe an effect as it has here.

Good point.

>As previous posters have stated, if the input is squarish then the
>harmonics are already there.

Theoretically, perhaps! Damned if I can find the 5th, though. :(

>There is a +/- 3% window on all the optimum duty cycles (ie 10, 30,
>50, 70, 90%), including risetime, for which the 5th harmonic amplitude
>is relatively constant, at about 10% of the initial peak amplitude.
>Note that the 30/70% period is a median quasi-minima for both 3rd and
>4th harmonics, possibly reducing LF filtering problems in the first
>stage, as the 1st and 2nd are farther away. 50% being available, you
>should stick to it.

I'm as close to 50% as I can get. If square waves are so finicky about producing the 5th if their mark/space ratios are a tiny bit out then maybe I need to consider some other way of generating such harmonics.

>I don't know if you're doing any actual physical breadboarding. The
>100mW power dissipation suggests not. Pre-apps it's time.

I'm using my 'leopardboard' technique: a layer of PCB with liittle island pads etched out in copper and component ends soldered to those islands.

>If this is a physical breadboard, then perhaps you might let us know
>what you are actually using for your 2uH inductors. You wouldn't want
>the relatively hefty classA bias to have any effect on them, so there
>should be a lot of air in their flux path - not a couple of turns on a
>bead, I hope.

Nope. They should be okay. 5mm dia, air-core, 20mm winding length
--

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2102. Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 10:46:53 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <d52b50l8hqa05qrj05gchhng7ft0lh4tq4@4ax.com>
Source record: 27789
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Hi all,

I've got quite a huge stash of inductors in my parts bin. The colour codes don't always seem to relate to the values I've been able to measure, with my multi-function DVM, however, and I can't accurately measure any inductor < about 10uH. Is there a circuit anywhere that would enable me to get a reasonably accurate idea of the values I've got down to say 100nH or thereabouts?

Thanks,

p.
--

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2103. Re: WTB:2 Meter Duplexers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 11:48:39 UTC
From: Guilala <d.larouche@sympatico.ca>
Message-ID: <AJg5c.266$Eb6.72165@news20.bellglobal.com>
Source record: 27790
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.swap

I have a look-like new Sincalir REslock 4 cavity 500Khz spacing duplexer.
It have 1 year old.

It can be tuned to your frequency if you wish.

I have also some repeater part like controller whit autopatch, commercial
radio

Asking 500$

d.larouche@sympatico.ca
"Charlie" <okiemansc@yahoo.com> a crit dans le message de news:
RtP4c.93268$Bz3.28034@okepread05...
> Small ham club in the midwest is looking to buy a set of 2 meter
> duplexers. Prefer 4 or 6 cavity. MIN: 65 db rejection @ 600 kHz. No mobile
> duplexers please.
> Please state price,condition and location.
> THANKS,
> ...Charlie...
>
>

2104. SEMI- PROFESSIONAL transistor tester for auction

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 11:53:07 UTC
From: paul405 <paul405@ntlworld.com>
Message-ID: <QNg5c.70$1j5.43@newsfe1-win>
Source record: 27796

HI THERE .

There is a Semi - Professional Transistor Tester for Auction
on Ebay.co.uk , Read All about it , and what it can do
great of your into repairing , or Construction
hope the info help
http://cgi.ebay.co.uk/ws/eBayISAPI.dll?ViewItem&item=3804001636&category=400
04&sspagename=STRK%3AMESSE%3AIT&rd=1

bbyyeeee

2105. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 12:20:19 UTC
From: The Real Andy <i_luv_beer_especially_pilsners@yahoo.com.au>
Message-ID: <40559f8a@dnews.tpgi.com.au>
Source record: 27791
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:d52b50l8hqa05qrj05gchhng7ft0lh4tq4@4ax.com...
> Hi all,
>
> I've got quite a huge stash of inductors in my parts bin. The colour
> codes don't always seem to relate to the values I've been able to
> measure, with my multi-function DVM, however, and I can't accurately
> measure any inductor < about 10uH. Is there a circuit anywhere that
> would enable me to get a reasonably accurate idea of the values I've
> got down to say 100nH or thereabouts?

www.google.com

2106. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 12:48:43 UTC
From: Leon Heller <leon_heller@hotmail.com>
Message-ID: <4055a62c$0$10157$cc9e4d1f@news.dial.pipex.com>
Source record: 27792
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:d52b50l8hqa05qrj05gchhng7ft0lh4tq4@4ax.com...
> Hi all,
>
> I've got quite a huge stash of inductors in my parts bin. The colour
> codes don't always seem to relate to the values I've been able to
> measure, with my multi-function DVM, however, and I can't accurately
> measure any inductor < about 10uH. Is there a circuit anywhere that
> would enable me to get a reasonably accurate idea of the values I've
> got down to say 100nH or thereabouts?

If you have a signal generator you can connect them to a suitable capacitor
and measure the resonant frequency.

Leon

2107. Re: MFJ balanced line tuner efficiency?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 14:41:23 UTC
From: "A.N. Onym" <Alxendr_Nicolaievitj_Onym@nowhere.tk>
Message-ID: <4055C093.4DDFCCF6@nowhere.tk>
Source record: 27793

Er...
Well. After a couple of Years, the resistance of the coil roller contacts reaches
"irritating" high values, destroying coil Q.
Keep it clean! (tomato ketchup is a good cleaner!)

Reg Edwards wrote:

> Ian,
>
> Quite rightly, you blame the melt down of the tuner not to the tuner's
> intrinsic inefficiency (which none of them have) but to the abuse inflicted
> on it by the user with the help of a transmitter.
>
> All tuners are high-efficiency devices when operated within their ratings.
> They can't help being otherwise. They have only a length of wire in the form
> of a coil and a condenser.
> ---
> Reg.

2108. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 14:53:01 UTC
From: Active8 <reply2group@ndbbm.net>
Message-ID: <ik2sdvti19pc$.dlg@news.individual.net>
Source record: 27794
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 15 Mar 2004 12:48:43 -0000, Leon Heller wrote:

> "Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
> news:d52b50l8hqa05qrj05gchhng7ft0lh4tq4@4ax.com...
>> Hi all,
>>
>> I've got quite a huge stash of inductors in my parts bin. The colour
>> codes don't always seem to relate to the values I've been able to
>> measure, with my multi-function DVM, however, and I can't accurately
>> measure any inductor < about 10uH. Is there a circuit anywhere that
>> would enable me to get a reasonably accurate idea of the values I've
>> got down to say 100nH or thereabouts?
>
> If you have a signal generator you can connect them to a suitable capacitor
> and measure the resonant frequency.
>
> Leon

Nyuk, nyuk, nyuk. I bet if he had a signal generator, he wouldn't be
looking for inductors to shotgun that multiplier :) In fact, he
wouln't even be building a multiplier.
--
Best Regards,
Mike

2109. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 15:12:24 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <2dhb50pp6u9mhftu6h84f397sojj40rpos@4ax.com>
Source record: 27795
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 15 Mar 2004 12:48:43 -0000, "Leon Heller"
<leon_heller@hotmail.com> wrote:

>
>"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
>news:d52b50l8hqa05qrj05gchhng7ft0lh4tq4@4ax.com...
>> Hi all,
>>
>> I've got quite a huge stash of inductors in my parts bin. The colour
>> codes don't always seem to relate to the values I've been able to
>> measure, with my multi-function DVM, however, and I can't accurately
>> measure any inductor < about 10uH. Is there a circuit anywhere that
>> would enable me to get a reasonably accurate idea of the values I've
>> got down to say 100nH or thereabouts?
>
>If you have a signal generator you can connect them to a suitable capacitor
>and measure the resonant frequency.

Hi Leon,

That's what I have been doing, in fact. It's just I'd prefer to have a
more convenient, portable method to get instant read-outs of coil
values...
--

The BBC: Licensed at public expense to spread lies.

2110. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 15:40:36 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <105bjjkeiov2k33@corp.supernews.com>
Source record: 27647
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Bill Turner" <noway@nohow.com> wrote in message
news:0qhb50515j45ikdfcaefsqbu1bev6ole56@4ax.com...
> On Mon, 15 Mar 2004 10:46:53 +0000, Paul Burridge
> <pb@osiris1.notthisbit.co.uk> wrote:
>
> >I've got quite a huge stash of inductors in my parts bin. The colour
> >codes don't always seem to relate to the values I've been able to
> >measure, with my multi-function DVM, however, and I can't accurately
> >measure any inductor < about 10uH. Is there a circuit anywhere that
> >would enable me to get a reasonably accurate idea of the values I've
> >got down to say 100nH or thereabouts?
>
> ____
>
> I'd recommend a grid dip meter and a known capacitor, but be sure to
> make the test at a frequency well below the self resonant frequency of
> the inductor alone.
>
> Another thing to be wary of: Some inductors are wound on a resistor to
> reduce the Q for a specific purpose. Be suspicious of any which have an
> unusually broad dip.
>
> --
> Bill, W6WRT
> QSLs via LoTW
>

This is what I do; it works well even on my questionable dip meter.

Google for "LCR" meter; see what you come up with (mostly high $
instruments, probably).

2111. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 16:10:02 UTC
From: John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com>
Message-ID: <0alb501ns09chfibt5k0j0guecc3rmeonn@4ax.com>
Source record: 27648
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 15 Mar 2004 07:40:36 -0800, "Tim Wescott"
<tim@wescottnospamdesign.com> wrote:

>
>Google for "LCR" meter; see what you come up with (mostly high $
>instruments, probably).
>

This one is great:

http://www.aade.com/lcmeter.htm

John

2112. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 18:04:29 UTC
From: John Larkin <jjlarkin@highSNIPlandTHIStechPLEASEnology.com>
Message-ID: <qvrb50hvn0t1nj7kq5cako00bjrtis7nnr@4ax.com>
Source record: 27649
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 14 Mar 2004 21:27:21 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>On Sun, 14 Mar 2004 12:04:18 -0800, John Larkin
><jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> wrote:
>
>>
>>>Why not just bandpass filter the 5th from the square wave? Too simple?
>
>I suggested this a while ago, but no one seemed very keen on that
>solution for some reason.

Write down their names for me please, so I can remember to not hire
them.

John

2113. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 18:40:07 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.00000077.0022164c@btinternet.com>
Source record: 27650
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Hi,

> http://www.aade.com/lcmeter.htm

Or, as you have a counter, you could save yourself the money by
copying his oscillator and use a calculator to find the value of L
or C from the change in frequency.

Cheers - Joe

2114. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 19:05:02 UTC
From: John Woodgate <jmw@jmwa.demon.contraspam.yuk>
Message-ID: <zvHpNyIe5fVAFwGH@jmwa.demon.co.uk>
Source record: 27651
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

I read in sci.electronics.design that John Larkin <jjlarkin@highSNIPland
THIStechPLEASEnology.com> wrote (in <qvrb50hvn0t1nj7kq5cako00bjrtis7nnr@
4ax.com>) about 'Extracting the 5th Harmonic', on Mon, 15 Mar 2004:
>On Sun, 14 Mar 2004 21:27:21 +0000, Paul Burridge
><pb@osiris1.notthisbit.co.uk> wrote:
>
>>On Sun, 14 Mar 2004 12:04:18 -0800, John Larkin
>><jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> wrote:
>>
>>>
>>>Why not just bandpass filter the 5th from the square wave? Too simple?
>>
>>I suggested this a while ago, but no one seemed very keen on that
>>solution for some reason.
>
>Write down their names for me please, so I can remember to not hire
>them.
>
The reason no-one seemed keen is that the OP's **complaint** was that
his 5th harmonic BP filter didn't produce any output.

I think we have to supplement 'Read The Fascinating Manual' with 'RTCT'
- 'Read The Copulating Thread'.
--
Regards, John Woodgate, OOO - Own Opinions Only.
The good news is that nothing is compulsory.
The bad news is that everything is prohibited.
http://www.jmwa.demon.co.uk Also see http://www.isce.org.uk

2115. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 19:49:45 UTC
From: John Larkin <jjlarkin@highSNIPlandTHIStechPLEASEnology.com>
Message-ID: <lr1c50ls8v4stqisn34rcd8eoc4bkqu4vo@4ax.com>
Source record: 27652
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 15 Mar 2004 19:05:02 +0000, John Woodgate
<jmw@jmwa.demon.contraspam.yuk> wrote:

>I read in sci.electronics.design that John Larkin <jjlarkin@highSNIPland
>THIStechPLEASEnology.com> wrote (in <qvrb50hvn0t1nj7kq5cako00bjrtis7nnr@
>4ax.com>) about 'Extracting the 5th Harmonic', on Mon, 15 Mar 2004:
>>On Sun, 14 Mar 2004 21:27:21 +0000, Paul Burridge
>><pb@osiris1.notthisbit.co.uk> wrote:
>>
>>>On Sun, 14 Mar 2004 12:04:18 -0800, John Larkin
>>><jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> wrote:
>>>
>>>>
>>>>Why not just bandpass filter the 5th from the square wave? Too simple?
>>>
>>>I suggested this a while ago, but no one seemed very keen on that
>>>solution for some reason.
>>
>>Write down their names for me please, so I can remember to not hire
>>them.
>>
>The reason no-one seemed keen is that the OP's **complaint** was that
>his 5th harmonic BP filter didn't produce any output.

So I guess Fourier was wrong; makes sense, with a French name like
that. Somebody in this group also proved Shannon to be wrong... does
anybody remember who?

John

2116. Re: Icom IC-251A Low Power Mod?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 19:54:32 UTC
From: Allodoxaphobia <bit-bucket@config.com>
Message-ID: <slrnc5c2fo.cr.bit-bucket@localhost.config.com>
Source record: 27653

On Mon, 15 Mar 2004 02:22:38 +0000, acepilot hath writ:
> Has anybody successfully modified the Icom IC-251A 2M all mode rig so
> that it will provide only 1 mW at the antenna terminal to drive a
> transverter? On the schematic, it looks like there is a plug that
> supplies the 13.8 Volts to the PA and driver transistors. If I removed
> this plug, effectively killing these stages, might there be enough power
> leaking through to provide the 1 mW at the antenna jack? If so, how bad
> do you suppose the harmonics would be at the output?

That would be my concern: Just how much other "crap" would be
"leaking through" at or around the 1mW level.

I do have the IC-251A, but I've not had the need to do what you
are attempting ------ yet.

73 es gl
Jonesy
--
| Marvin L Jones | jonz | W3DHJ | OS/2
| Gunnison, Colorado | @ | Jonesy | linux __
| 7,703' -- 2,345m | config.com | DM68mn SK

2117. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 20:03:24 UTC
From: John Woodgate <jmw@jmwa.demon.contraspam.yuk>
Message-ID: <twjeKvJMwgVAFwVg@jmwa.demon.co.uk>
Source record: 27654
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

I read in sci.electronics.design that John Larkin <jjlarkin@highSNIPland
THIStechPLEASEnology.com> wrote (in <lr1c50ls8v4stqisn34rcd8eoc4bkqu4vo@
4ax.com>) about 'Extracting the 5th Harmonic', on Mon, 15 Mar 2004:
>spam.yuk> wrote:
>
>>I read in sci.electronics.design that John Larkin <jjlarkin@highSNIPland
>>THIStechPLEASEnology.com> wrote (in <qvrb50hvn0t1nj7kq5cako00bjrtis7nnr@
>>4ax.com>) about 'Extracting the 5th Harmonic', on Mon, 15 Mar 2004:
>>>On Sun, 14 Mar 2004 21:27:21 +0000, Paul Burridge
>>><pb@osiris1.notthisbit.co.uk> wrote:
>>>
>>>>On Sun, 14 Mar 2004 12:04:18 -0800, John Larkin
>>>><jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> wrote:
>>>>
>>>>>
>>>>>Why not just bandpass filter the 5th from the square wave? Too simple?
>>>>
>>>>I suggested this a while ago, but no one seemed very keen on that
>>>>solution for some reason.
>>>
>>>Write down their names for me please, so I can remember to not hire
>>>them.
>>>
>>The reason no-one seemed keen is that the OP's **complaint** was that
>>his 5th harmonic BP filter didn't produce any output.
>
>
>So I guess Fourier was wrong; makes sense, with a French name like that.

No, what has emerged from the discussion is that rather small deviations
from a perfect square waveform can drastically reduce the amount of one
or more harmonics in the spectrum, and this probably is the source of
the problem.

--
Regards, John Woodgate, OOO - Own Opinions Only.
The good news is that nothing is compulsory.
The bad news is that everything is prohibited.
http://www.jmwa.demon.co.uk Also see http://www.isce.org.uk

2118. Re: 100W linear PA: output matching

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 20:17:49 UTC
From: SB <abc@abc.com>
Message-ID: <c3531c$oj3$1@hercules.btinternet.com>
Source record: 27655

Heikki Ahola <heikki.ahola@vtt.fi> wrote in message
news:40557CA3.D34DEDED@vtt.fi...

Snip

> Any comments/suggestions from more experienced homebrewers ? Also, if a
> better but still low cost alternative for IFR510 has appeared in the
> market, this info also taken into consideration when finalizing the
> design...
>
> 73 de Heikki (OH2LZI)
>

Heikki,

Have a look into amplifiers using the IRF840 mosfet device, they dissipate
upto 125 watts max. Or check this site out
http://www.wireless.org.uk/mosfet.htm

73 Simon G7CPN.

2119. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 20:30:58 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403151230.b29616a@posting.google.com>
Source record: 27656

This has been answered fairly often here before. You might try a search. The AADE L/C Meter II does quite an adequate job down into the nanohenry region, very quickly, for excitation at a few hundred kHz, and for relatively little cost. For better info at specific operating frequencies, try a vector network analyzer such as the N2PK one I believe you already know about.

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message news:<d52b50l8hqa05qrj05gchhng7ft0lh4tq4@4ax.com>...
> Hi all,
>
> I've got quite a huge stash of inductors in my parts bin. The colour
> codes don't always seem to relate to the values I've been able to
> measure, with my multi-function DVM, however, and I can't accurately
> measure any inductor < about 10uH. Is there a circuit anywhere that
> would enable me to get a reasonably accurate idea of the values I've
> got down to say 100nH or thereabouts?
>
> Thanks,
>
> p.

2120. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 21:21:47 UTC
From: John Larkin <jjlarkin@highSNIPlandTHIStechPLEASEnology.com>
Message-ID: <dg7c50pag3g3dgquhbft66ujovkfnbt0e1@4ax.com>
Source record: 27657
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 15 Mar 2004 20:03:24 +0000, John Woodgate
<jmw@jmwa.demon.contraspam.yuk> wrote:

>No, what has emerged from the discussion is that rather small deviations
>from a perfect square waveform can drastically reduce the amount of one
>or more harmonics in the spectrum, and this probably is the source of
>the problem.

Either that, or a mistuned filter.

John

2121. Re: VCO Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 22:21:30 UTC
From: Gary Morton <gary@alma.demon.co.uk>
Message-ID: <K%p5c.17650$OH2.376514757@news-text.cableinet.net>
Source record: 27658

Leon Heller wrote:
<snip>
> You could put an LP filter on the buffered oscillator output.
<snip>

The VCO operates over a wide range, making the control of such a filter quite tricky. There will be three ranges and this would add to the complexity.

--Gary

2122. Re: VCO Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 22:24:46 UTC
From: Gary Morton <gary@alma.demon.co.uk>
Message-ID: <O2q5c.17654$fi3.377794805@news-text.cableinet.net>
Source record: 27659

Tim Wescott wrote:

<snip>
>
> I doubt that there's any real advantage to feeding a nice clean sine wave to
> your MOSFET mixer -- the best distortion performance that you'll get out of
> the mixer will be if you're driving it hard (i.e. turning it on and off).
> Even with sine waves in you'd get lots of harmonics internally in the mixer.
>
> By the way, why not use an off-the-shelf mixer like the NE602? I doubt that
> you'd get much better performance out of a single MOSFET unless you're a
> real RF circuits whiz, and the NE602 is quite easy to apply.
>
<snip>

I built a short wave receiver many years ago. The design was from a Babani Press book (highly recommended). It worked OK, but I always hated not knowing the exact frequency. At the time I had no tools to even calibrate the dial.

The front end was a single transistor oscillator and mixer. I tried the "improved" design which used a MOSFET, but I didn't have the right Denco coil and the performance was degraded.

The intention is to add digital tuning to this old project.

--Gary

2123. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 23:00:49 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <r2bc505jmbk81f09n9h5dsnmkep81d5olg@4ax.com>
Source record: 27660
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 15 Mar 2004 19:05:02 +0000, John Woodgate
<jmw@jmwa.demon.contraspam.yuk> wrote:

>The reason no-one seemed keen is that the OP's **complaint** was that
>his 5th harmonic BP filter didn't produce any output.

Eh?? Where did you get that from? I haven't even tried filtering yet!
I still haven't exhausted all the other suggestions made during the
course of this thread.

>I think we have to supplement 'Read The Fascinating Manual' with 'RTCT'
>- 'Read The Copulating Thread'.

Perhaps you should...
--

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2124. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 23:00:50 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <v9bc50dstrju40erj3dg9f4v7bi6athck4@4ax.com>
Source record: 27661
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 15 Mar 2004 20:03:24 +0000, John Woodgate
<jmw@jmwa.demon.contraspam.yuk> wrote:

>No, what has emerged from the discussion is that rather small deviations
>from a perfect square waveform can drastically reduce the amount of one
>or more harmonics in the spectrum, and this probably is the source of
>the problem.

Not this particular problem, it isn't!

--

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2125. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 23:00:51 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <nkbc50plfca8q4g7kreu9g2ttggcrvdpt2@4ax.com>
Source record: 27662
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 15 Mar 2004 07:12:42 -0800, Bill Turner <noway@nohow.com>
wrote:

>I'd recommend a grid dip meter and a known capacitor, but be sure to
>make the test at a frequency well below the self resonant frequency of
>the inductor alone.

I'm afraid my experience of using GDMs is *very* unfavourable. They
were fine in the days of big old HF kit, but nowadays with
PCB/surface-mounted stuff, they're *ucking useless.

>Another thing to be wary of: Some inductors are wound on a resistor to
>reduce the Q for a specific purpose. Be suspicious of any which have an
>unusually broad dip.

ISTR some valve anode chokes used this arrangement in HF rigs a couple
of decades ago...

--

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2126. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 23:02:57 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <fgdc501u76bme856mjthtvc9hcpmkdpctu@4ax.com>
Source record: 27663
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 15 Mar 2004 08:10:02 -0800, John Larkin
<jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> wrote:

>On Mon, 15 Mar 2004 07:40:36 -0800, "Tim Wescott"
><tim@wescottnospamdesign.com> wrote:
>
>>
>>>Google for "LCR" meter; see what you come up with (mostly high $
>>>instruments, probably).
>>
>
>This one is great:
>
>http://www.aade.com/lcmeter.htm

Crumbs! Thanks, John!
--

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2127. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-15 23:42:59 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <bifc50l8bhifqt4f7s59rok88qcb9f4d7d@4ax.com>
Source record: 27664
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 15 Mar 2004 23:00:49 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>On Mon, 15 Mar 2004 19:05:02 +0000, John Woodgate
><jmw@jmwa.demon.contraspam.yuk> wrote:
>
>>The reason no-one seemed keen is that the OP's **complaint** was that
>>his 5th harmonic BP filter didn't produce any output.
>
>Eh?? Where did you get that from? I haven't even tried filtering yet!
>I still haven't exhausted all the other suggestions made during the
>course of this thread.

What???

According to your schematic, the input to R1 is a 2.16MHz square wave
and L1VC1 is a parallel tuned tank, (filter) tuned to 10.8MHz. So is
L2VC2C7. If you're not trying to do any filtering, what are those tanks
doing in there?

--
John Fields

2128. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 00:01:01 UTC
From: Active8 <reply2group@ndbbm.net>
Message-ID: <fhyo4a0a3yss.dlg@news.individual.net>
Source record: 27665
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 15 Mar 2004 15:12:24 +0000, Paul Burridge wrote:

> On Mon, 15 Mar 2004 12:48:43 -0000, "Leon Heller"
> <leon_heller@hotmail.com> wrote:
>
>>
>>"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
>>news:d52b50l8hqa05qrj05gchhng7ft0lh4tq4@4ax.com...
>>> Hi all,
>>>
>>> I've got quite a huge stash of inductors in my parts bin. The colour
>>> codes don't always seem to relate to the values I've been able to
>>> measure, with my multi-function DVM, however, and I can't accurately
>>> measure any inductor < about 10uH. Is there a circuit anywhere that
>>> would enable me to get a reasonably accurate idea of the values I've
>>> got down to say 100nH or thereabouts?
>>
>>If you have a signal generator you can connect them to a suitable capacitor
>>and measure the resonant frequency.
>
> Hi Leon,
>
> That's what I have been doing, in fact. It's just I'd prefer to have a
> more convenient, portable method to get instant read-outs of coil
> values...

So why beat yourself to death building a sweep gen to test filters
when you got that there sig gen?
--
Best Regards,
Mike

2129. WTB NE561B PLL chip

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 00:09:18 UTC
From: Bob Liesenfeld <wb0poq@visi.com>
Message-ID: <405645AE.33B591F@visi.com>
Source record: 27666

Hi all,
I'm looking for qty. 2-4 NE561B Signetics PLL ICs. Anyone have some
they care to sell?

Tnx
Bob WB0POQ

2130. Re: VCO Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 00:47:19 UTC
From: budgie <me@privacy.net>
Message-ID: <a9jc50dom4rmc2iu3l9hsg0focqmhm891k@4ax.com>
Source record: 27667

On Sun, 14 Mar 2004 23:35:56 GMT, Gary Morton <gary@alma.demon.co.uk> wrote:

>I'm experimenting with various VCO configurations/designs for a general
>coverage short wave receiver. The output of the VCO will drive a MOSFET mixer.
>
>I am able to vary the gain of the oscillator. I get the best looking sine wave
>at the point that oscillation just starts.

That is the nature of oscillators. As you then increase the gain, the amplitude increases until some non-linearity prevents it - usually the available voltage swing in a device. This non-linearity causes the harmonic content to appear and rise to fairly significant levels, as you have observed.

Whether the harmonic levels you noted are of great significance depends on the mixer attributes.

One technique often used is to ensure the limiting non-linearity occurs in a separate gain stage following the oscillator. Gain control derived from that stage is then fed back to the oscillator to keep it in that "just oscillating" region where harmonic content is lowest. A separate take-off from the oscillator through a second buffer stage is then used as the actual output.

2131. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 01:22:33 UTC
From: John Larkin <jjlarkin@highSNIPlandTHIStechPLEASEnology.com>
Message-ID: <7llc5091l9jgn2svl36t0oaqivojb62l58@4ax.com>
Source record: 27668
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 15 Mar 2004 18:40:07 +0000 (UTC), Joe McElvenney
<ximac@btinternet.com> wrote:

>Hi,
>
>> http://www.aade.com/lcmeter.htm
>
> Or, as you have a counter, you could save yourself the money by
>copying his oscillator and use a calculator to find the value of L
>or C from the change in frequency.
>
>
> Cheers - Joe
>

To save $100, I'm not going to copy *anybody's* circuits.

John

2132. Re: Icom IC-251A Low Power Mod?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 01:41:18 UTC
From: acepilot <acepilot@bloomer.net>
Message-ID: <uSs5c.388$KG2.624@reggie.win.bright.net>
Source record: 27669

In my humble opinion,
Oops, sorry ;)
Anyway...
I thought of Plan B today while sitting on the crapper (or is that the "Engineering Bench" ???). I'm thinking of adding a large resistor in series with the top side of the MIC GAIN pot, something like 470K to 10M, determined experimentally, so that the 10K pot, when at fully clockwise position would only provide enough audio to the modulator to make 1 mW out to the antenna jack (simple voltage divider). I don't want to fry a $300 transverter by forgetting to turn the Mic Gain down =:O (which I KNOW I would do at some point -- like portable operation in the USA's rarest grid square, where I'll be for the June VHFQSO Contest)

Scott
N0EDV

Allodoxaphobia wrote:
> On Mon, 15 Mar 2004 02:22:38 +0000, acepilot hath writ:
>
>>Has anybody successfully modified the Icom IC-251A 2M all mode rig so
>>that it will provide only 1 mW at the antenna terminal to drive a
>>transverter? On the schematic, it looks like there is a plug that
>>supplies the 13.8 Volts to the PA and driver transistors. If I removed
>>this plug, effectively killing these stages, might there be enough power
>>leaking through to provide the 1 mW at the antenna jack? If so, how bad
>>do you suppose the harmonics would be at the output?
>
>
> That would be my concern: Just how much other "crap" would be
> "leaking through" at or around the 1mW level.
>
> I do have the IC-251A, but I've not had the need to do what you
> are attempting ------ yet.
>
> 73 es gl
> Jonesy

2133. Need G8870 DTMF decoder

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 02:29:38 UTC
From: "Michael (Tabaliah)" <me@privacy.net>
Message-ID: <mEt5c.813951$ts4.15967@pd7tw3no>
Source record: 27670

Looking for a G8870 DTMF decoder DIP (Mitel) to replace one that has had the smoke let out of it. Does anyone have one of these babies in their junkbox?

Michael VE7YXX, VE7AQS

2134. Re: VCO Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 05:33:59 UTC
From: Jim Pennell <Nospam@killspam.com>
Message-ID: <blw5c.42619$aT1.22629@newsread1.news.pas.earthlink.net>
Source record: 27672

Personally, I prefer to use a square wave, or at least a strong sine wave into any mixer....

The mixer itself is non-linear and so it will usually produce a number of LO harmonics.

Driving the LO at a high level reduces the length of time the mixer is in the 'semi-on/off' region as the LO transits through 0 VAC.

Generally speaking, that time near 0 VAC LO is where the mixer is most prone to being overloaded and intermod products being created so a strong LO drive usually results in somewhat better dynamic range for the mixer.

I plan on the filters before the mixer to keep signals at the LO harminoc out of the mixer, and as noted in another posting, a simple lowpass will do the trick in an upconverting Rx design.

Jim Pennell
N6BIU

2135. FS: BA/HB parts de W7ZFB

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 06:08:42 UTC
From: msix@nmia.com
Message-ID: <7288$405699ea$402a8028$20198@nmia.allthenewsgroups.com>
Source record: 27673

Latest list of stuff asof 3/12
Kinda long but bear with me...

*** All used unless stated NOS/NIB ***
*** All prices are POSTPAID NOT INSURED lower 48 ***
*** unless stated otherwise ***
*** For INSURANCE I will quote ***

---chassis---
new unused 3x11x17 alum chassis. $20 plus shipping

---tubes and sockets---
Eimac SK-610 4X/4CX family sockets with mounting tabs. $10 ea
Good low-mileage 4CX250B with above socket. $22

2 unused, unboxed WW2 carbon-plate 803 tubes and sockets.
$50 for both plus shipping

Set of 10 real stetite sockets with snap rings
6 4-pin Amphenol, snap ring mount
4 octal Amphenol, snap ring mount
Some new, some used $13 all

---solid state tube-replacement rectifiers---
2 matched NIB Sarkes-Tarzian S5251/1N2389, 1600 PRV, 600ma
OK for all except 5R4
$24 pair

2 matched Motorola/SES 1N1239, 2800 PRV, 500ma
OK for all including 5R4
$26 pair

1 each Semicon.Inc 1N1239, 2800 PRV, 500ma
OK for all including 5R4
$13

---transformers---
Collins plate transformer part number 672-0531-009
Rated 115-230VAC 50/60Hz in, 2250VCT at 565ma out.
No load: 115V in, 2580VAC out - 120V in, 2700VAC out.
Black, hermetically sealed, ceramic post terminals.
5 x 5.5 x 6.5H, 26LB, used, looks and works fine.
$75 pickup, plus actual UPS shipping

NIB Triad A-35A 10K plate to 90KCT single or P-P grids.
Unused. Allied catalog says freq response 50 to 10K.
2 x 2 x 2.5H inches. $24

2 each NOS Stancor WF-30 multi-Z interstage AF xfmrs.
Hermetically sealed. 1.5 x 1.5 x 2H inches. $5 ea

---coax relays---
These are Danbury-Knudsen or FXR, silver-plated, flat to 600MHz+,
100W+, BNC coax jacks. See old Allied/Newark catalogs.

FXR, NOS, SPDT, 115VAC coil, 2 x 1.5 x 1 inches, $13

D-K, used, SPDT, 18-24VDC coil, 2 x 1.5 x 1 inches, $13

D-K, used, SPDT, 12VDC coil, 2 x 1.5 x 1 inches $13

D-K, used, SP6T, 12VDC coils, 3 x 3 x 2 inches, $23

Motorola, NOS, SPDT, 6VDC coil, 3 x 2.5 x 1.5,
Ant and Rx BNC, Tx solder terminal, $12

---filters---
Stock HW/SB CW filter
Part no. Model no. Type Bandpass6/60 Used on
404-284-1 SBA-301-2 CW 400 Hz/2 kHz HW/SB 100/101/102
$40

Stock Drake 4-line C-F Networks xtal filter model 5645-2.4L
with carrier xtal 5644.999KHz. $30

---xtals---
38.1MHz xtal for Drake 4-line. $3

1 lot of 5 HC-6 xtals. 3.4, 10.4, 17.4, 23.4, 24.4MHz
$16

1 lot of 4 HC-6 xtals. 1.545, 4.545, 15.545, 22.545MHz
$14

73 John W7ZFB - Always Good in QRZ
n

2136. Re: Icom IC-251A Low Power Mod?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 08:23:58 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <IrNCJOFemrVAFAR$@ifwtech.co.uk>
Source record: 27674

Allison wrote:
>
>First pull the jumper.
>Second pick up the rf at the last "live" stage and bring it to a jack.
>I assume the transverter will permit seperate TX and RX paths, the
>better ones do. If the pickoff point is more than you need still the
>attenuator will not have to be big or high power.
>
>As to just pulling the plug and hoping fo rf leak through, try it it
>may work, my bet is no.
>
>The band pass filter for the operating freqency is before the driver
>and final so it's clean there. The transverter will also clean up the
>input usually. So the level of excess harmonics should not be a
>problem.
>
>Allison
>KB1gmX

Allison has touched all the important bases - his suggestion is the best way to do it.

The idea of just pulling the plug will not work - you'll turn all the power devices into passive diode limiters, and if anything comes out at all, it will be filthy. Likewise the huge reduction in audio drive will not work, because the SSB/CW signal will drop down into the circuit noise, and probably well below the level of the not-quite-suppressed carrier.

For a complete solution, install a little RF relay to switch the drive signal to an output socket on the rear of the transceiver. As Allison says, do this *after* the filters at the operating frequency, just before the signal enters the driver/PA boards. Also install a DC power relay to remove the supply to those RF power stages. Wire the two relays so that when they are not energized, the transceiver works as normal.

The deluxe - and safe - way to control those relays is to supply 12V DC down the coax cable between the new output socket and the transverter (using RF chokes and blocking capacitors to separate the DC from the RF at each end). When the transverter is powered-on, it commands the transceiver to send it low power. When the transverter is off, the transceiver simply goes back to normal.

You don't know exactly what power level the driver stages will provide. If it's too high, attenuate it. If it's too low, use an MMIC amp. If - as seems very likely - the transverter comes from Down East Microwave,

the facilities you need will probably be on-board.

As Allison says, use a separate route for RX input. This will require yet another small RF relay (powered the same way as the others) but it will make sure you can never empty the full transceiver power into the RX output of the transverter.

This system with DC control down the low-level TX coax will take a little time to install, but it is highly reliable and very safe. I've used it on a number of rigs here over the past 20+ years, and it has never let me down.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2137. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 11:10:00 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.00000078.00520557@btinternet.com>
Source record: 27675

Hi,

> To save $100, I'm not going to copy *anybody's* circuits.

An unfortunate choice of words on my part perhaps; possibly 'copy his technique' would have been better. A technique, I should add, that has been in the public domain for a very long time. The basic idea being -

1. Take an oscillator tank circuit with fixed C1 or L1.

2. Measure frequency F1.

3. Connect unknown Cx across C1 or Lx in series with L1.

4. Measure new frequency F2.

5. Calculate Cx (Lx) using a scientific calculator, remembering that F2/F1 = sqrt(C1 + Cx) or sqrt(L1 + Lx) then we have,

Cx = C1([F1/F2]^2 - 1) or Lx = L1([F2/F1]^2 - 1).

For best accuracy you would need to know the value of the strays which may easily be worked out using the same technique in reverse, or swamped, as the fancy takes you.

On the subject of copying, I would guess that 95% of homebrew projects rely on pre-published information; there must have been hundreds of 'chinese copies' of commercial rigs produced by hams over the years. And it goes without saying that homebrewing not buying is what we are supposed to be talking about in this group.

Cheers - Joe

2138. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 11:30:22 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.00000079.0064aba0@btinternet.com>
Source record: 27676

OOPS!!

5. should have read -

Calculate Cx (Lx) using a scientific calculator,
remembering that F2/F1 = sqrt([C1 + Cx]/C1)

or sqrt([L1 + Lx]/L1) thus we have,

Cx = C1([F1/F2]^2 - 1) or Lx = L1([F2/F1]^2 - 1).

Cheers - Joe

2139. Re: Icom IC-251A Low Power Mod?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 12:19:57 UTC
From: acepilot <acepilot@bloomer.net>
Message-ID: <4056F0ED.6000202@bloomer.net>
Source record: 27677

Ian,
Thanks for the pointers! I could delete the relays since I am going to dedicate the IC-251A to low power service on a permanent basis. I bought the rig specifically to be used with transverters. I have a much newer rig that covers 2M (Yaesu FT-857) and it puts out 50 Watts instead of only 10 Watts like the IC-251A.

Now it's just a matter of where to "pick off" that low level RF. I have it narrowed down to Q30 (pre-driver), but there is so much circuitry (coils and caps) between it's collector and the next stage's base lead. Do you think I could just remove the driver stage (Q31) and solder the center lead of a piece of coax, say RG-174, into the now empty base lead hole and bring it out the back of the rig? Is any sort of impedance matching required?

The plan is to use this to drive the Down East Microwave series of transverters, so harmonics may not be a real big issue since I believe they have pretty tight filtering at their design frequencies that would greatly attenuate the next "spur" 144 MHz above the desired output (i.e. 1440 MHz for the 1296 transverter)...

Any final thoughts???

Scott
N0EDV

Ian White, G3SEK wrote:
> Allison wrote:
>
>>
>> First pull the jumper.
>> Second pick up the rf at the last "live" stage and bring it to a jack.
>> I assume the transverter will permit seperate TX and RX paths, the
>> better ones do. If the pickoff point is more than you need still the
>> attenuator will not have to be big or high power.
>>
>> As to just pulling the plug and hoping fo rf leak through, try it it
>> may work, my bet is no.
>>
>> The band pass filter for the operating freqency is before the driver
>> and final so it's clean there. The transverter will also clean up the
>> input usually. So the level of excess harmonics should not be a problem.
>>
>> Allison
>> KB1gmX
>

>
> Allison has touched all the important bases - his suggestion is the best
> way to do it.
>
> The idea of just pulling the plug will not work - you'll turn all the
> power devices into passive diode limiters, and if anything comes out at
> all, it will be filthy. Likewise the huge reduction in audio drive will
> not work, because the SSB/CW signal will drop down into the circuit
> noise, and probably well below the level of the not-quite-suppressed
> carrier.
>
> For a complete solution, install a little RF relay to switch the drive
> signal to an output socket on the rear of the transceiver. As Allison
> says, do this *after* the filters at the operating frequency, just
> before the signal enters the driver/PA boards. Also install a DC power
> relay to remove the supply to those RF power stages. Wire the two relays
> so that when they are not energized, the transceiver works as normal.
>
> The deluxe - and safe - way to control those relays is to supply 12V DC
> down the coax cable between the new output socket and the transverter
> (using RF chokes and blocking capacitors to separate the DC from the RF
> at each end). When the transverter is powered-on, it commands the
> transceiver to send it low power. When the transverter is off, the
> transceiver simply goes back to normal.
>
> You don't know exactly what power level the driver stages will provide.
> If it's too high, attenuate it. If it's too low, use an MMIC amp. If -
> as seems very likely - the transverter comes from Down East Microwave,
> the facilities you need will probably be on-board.
>
> As Allison says, use a separate route for RX input. This will require
> yet another small RF relay (powered the same way as the others) but it
> will make sure you can never empty the full transceiver power into the
> RX output of the transverter.
>
> This system with DC control down the low-level TX coax will take a
> little time to install, but it is highly reliable and very safe. I've
> used it on a number of rigs here over the past 20+ years, and it has
> never let me down.
>
>

2140. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 12:51:06 UTC
From: James Meyer <jmeyer@nowhere.com>
Message-ID: <uqtd50hoa8opunmd9vp60m1mqiqo989qtf@4ax.com>
Source record: 27678
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 15 Mar 2004 23:00:49 +0000, Paul Burridge <pb@osiris1.notthisbit.co.uk>
posted this:

>On Mon, 15 Mar 2004 19:05:02 +0000, John Woodgate
><jmw@jmwa.demon.contraspam.yuk> wrote:
>
>>The reason no-one seemed keen is that the OP's **complaint** was that
>>his 5th harmonic BP filter didn't produce any output.
>
>Eh?? Where did you get that from? I haven't even tried filtering yet!
>I still haven't exhausted all the other suggestions made during the
>course of this thread.
>
>>I think we have to supplement 'Read The Fascinating Manual' with 'RTCT'
>>- 'Read The Copulating Thread'.
>
>Perhaps you should...

Errr... I read the thread. And in your first message you say. "All I
can get apart from the fundamental is a strong third harmonic on 10.32Mhz,
regardless of what I tune for. I've tried passing the osc output through two
successive inverter gates to sharpen it up, but still nothing beyond the third
appears after tuned amplification for the fifth."

If I'm not mistaken, "tuned amplification" IS "filtering".

Jim

2141. Re: Icom IC-251A Low Power Mod?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 13:00:57 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <2co9UHKJqvVAFAUt@ifwtech.co.uk>
Source record: 27681

acepilot wrote:
>Ian,
>Thanks for the pointers! I could delete the relays since I am going to
>dedicate the IC-251A to low power service on a permanent basis. I
>bought the rig specifically to be used with transverters. I have a
>much newer rig that covers 2M (Yaesu FT-857) and it puts out 50 Watts
>instead of only 10 Watts like the IC-251A.
>
OK, that's fine. You can easily make the modifications reversible in
case you might want to sell the rig.

>Now it's just a matter of where to "pick off" that low level RF. I
>have it narrowed down to Q30 (pre-driver), but there is so much
>circuitry (coils and caps) between it's collector and the next stage's
>base lead. Do you think I could just remove the driver stage (Q31) and
>solder the center lead of a piece of coax, say RG-174, into the now
>empty base lead hole and bring it out the back of the rig? Is any sort
>of impedance matching required?
>
There you've lost me... I don't know the circuit details of that rig,
but at these very low levels it might well work without re-matching.

>The plan is to use this to drive the Down East Microwave series of
>transverters, so harmonics may not be a real big issue since I believe
>they have pretty tight filtering at their design frequencies that would
>greatly attenuate the next "spur" 144 MHz above the desired output
>(i.e. 1440 MHz for the 1296 transverter)...

That's correct. The level of the 1440MHz spur is mostly determined by
how hard you drive the mixer with the main 144MHz signal, and very
little by that signal's own harmonic content (unless of course it's
gross, which there is no reason to expect - the big harmonic generators
are the high-level stages that you won't be using).

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2142. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 13:02:42 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <hsrd5093en92fvku6gcqm8uosggiaqppdl@4ax.com>
Source record: 27679
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 15 Mar 2004 17:42:59 -0600, John Fields
<jfields@austininstruments.com> wrote:

>What???

Yup!!!

>According to your schematic, the input to R1 is a 2.16MHz square wave
>and L1VC1 is a parallel tuned tank, (filter) tuned to 10.8MHz. So is
>L2VC2C7. If you're not trying to do any filtering, what are those tanks
>doing in there?

The frequency of the square wave is actually 3.43Mhz (IIRC) the figure
you quote from the schematic is the *period.* Plus, the tanks are
actually shown tuned to 18.75Mhz (well the first one is, anyway, but
since they're variable caps they can be tweaked for the desired
frequency of 17.2Mhz. I've no idea how you've arrived at 10.8Mhz!
Yes, I realise tanks are a form of filter hence in prior postings I've
stated I'd not used any form of filtering *other than* the tanks.

--

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2143. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 13:02:44 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <16sd50hpiiee8ugg5r8o5ds0kn95h2jb7q@4ax.com>
Source record: 27680
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 15 Mar 2004 19:01:01 -0500, Active8 <reply2group@ndbbm.net>
wrote:

>So why beat yourself to death building a sweep gen to test filters
>when you got that there sig gen?

Because it has to be small and light enough to be mounted on our robot
for field checks. Try doing that with a 120lb Marconi. :-)

--

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2144. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 15:40:27 UTC
From: Active8 <reply2group@ndbbm.net>
Message-ID: <1nsrwdvrncpst$.dlg@news.individual.net>
Source record: 27682
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 16 Mar 2004 13:02:44 +0000, Paul Burridge wrote:

> On Mon, 15 Mar 2004 19:01:01 -0500, Active8 <reply2group@ndbbm.net>
> wrote:
>
>>So why beat yourself to death building a sweep gen to test filters
>>when you got that there sig gen?
>
> Because it has to be small and light enough to be mounted on our robot
> for field checks. Try doing that with a 120lb Marconi. :-)

That's more macaroni than even *this* eyetalian can eat.

You're confusing me again. If you have a filter on a bot in the
field, it's the same filter that was on the bot before you got there
and should do the same thing.

If you change a filter in the field, you'd want to sweep it before
it's installed in der bot.

--
Best Regards,
Mike

2145. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 18:53:08 UTC
From: kludge@panix.com
Message-ID: <c37iek$g15$1@xuxa.iecc.com>
Source record: 27683
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

tommyknocker <tomynokr@uucp.hell> wrote:
>Forget about getting an atomic clock to set in Hawaii. The signal is
>simply too weak. Atomic Time (who I bought my dual time clock from) says
>that it helps if you point the antenna (apparently they just use ferrite
>rod antennas-just like in a cheap transistor radio-to recieve) towards
>Fort Collins, which is due east of my QTH.

Huh? WWVH in Lihue used to come in five and nine everywhere in Hawaii.
On AM car radios, tape recorders, sometimes even rice cookers.
--scott

--
"C'est un Nagra. C'est suisse, et tres, tres precis."

2146. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 20:26:15 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <qgne50lt9rstumnao63f2o22m8kiqdqdo0@4ax.com>
Source record: 27685
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 16 Mar 2004 12:51:06 GMT, James Meyer <jmeyer@nowhere.com>
wrote:

> Errr... I read the thread. And in your first message you say. "All I
>can get apart from the fundamental is a strong third harmonic on 10.32Mhz,
>regardless of what I tune for. I've tried passing the osc output through two
>successive inverter gates to sharpen it up, but still nothing beyond the third
>appears after tuned amplification for the fifth."
>
> If I'm not mistaken, "tuned amplification" IS "filtering".

An argument over semantics, then. AFAIC it's not filtering as such.
It introduces a high degree of selectivity, certainly. But when
someone says "filtering" I assume they're taking about a pi-network or
something of that sort, between stages or at the end of a chain of
stages.
--

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2147. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 20:26:17 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <jpne50djr4vej20qp8onjpmpmdcaeova0k@4ax.com>
Source record: 27684
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 16 Mar 2004 10:40:27 -0500, Active8 <reply2group@ndbbm.net>
wrote:

>If you change a filter in the field, you'd want to sweep it before
>it's installed in der bot.

Sigh.. Yes, I know this has been raised (and answered at considerable
length before). Raised so often, in fact, that I wrote a full
explanation and stuck it on our website. Sadly, that's not up and
running at the moment so I can't refer you to it. Take it from me,
however, that there *is* method in my madness. :-)

--

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2148. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 21:18:30 UTC
From: Active8 <reply2group@ndbbm.net>
Message-ID: <69arhw66gl9g$.dlg@news.individual.net>
Source record: 27686
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 16 Mar 2004 20:26:17 +0000, Paul Burridge wrote:

> On Tue, 16 Mar 2004 10:40:27 -0500, Active8 <reply2group@ndbbm.net>
> wrote:
>
>
>>If you change a filter in the field, you'd want to sweep it before
>>it's installed in der bot.
>
> Sigh.. Yes, I know this has been raised (and answered at considerable
> length before). Raised so often, in fact, that I wrote a full
> explanation and stuck it on our website. Sadly, that's not up and
> running at the moment so I can't refer you to it. Take it from me,
> however, that there *is* method in my madness. :-)

I'll make a mental note to visit yer site once in a while. same
domain as the gifs you've been posting?
--
Best Regards,
Mike

2149. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 21:25:10 UTC
From: tdonaly@aol.com
Message-ID: <20040316162510.20170.00001560@mb-m27.aol.com>
Source record: 27687

Paul wrote,
>
>On Tue, 16 Mar 2004 12:51:06 GMT, James Meyer <jmeyer@nowhere.com>
>wrote:
>
>> Errr... I read the thread. And in your first message you say. "All I
>>can get apart from the fundamental is a strong third harmonic on 10.32Mhz,
>>regardless of what I tune for. I've tried passing the osc output through two
>>successive inverter gates to sharpen it up, but still nothing beyond the
>third
>>appears after tuned amplification for the fifth."
>>
>> If I'm not mistaken, "tuned amplification" IS "filtering".
>
>An argument over semantics, then. AFAIC it's not filtering as such.
>It introduces a high degree of selectivity, certainly. But when
>someone says "filtering" I assume they're taking about a pi-network or
>something of that sort, between stages or at the end of a chain of
>stages.
>--
>

You need to read up on active filters, and when you've done that, you should
read a book on digital filtering.
73,
Tom Donaly, KA6RUH

2150. A Simple Harmonic Generator.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-16 22:31:50 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c37v8m$1m8$1@sparta.btinternet.com>
Source record: 27688

The performance of a single-transistor pulse (harmonic)-generator is covered in program HARM_GEN now available from website below in a few seconds. Easy to run.

The manner in which the amplitude of the harmonics 1 to 30 vary with frequency and with operating angle (pulse width) are shown.

In general, with a very short pulse width, as the harmonic number increases, the output level falls fairly uniformly. But as pulse width (operating angle) increases then some harmonics almost disappear from the spectrum. The program displays harmonic levels in decibels.

Fourier, that great French mathematician/philosopher wuz right! I think he missed Madame guillotine.

Download program HARM_GEN now. It might be useful one day.

.....
Regards from Reg, G4FGQ
For Free Radio Design Software go to
http://www.btinternet.com/~g4fgq.regp
.....

2151. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 00:10:07 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <gf3f50d3pcar4fqosinrdp4tf992vgr2mt@4ax.com>
Source record: 27689
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 16 Mar 2004 16:18:30 -0500, Active8 <reply2group@ndbbm.net>
wrote:

>I'll make a mental note to visit yer site once in a while. same
>domain as the gifs you've been posting?

(Answered by e-mail)

--

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2152. Re: A Simple Harmonic Generator.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 00:10:08 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <mr3f50t9h66kugsfghm51cb8ll5m7i1391@4ax.com>
Source record: 27690

On Tue, 16 Mar 2004 22:31:50 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@ZZZbtinternet.com> wrote:

>Download program HARM_GEN now. It might be useful one day.

Bloody right! Thanks, Reg.
--

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2153. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 00:54:06 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403161654.559cf31a@posting.google.com>
Source record: 27691
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

FWIW, just now I had not trouble at all filtering the fifth out of a square wave, in exactly the way I suggest below. It seems very silly to me to put nonlinear elements in when you already have plenty of the harmonic you want. I don't know what logic family you're using, but if it's a modern one like 74AC, you should have several milliwatts of fifth harmonic available. A simple series resonant LC from the logic output to the base of a 2N2219-type transistor should get you at least a couple mA RMS of fifth harmonic base current, assuming a grounded-emitter stage with roughly 50 ohms input resistance. Make the loaded Q of the LC something around 10 to 20, and you won't screw up the amplifier with other harmonics or the fundamental. Be a bit careful about the coil you use, because it will be fairly high inductance for the frequency you're interested in...that is, keep the unloaded Q and the self-resonant frequency high enough. Use another moderate-Q tank in the collector circuit; you should be able to get over 100mW of fifth, with other harmonics down 40dB or more. You can get more complicated with the filtering if it's necessary, but for fixed-frequency operation, there's nothing wrong with simple synchronous tuning of single resonators set to reasonably high Q. If you insist on using the unnecessary complication of a multi-pole bandpass filter, be sure the one from the square wave to the amplifier starts with a series resonator, not a shunt resonator.

Sheesh...all you need to do is selectively amplify the harmonic you want; it's already there. Don't add complexity trying to generate something you already have in abundance.

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message news:<v9bc50dstrju40erj3dg9f4v7bi6athck4@4ax.com>...
> On Mon, 15 Mar 2004 20:03:24 +0000, John Woodgate
> <jmw@jmwa.demon.contraspam.yuk> wrote:
>
> >No, what has emerged from the discussion is that rather small deviations
> >from a perfect square waveform can drastically reduce the amount of one
> >or more harmonics in the spectrum, and this probably is the source of
> >the problem.
>
> Not this particular problem, it isn't!

2154. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 01:06:42 UTC
From: Tony <tony_roe@tpg.com.au>
Message-ID: <719f50hr5fnogbk2teemkqbobrc20v8cag@4ax.com>
Source record: 27692
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 16 Mar 2004 20:26:15 +0000, Paul Burridge <pb@osiris1.notthisbit.co.uk>
wrote:
>> If I'm not mistaken, "tuned amplification" IS "filtering".
>
>An argument over semantics, then. AFAIC it's not filtering as such.
>It introduces a high degree of selectivity, certainly. But when
>someone says "filtering" I assume they're taking about a pi-network or
>something of that sort, between stages or at the end of a chain of
>stages.

Wow - the strange things you learn on this thread! So how many poles does a
circuit need for it to be called a "filter"?

Tony (remove the "_" to reply by email)

2155. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 01:50:03 UTC
From: Terry Given <the_domes@xtra.co.nz>
Message-ID: <gFv5c.6399$rw6.120712@news.xtra.co.nz>
Source record: 27671
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:d52b50l8hqa05qrj05gchhng7ft0lh4tq4@4ax.com...
> Hi all,
>
> I've got quite a huge stash of inductors in my parts bin. The colour
> codes don't always seem to relate to the values I've been able to
> measure, with my multi-function DVM, however, and I can't accurately
> measure any inductor < about 10uH. Is there a circuit anywhere that
> would enable me to get a reasonably accurate idea of the values I've
> got down to say 100nH or thereabouts?
>

"splat" test

V=L*dI/dt

charge up a large cap to some voltage V

short the cap thru the inductor, and measure the current with a scope (digital is great, as long as the single-shot sample rate is high enough - I did this once with an HP 56000 series scope, and got 1 data point - very easy to fit a line to, very hard to fit the right line to!)

knowing dI/dt and V, calculate L

then, you can see saturation from where dI/dt increases rapidly (invaluable for power electronics)

also, ensure that 0.5CV^2 >> 0.5LI^2 at the current of interest - this ensures that V is approximately constant

I have a couple of 33mF 35V caps in parallel, with 10 x 1R MRS25 resistors paralleled as a current sensor. It takes about 45s to set up for a measurement. I often use the shaft of a screwdriver to make the "splat" - a nice hard material is good.

I have used this technique successfully to measure inductors ranging from the tiny (< 500nH) to huge (3mH 2,000A chokes). Actually, big chokes tend not to read true on LCR meters, as the magnetic material permeability is often much higher at very low currents - especially true of iron powder.

if you dont have a digital scope, make a tiny, LF oscillator with a 555. Drive a grunty FET, with a small (I use 0.1R - 10R) source resistor. Then, you'll get a repetitive waveform, which works nicely on any analogue scope. If Rsense is nice and low, use a 50R BNC cable to connect to scope, with a 50R terminator at the scope - lovely clean waveforms.

I built a little tester like this to test air gaps in planar cores for a 55W smps that lives inside an LED video screen (actually, thousands of them live inside). works a treat, and cost < $5.

One of my techs once built a splat tester for big chokes - he had several 1200V 600A IGBT's in parallel running as a series pass regulator, with about 100mF of capacitance (charged to 700Vdc thru several lightbulbs) to control V, even at currents on the order of 5,000A. A honking great LEM DCCT measured the current, and the "switch" was purely mechanical - he used the pole faces from an HV contactor, as the material is astonishingly arc resistant, so no pitting/welding

2156. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 01:54:27 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <7t9f50l98r2ga1c8vs2sdkr2bbdng1djkb@4ax.com>
Source record: 27694
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 16 Mar 2004 20:26:15 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>An argument over semantics, then. AFAIC it's not filtering as such.
>It introduces a high degree of selectivity, certainly. But when
>someone says "filtering" I assume they're taking about a pi-network or
>something of that sort, between stages or at the end of a chain of
>stages.

Any network which exhibits frequency selectivity is a filter, whether or
not you're concerned about whether or not it is or is not.

Think about it... from the lowly filter capacitor to the exalted
brickwall filter, they're all discrimating against a frequency or a set
of frequencies which we have told them we don't want them to let us see.

Filters, every one.

Just for grins, take a little trip over to a.b.s.e. (same subject
heading)and take a look at what John Larkin's series resonant filter
feeding a parallel resonant filter strategy looks like as far as
allowing you to get a fifth harmonic from a fundamental square wave
goes.

--
John Fields

2157. Re: Icom IC-251A Low Power Mod?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 01:54:50 UTC
From: acepilot <acepilot@bloomer.net>
Message-ID: <4057AFEA.8020102@bloomer.net>
Source record: 27693

WHAT?!?! Sell a rig? NEVER! =:O

Oops, sorry. I was thinking you had a schematic for the IC-251A.

Anyhow, I will proceed with my plan and throw it on the old spectrum analyzer and look for harmonics up to 26 GHz (the upper range of the spectrum analyzer) :)

Scott
N0EDV

Ian White, G3SEK wrote:

>>
> OK, that's fine. You can easily make the modifications reversible in
> case you might want to sell the rig.
>
>>
> There you've lost me... I don't know the circuit details of that rig,
> but at these very low levels it might well work without re-matching.
>
>
>
> That's correct. The level of the 1440MHz spur is mostly determined by
> how hard you drive the mixer with the main 144MHz signal, and very
> little by that signal's own harmonic content (unless of course it's
> gross, which there is no reason to expect - the big harmonic generators
> are the high-level stages that you won't be using).
>
>
>

2158. Eimac's new 3CX1500D7

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 02:43:40 UTC
From: "Kenneth D. Grimm, K4XL" <kgrimm@adelphia.invalid>
Message-ID: <0kef5096apm03v2edp929kihdbqm3vi62d@4ax.com>
Source record: 27695

The tentative spec sheets for the Eimac replacement for a pair of
3-500Zs, the new 3CX1500D7 is available for downloading on BAMA. It
is in pdf format and requires the Adobe Acrobat Free Reader Version 6
to read and print the pages.

73,
Ken K4XL - Replace "invalid" with "net" to reply.
*** BoatAnchor Manual Archive ***
On the web at http://bama.sbc.edu or
FTP site info: bama.sbc.edu login: anonymous p/w: youremailadr

2159. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 03:43:24 UTC
From: John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com>
Message-ID: <orhf5055l6hbrgtu4mr1d5pc30rnafc8l6@4ax.com>
Source record: 27696
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 16 Mar 2004 19:54:27 -0600, John Fields
<jfields@austininstruments.com> wrote:

>On Tue, 16 Mar 2004 20:26:15 +0000, Paul Burridge
><pb@osiris1.notthisbit.co.uk> wrote:
>
>
>>An argument over semantics, then. AFAIC it's not filtering as such.
>>It introduces a high degree of selectivity, certainly. But when
>>someone says "filtering" I assume they're taking about a pi-network or
>>something of that sort, between stages or at the end of a chain of
>>stages.
>
>---
>Any network which exhibits frequency selectivity is a filter, whether or
>not you're concerned about whether or not it is or is not.
>
>Think about it... from the lowly filter capacitor to the exalted
>brickwall filter, they're all discrimating against a frequency or a set
>of frequencies which we have told them we don't want them to let us see.
>
>Filters, every one.
>
>Just for grins, take a little trip over to a.b.s.e. (same subject
>heading)and take a look at what John Larkin's series resonant filter
>feeding a parallel resonant filter strategy looks like as far as
>allowing you to get a fifth harmonic from a fundamental square wave
>goes.
>

That's just a standard bandpass. What you do is pick a normalized
lowpass filter that has the response shape you like, say a Tchebychev
(I know... various spellings) and scale it to the impedance Z' and
bandwidth W' you want. Then series resonate each L with a C, and
parallel resonate each C with an L, both at some desired center
frequency. Voila (pardon my French) a bandpass that's 2W' wide.

There's no real reason to cascade lossy Q-killing tuned transistor
stages when you can put all your Ls and Cs in one place.

John

2160. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 07:02:21 UTC
From: averyfineman@aol.com
Message-ID: <20040317020221.05957.00001034@mb-m26.aol.com>
Source record: 27697

For a comparison of rectangular waveform on-times versus spectral
content, the following calculations were done on my WAVESPEC
program for a 0.50 to 0.25 times repetition period and with rise and
fall times equal to 0.02 times repetition period.

If the fundamental energy is the reference, then the harmonics
are down from that 0 db by the values shown:

```
/------------ width rel. to rep. period -==---------\
Harm 0.50 0.45 0.40 0.35 0.30 0.25
1 0 0 0 0 0 0
3 -6.4 -7.3 -8.4 -9.6 -11.1 -12.8
5 -28.0 -17.8 -15.1 -15.7 -20.3 *
7 -28.1 -20.1 -26.2 -27.7 -26.6 -29.1
9 -28.4 -24.6 -32.1 -44.2 -43.0 *
11 -28.7 -32.7 -42.2 -25.1 -35.8 -28.7
13 -29.1 * -29.1 * -29.1 *
```

* too far down to matter, not enough there

The above will hold true at any fundamental frequency provided the
rise and fall times are equal and each equal to 0.02 times the
repetition period. Those numbers will change given faster or slower
rise/fall times. All db calculated as 20 x Log (voltage). Width is
determined at the baseline, not the 50% amplitude point.

Len Anderson
retired (from regular hours) electronic engineer person

2161. Re: A Simple Harmonic Generator.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 09:31:55 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.0000007a.001d4120@btinternet.com>
Source record: 27698

Hi,

> Fourier, that great French mathematician/philosopher wuz right! I think he
> missed Madame guillotine.

Yes, he died in Paris in 1830. He was an active revolutionary but fell foul of the powers that be and was imprisoned for a short time. Fortunately for him they topped Robespierre first and he was released when the politics changed as a result. As he wasn't into electric phenomena, he wouldn't have realised the uses that the offshoot of his theory on the conduction of heat in solids (Fourier Series) would be put to in later years. So the next time you burn yourself, while holding a piece of wire you're in the act of soldering, you will know who to blame.

Cheers - Joe

2162. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 11:40:53 UTC
From: Peter John Lawton <peter_john.lawton@virgin.net>
Message-ID: <40583945.4745@virgin.net>
Source record: 27705

Avery Fineman wrote:
>
> For a comparison of rectangular waveform on-times versus spectral
> content, the following calculations were done on my WAVESPEC
> program for a 0.50 to 0.25 times repetition period and with rise and
> fall times equal to 0.02 times repetition period.
>
> If the fundamental energy is the reference, then the harmonics
> are down from that 0 db by the values shown:
>
> /------------ width rel. to rep. period -==--------\
> Harm 0.50 0.45 0.40 0.35 0.30 0.25
> 1 0 0 0 0 0 0
> 3 -6.4 -7.3 -8.4 -9.6 -11.1 -12.8
> 5 -28.0 -17.8 -15.1 -15.7 -20.3 *
> 7 -28.1 -20.1 -26.2 -27.7 -26.6 -29.1
> 9 -28.4 -24.6 -32.1 -44.2 -43.0 *
> 11 -28.7 -32.7 -42.2 -25.1 -35.8 -28.7
> 13 -29.1 * -29.1 * -29.1 *
>
> * too far down to matter, not enough there
>
> The above will hold true at any fundamental frequency provided the
> rise and fall times are equal and each equal to 0.02 times the
> repetition period. Those numbers will change given faster or slower
> rise/fall times. All db calculated as 20 x Log (voltage). Width is
> determined at the baseline, not the 50% amplitude point.
>
> Len Anderson
> retired (from regular hours) electronic engineer person

I wonder what happens to these numbers as the rise/fall time tends to
zero?

Peter Lawton

2163. Re: 100W linear PA: output matching

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 11:43:39 UTC
From: andy.pevy@nokia.com
Message-ID: <LRW5c.11828$k4.246105@news1.nokia.com>
Source record: 27699

SB <abc@abc.com> wrote:

> Heikki Ahola <heikki.ahola@vtt.fi> wrote in message
> news:40557CA3.D34DEDED@vtt.fi...

> Snip

>> Any comments/suggestions from more experienced homebrewers ? Also, if a
>> better but still low cost alternative for IFR510 has appeared in the
>> market, this info also taken into consideration when finalizing the
>> design...
>>
>> 73 de Heikki (OH2LZI)
>>

> Heikki,

> Have a look into amplifiers using the IRF840 mosfet device, they dissipate
> upto 125 watts max. Or check this site out
> http://www.wireless.org.uk/mosfet.htm

> 73 Simon G7CPN.

Also have a look at the latest copy of QST as there is a design for
this sort of PA in there.

Andy
G4XYW

--

We were always told that a million monkeys typing for a million years
would eventually produce the works of Shakespeare. Now, thanks to the
Internet, we know this is not true.

2164. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 12:03:01 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <118g509i2aoupqo89dol7er39lvudnicqb@4ax.com>
Source record: 27700
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 17 Mar 2004 11:06:42 +1000, Tony <tony_roe@tpg.com.au> wrote:

>On Tue, 16 Mar 2004 20:26:15 +0000, Paul Burridge <pb@osiris1.notthisbit.co.uk>
>wrote:
>>> If I'm not mistaken, "tuned amplification" IS "filtering".
>>
>>An argument over semantics, then. AFAIC it's not filtering as such.
>>It introduces a high degree of selectivity, certainly. But when
>>someone says "filtering" I assume they're taking about a pi-network or
>>something of that sort, between stages or at the end of a chain of
>>stages.
>
>Wow - the strange things you learn on this thread! So how many poles does a
>circuit need for it to be called a "filter"?

"Words mean what I choose them to mean! No more; no less."
- the Red Queen
:-)
--

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2165. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 12:03:02 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <56eg5054hmpnd4f0475mjjbsopn44or0d6@4ax.com>
Source record: 27701
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 16 Mar 2004 16:54:06 -0800, k7itm@aol.com (Tom Bruhns) wrote:

>FWIW, just now I had not trouble at all filtering the fifth out of a
>square wave, in exactly the way I suggest below. It seems very silly
>to me to put nonlinear elements in when you already have plenty of the
>harmonic you want.

What leads you to believe I have enough 5th harmonic in *my*
particular case? Are you satisfied with the square wave I posted? Does
it look up to the job?

> I don't know what logic family you're using, but
>if it's a modern one like 74AC, you should have several milliwatts of
>fifth harmonic available.

Currently 74HC but I've got some ACs (shouldn't need anything special
for this relatively low frequency target, I'd have thought).

>A simple series resonant LC from the logic
>output to the base of a 2N2219-type transistor should get you at least
>a couple mA RMS of fifth harmonic base current, assuming a
>grounded-emitter stage with roughly 50 ohms input resistance.

Should do, shouldn't it.

>Make
>the loaded Q of the LC something around 10 to 20, and you won't screw
>up the amplifier with other harmonics or the fundamental. Be a bit
>careful about the coil you use, because it will be fairly high
>inductance for the frequency you're interested in...that is, keep the
>unloaded Q and the self-resonant frequency high enough. Use another
>moderate-Q tank in the collector circuit; you should be able to get
>over 100mW of fifth, with other harmonics down 40dB or more. You can
>get more complicated with the filtering if it's necessary, but for
>fixed-frequency operation, there's nothing wrong with simple
>synchronous tuning of single resonators set to reasonably high Q. If
>you insist on using the unnecessary complication of a multi-pole
>bandpass filter, be sure the one from the square wave to the amplifier
>starts with a series resonator, not a shunt resonator.

I'm going to have a bash at this this afternoon. Not strictly
according to your suggestions at this stage, but I just want to know
if there's a sniff of 5th about at all.

>Sheesh...all you need to do is selectively amplify the harmonic you
>want; it's already there. Don't add complexity trying to generate

>something you already have in abundance.

Still waiting to see evidence of that "abundance" - no sign so far.
--

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2166. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 12:03:04 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <dueg50ppop4qmmdbvmgr2mhi2au1b5i9co@4ax.com>
Source record: 27702
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 16 Mar 2004 19:43:24 -0800, John Larkin
<jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> wrote:

>On Tue, 16 Mar 2004 19:54:27 -0600, John Fields
><jfields@austininstruments.com> wrote:

>>Just for grins, take a little trip over to a.b.s.e. (same subject
>>heading)and take a look at what John Larkin's series resonant filter
>>feeding a parallel resonant filter strategy looks like as far as
>>allowing you to get a fifth harmonic from a fundamental square wave
>>goes.

Okay, well at least I can see this one! Not sure about the SA trace,
though. Came out clearly enough but I'm not sure what you were trying
to prove by it. As for the 'scope traces, there doesn't seem to be any
phase correlation between the two and you don't indicate at what point
the probe was inserted. The square wave r/f slopes look a bit tardy,
too. What was the active device you used to generate them?

>That's just a standard bandpass. What you do is pick a normalized
>lowpass filter that has the response shape you like, say a Tchebychev
>(I know... various spellings) and scale it to the impedance Z' and
>bandwidth W' you want. Then series resonate each L with a C, and
>parallel resonate each C with an L, both at some desired center
>frequency. Voila (pardon my French) a bandpass that's 2W' wide.

It's basically the same type as Reg's program designed for me. That
was built on Sunday, tested and found to be bang on the money and
later today I shall try to see if it can be used to 'extract' the
elusive 5th. I have to admit I'll be surprised if there's nothing
there at all, but we'll have to wait and see. Don't touch that dial!
:-)

--

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2167. Polystyrene capacitors for filter networks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 12:03:06 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <6afg50lhac3arueiodioejthtojlr3tten@4ax.com>
Source record: 27703
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Hi,

They look worryingly inductive on visual inspection (there are metal foils rolled up in thar by the look of it.) And yet the CPC catalogue says that their properties make them ideal for use in filters. Has anyone any remarks (favourable or otherwise) to make about the use of this type of cap in filter apps?

p.
--

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2168. Re: Polystyrene capacitors for filter networks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 12:30:56 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <4yX5c.195740$A12.127587@edtnps84>
Source record: 27704
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Hi Paul!

There are non-inductively wound ones specifically for the purpose. The mfr. specs should show an ESR curve - the non-inductive ones are pretty flat to their SRF.

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

2169. Re: Polystyrene capacitors for filter networks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 13:24:19 UTC
From: Leon Heller <leon_heller@hotmail.com>
Message-ID: <40585184$0$14319$cc9e4d1f@news.dial.pipex.com>
Source record: 27706
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:6afg50lhac3arueiodioejthtojlr3tten@4ax.com...
> Hi,
>
> They look worryingly inductive on visual inspection (there are metal
> foils rolled up in thar by the look of it.) And yet the CPC catalogue
> says that their properties make them ideal for use in filters. Has
> anyone any remarks (favourable or otherwise) to make about the use of
> this type of cap in filter apps?

They are OK for LF filters, the inductance won't make any appreciable
difference and they are available with 1% tolerance. They are getting
difficult to find. They are also useful for RF oscillators.

Leon

2170. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 14:58:18 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <b3og50l0ppu0d3531vegtmpdnj0t8pgm07@4ax.com>
Source record: 27707
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 17 Mar 2004 12:03:04 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>Okay, well at least I can see this one! Not sure about the SA trace,
>though. Came out clearly enough but I'm not sure what you were trying
>to prove by it.

It's an FFT of what's coming out of Larkin's suggested two-stage
bandpass filter.

The first vertical marker (f1) goes through the first peak, 17.19MHz,
which proves the fifth is in a 3.44MHz square wave. The second marker
goes through 34.38, so so's the tenth.

> As for the 'scope traces, there doesn't seem to be any
>phase correlation between the two and you don't indicate at what point
>the probe was inserted.

Are you kidding? Count the high frequency cycles between the first
leading edge and the same point on the second leading edge of the square
wave and you'll find there are exactly five.

>The square wave r/f slopes look a bit tardy,
>too.

That's because the generator wasn't isolated from the filter and you're
seeing the filter's input dragging it around.

>What was the active device you used to generate them?

Tektronics FG502. Here's the layout:

```
[TEK FG502]-+-[BPF]-+-[TEK 2465A]---[HP5328A]
| |
| +-[HP54602B]
|
[TEK DC504]
```

--
John Fields

2171. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 15:13:55 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <ncqg50lu431irs9b7ulhrohlm4gqpdquna@4ax.com>
Source record: 27708
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 17 Mar 2004 08:58:18 -0600, John Fields
<jfields@austininstruments.com> wrote:

```
> [TEK FG502]-+-[BPF]-+-[TEK 2465A]---[HP5328A]
> | |
> | +-[HP54602B]
> |
> [TEK DC504]
```

Should be:

```
+---------|IN1 |
| |TEK2465A|
[TEK FG502]-+-[BPF]-+-|IN2 OUT2|---[HP5328A]
| |
| +-[HP54602B]
|
[TEK DC504]
```

--
John Fields

2172. Re: Polystyrene capacitors for filter networks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 15:45:34 UTC
From: Emoneg <Emoneg@nothere.com>
Message-ID: <xm_5c.1029$K51.152@newsfe1-win>
Source record: 27711
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:6afg50lhac3arueiodioejthtojlr3tten@4ax.com...
| Hi,
|
| They look worryingly inductive on visual inspection (there are metal
| foils rolled up in thar by the look of it.) And yet the CPC catalogue
| says that their properties make them ideal for use in filters. Has
| anyone any remarks (favourable or otherwise) to make about the use of
| this type of cap in filter apps?
|
| p.
| --
|
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Silly boy..... Go and find out about construction methods. The
metallisation is offset so the end terminations parallel the internal
layers.

DNA

2173. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 15:47:34 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <k5rg5093v0ms9os33u2dauf1g3vpaa7dq1@4ax.com>
Source record: 27709
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 17 Mar 2004 08:58:18 -0600, John Fields
<jfields@austininstruments.com> wrote:

>It's an FFT of what's coming out of Larkin's suggested two-stage
>bandpass filter.
>
>The first vertical marker (f1) goes through the first peak, 17.19MHz,
>which proves the fifth is in a 3.44MHz square wave. The second marker
>goes through 34.38, so so's the tenth.

Curious that there should be a sizeable pass response at the tenth
harmonic, isn't it? It doesn't appear to be *that* much down on the
intended pass frequency although there appears to be no indexing for
the y axis.

>Are you kidding? Count the high frequency cycles between the first
>leading edge and the same point on the second leading edge of the square
>wave and you'll find there are exactly five.

Well, I admit I'm a bit of a greenhorn on these things, but to my eyes
there appears to be some phase difference. I'll accept your word for
it there isn't.

>>What was the active device you used to generate them?
>
>---
>Tektronics FG502. Here's the layout:
>
>
>
> [TEK FG502]-+-[BPF]-+-[TEK 2465A]---[HP5328A]
> | |
> | +-[HP54602B]
> |
> [TEK DC504]

Many thanks. I hope it didn't involve you in too much setting-up time
to investigate this and post your findings.

--

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2174. Re: Polystyrene capacitors for filter networks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 15:47:37 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <qkrg50tjvcfg16tlm4g2m84huv49k0i8rs@4ax.com>
Source record: 27710

On Wed, 17 Mar 2004 12:30:56 GMT, Gregg <nospam@unknown.org> wrote:

>Hi Paul!
>
>There are non-inductively wound ones specifically for the purpose. The
>mfr. specs should show an ESR curve - the non-inductive ones are pretty
>flat to their SRF.

I notice some of them come with one end tinted red (or sometimes
black). Does this indicate the non inductively-wound type?

--

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2175. Re: 100W linear PA: output matching

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 15:59:22 UTC
From: andy.pevy@nokia.com
Message-ID: <uB_5c.11873$k4.246790@news1.nokia.com>
Source record: 27712

andy.pevy@nokia.com wrote:
> SB <abc@abc.com> wrote:

>> Heikki Ahola <heikki.ahola@vtt.fi> wrote in message
>> news:40557CA3.D34DEDED@vtt.fi...

>> Snip

>>> Any comments/suggestions from more experienced homebrewers ? Also, if a
>>> better but still low cost alternative for IFR510 has appeared in the
>>> market, this info also taken into consideration when finalizing the
>>> design...
>>>
>>> 73 de Heikki (OH2LZI)
>>>

>> Heikki,

>> Have a look into amplifiers using the IRF840 mosfet device, they dissipate
>> upto 125 watts max. Or check this site out
>> http://www.wireless.org.uk/mosfet.htm

>> 73 Simon G7CPN.

> Also have a look at the latest copy of QST as there is a design for
> this sort of PA in there.

Me again, QEX not QST, sorry.

> Andy
> G4XYW

> --

> We were always told that a million monkeys typing for a million years
> would eventually produce the works of Shakespeare. Now, thanks to the
> Internet, we know this is not true.

--

We were always told that a million monkeys typing for a million years
would eventually produce the works of Shakespeare. Now, thanks to the
Internet, we know this is not true.

2176. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 16:14:15 UTC
From: CA was in NJ <cainnj.cjb.net@cainnj.REVERSE_TO_REPLY__SPAMMERS_SHOT_ON_SIGHT>
Message-ID: <c39tgn$kt6$1@xuxa.iecc.com>
Source record: 27718
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc, rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

Scott Dorsey wrote:

>Huh? WWVH in Lihue used to come in five and nine everywhere in Hawaii.
>On AM car radios, tape recorders, sometimes even rice cookers.

The topic is WWVB, the binary signal. WWVH is the voice signal, which an autosetting clock will not understand.

2177. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 16:14:16 UTC
From: N8KDV <n8kdv@nospam.iserv.net>
Message-ID: <c39tgoktq1@xuxa.iecc.com>
Source record: 27715
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

Scott Dorsey wrote:

> tommyknocker <tomynokr@uucp.hell> wrote:
> >Forget about getting an atomic clock to set in Hawaii. The signal is
> >simply too weak. Atomic Time (who I bought my dual time clock from) says
> >that it helps if you point the antenna (apparently they just use ferrite
> >rod antennas-just like in a cheap transistor radio-to recieve) towards
> >Fort Collins, which is due east of my QTH.
>
> Huh? WWVH in Lihue used to come in five and nine everywhere in Hawaii.
> On AM car radios, tape recorders, sometimes even rice cookers.
> --scott

That may be the case Scott, but the 'atomic clocks' they are speaking of use
the WWVB signal from Ft. Collins, Colorado on 60 KHz to set their time
automatically.

That signal may indeed not be propagating well enough to be of use in Hawaii.

Steve
Holland, MI
Drake R7, R8 and R8B

http://www.iserv.net/~n8kdv/dxpage.htm

2178. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 16:14:17 UTC
From: Joseph Fenn <jfenn@lava.net>
Message-ID: <c39tgpkuq1@xuxa.iecc.com>
Source record: 27714
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

I agree with whoever said WWVH in Hawii is l/c and on same status
as wwv in Colorado, so these "skyscan" clocks should perform as
specified. I found though that my latest one will keep time
right to the second for a period of time, the I have to move it upstairs
where reception is better and leave it there for 24 hours. Once
reset to exact time tick I again put downstairs in the shack and its
good for another momth or so. I fail to see how the clock reader
can discriminate between WWVH (on Kauai) and WWV in Colorado.
Joe (aka kilroy)

****
* Ham KH6JF AARS/MARS ABM6JF QCWA WW2 VET WD RADIO *
****

On Tue, 16 Mar 2004, Scott Dorsey wrote:

> tommyknocker <tomynokr@uucp.hell> wrote:
> >Forget about getting an atomic clock to set in Hawaii. The signal is
> >simply too weak. Atomic Time (who I bought my dual time clock from) says
> >that it helps if you point the antenna (apparently they just use ferrite
> >rod antennas-just like in a cheap transistor radio-to recieve) towards
> >Fort Collins, which is due east of my QTH.
>
> Huh? WWVH in Lihue used to come in five and nine everywhere in Hawaii.
> On AM car radios, tape recorders, sometimes even rice cookers.
> --scott
>
> --
> "C'est un Nagra. C'est suisse, et tres, tres precis."
>
>

2179. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 16:14:21 UTC
From: tommyknocker <tomynokr@uucp.hell>
Message-ID: <c39tgt$l1k$1@xuxa.iecc.com>
Source record: 27716
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

Scott Dorsey wrote:

> tommyknocker <tomynokr@uucp.hell> wrote:
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> >simply too weak. Atomic Time (who I bought my dual time clock from) says
> >that it helps if you point the antenna (apparently they just use ferrite
> >rod antennas-just like in a cheap transistor radio-to recieve) towards
> >Fort Collins, which is due east of my QTH.
>
> Huh? WWVH in Lihue used to come in five and nine everywhere in Hawaii.
> On AM car radios, tape recorders, sometimes even rice cookers.
> --scott

But most atomic clocks use WWVB on 60 khz out of Fort Collins. WWVH, to
my knowledge, only uses HF freqs (5, 10, 15 Mhz). But yeah, I'm sure the
rice keeps better time than the people who eat it. :)

2180. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 16:14:24 UTC
From: Dave VanHorn <dvanhorn@cedar.net>
Message-ID: <c39th0$l39$1@xuxa.iecc.com>
Source record: 27717
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

"Scott Dorsey" <kludge@panix.com> wrote in message
news:c37iek$g15$1@xuxa.iecc.com...
> tommyknocker <tomynokr@uucp.hell> wrote:
> >Forget about getting an atomic clock to set in Hawaii. The signal is
> >simply too weak. Atomic Time (who I bought my dual time clock from) says
> >that it helps if you point the antenna (apparently they just use ferrite
> >rod antennas-just like in a cheap transistor radio-to recieve) towards
> >Fort Collins, which is due east of my QTH.
>
> Huh? WWVH in Lihue used to come in five and nine everywhere in Hawaii.
> On AM car radios, tape recorders, sometimes even rice cookers.
> --scott

I heard the LuaLuaLei transmitter a lot, but not WWVH, when I lived there.
500kW or 1MW IIRC, somewhere around 24kHz.

2181. Re: Polystyrene capacitors for filter networks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 16:14:28 UTC
From: Spehro Pefhany <speffSNIP@interlogDOTyou.knowwhat>
Message-ID: <klug509v86sfg1od54od0svr8i5k2i1pgc@4ax.com>
Source record: 27713
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 17 Mar 2004 15:45:34 -0000, the renowned "Emoneg"
<Emoneg@nothere.com> wrote:

>
>"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
>news:6afg50lhac3arueiodioejthtojlr3tten@4ax.com...
>| Hi,
>|
>| They look worryingly inductive on visual inspection (there are metal
>| foils rolled up in thar by the look of it.) And yet the CPC catalogue
>| says that their properties make them ideal for use in filters. Has
>| anyone any remarks (favourable or otherwise) to make about the use of
>| this type of cap in filter apps?
>|
>| p.
>| --
>|
>| The BBC: Licensed at public expense to spread lies.
>
>Silly boy..... Go and find out about construction methods. The
>metallisation is offset so the end terminations parallel the internal
>layers.
>
>DNA

Yup. Take two sheets of letter-size (okay, A4) paper and lay one on
top of the other but the top one to the right by 1/2". These are like
the plates of your capacitor. Now roll them up from the bottom to the
top into a tight roll. Imagine you connect to all the right end (in
parallel) by dipping it in some conductive goop, and call that lead A.
Do the same to the left, and call it lead B. The coiled construction
adds no inductance.

Best regards,
Spehro Pefhany
--
"it's the network..." "The Journey is the reward"
speff@interlog.com Info for manufacturers: http://www.trexon.com
Embedded software/hardware/analog Info for designers: http://www.speff.com

2182. Re: Polystyrene capacitors for filter networks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 18:12:04 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403171012.4e313e6@posting.google.com>
Source record: 27719
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Yeah, they're rolled up, but the contact is made across the ends,
generally, not just at one location in the roll. (That's why you
should build that vector network analyzer...) But I'd avoid them:
they can't take the heat. C0G ceramics and polyprops are both good.
C0G ceramics are available up to 10nF or so even in SMT; polyprops
down to 1nF at least and up to many uF.

Cheers,
Tom

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:<6afg50lhac3arueiodioejthtojlr3tten@4ax.com>...
> Hi,
>
> They look worryingly inductive on visual inspection (there are metal
> foils rolled up in thar by the look of it.) And yet the CPC catalogue
> says that their properties make them ideal for use in filters. Has
> anyone any remarks (favourable or otherwise) to make about the use of
> this type of cap in filter apps?
>
> p.

2183. Re: Polystyrene capacitors for filter networks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 18:21:12 UTC
From: Spehro Pefhany <speffSNIP@interlogDOTyou.knowwhat>
Message-ID: <m16h5059u4rb2f0oljo6nvkns168r5eo4l@4ax.com>
Source record: 27720
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 17 Mar 2004 10:12:04 -0800, the renowned k7itm@aol.com (Tom Bruhns)
wrote:

>Yeah, they're rolled up, but the contact is made across the ends,
>generally, not just at one location in the roll. (That's why you
>should build that vector network analyzer...) But I'd avoid them:
>they can't take the heat. C0G ceramics and polyprops are both good.
>C0G ceramics are available up to 10nF or so even in SMT; polyprops
>down to 1nF at least and up to many uF.

Would you believe 100nF/25V C0G in 1206? Not insanely expensive
either.

http://www.murata.com/catalog/c02/es0011.pdf1206? (page 5)

Best regards,
Spehro Pefhany
--
"it's the network..." "The Journey is the reward"
speff@interlog.com Info for manufacturers: http://www.trexon.com
Embedded software/hardware/analog Info for designers: http://www.speff.com

2184. Re: Ameco AC-1 problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 18:28:09 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BC7E02E5.2155%outhouse@midcoast.com>
Source record: 27721

Gary, you may be right regarding my power output measurement, but I thought
I knew how you calculate DC power and AC power of sinusoidial waveforms on
my scope, which, by multiplying with 0.707 you have to reduce first to the
aquivalent of a DC voltage.

What confuses me in your suggestion (printed below) is that even after you
rectify an AC signal and send it through a filter capacitor you STILL
suggest to multiply it times 0.707.
I would have thought that would give you the wrong result??

Where do I go wrong, if at all??

Uwe

in article 20040312171906.12145.00001420@mb-m02.aol.com, JGBOYLES at
jgboyles@aol.com wrote on 3/12/04 17:19:

>> So a 50 resistor serves as my dummy load and a meter connected to
>> the dummy load indicates around 10 volts RMS. If I did my homework that
>> would indicate around 2 watt output.
>
> Uwe, The 10 Vrms that your meter indicates may not be accurate at 3.5 or 7
> MHZ. It is probably OK at 60 hz. What you can derive from the 10 Vrms is
> that
> the AC-1 is producing power, just not sure how much.
> One thing you might try is a method to remove the frequency dependency of
> your measurements. Use a 10:1 voltage divider (10k and a 1.11k). Run this
> thru a Germanium or Schottky detector diode and a .01 filter capacitor. You
> now have a DC voltage that is proportional to power, and relatively frequency
> independent.
> To calculate the RMS voltage across the 50 ohm load: Read the DC volts out
> of the detector-Vdc. Then Vrms=(Vdc*.707)*10.
> Example: You read 2Vdc out of the detector. Vrms=14.14 volts. Power into
> the
> 50 ohm load is then: 14.14^2/50=4 Watts. The diode drop in the dector will
> introduce some error at QRP levels, hopefully not too much for what you are
> trying to do.
> 73 Gary N4AST

2185. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 19:33:45 UTC
From: kludge@panix.com
Message-ID: <c3a96pbbf1@xuxa.iecc.com>
Source record: 27725
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

In article <c39tgn$kt6$1@xuxa.iecc.com>,
CA was in NJ <cainnj.cjb.net@cainnj.REVERSE_TO_REPLY__SPAMMERS_SHOT_ON_SIGHT> wrote:
>Scott Dorsey wrote:
>
>>Huh? WWVH in Lihue used to come in five and nine everywhere in Hawaii.
>>On AM car radios, tape recorders, sometimes even rice cookers.
>
>The topic is WWVB, the binary signal. WWVH is the voice signal, which an
>autosetting clock will not understand.

I thought WWVH also had BCD data a couple times an hour? Or has that been
stopped along with the Omega navigation beacons?

Is there no VLF facility in Hawaii comparable to WWVB?
--scott
--
"C'est un Nagra. C'est suisse, et tres, tres precis."

2186. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 19:33:47 UTC
From: N8KDV <n8kdv@nospam.iserv.net>
Message-ID: <c3a96r$bc4$1@xuxa.iecc.com>
Source record: 27724
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

Joseph Fenn wrote:

> I agree with whoever said WWVH in Hawii is l/c and on same status
> as wwv in Colorado, so these "skyscan" clocks should perform as
> specified. I found though that my latest one will keep time
> right to the second for a period of time, the I have to move it upstairs
> where reception is better and leave it there for 24 hours. Once
> reset to exact time tick I again put downstairs in the shack and its
> good for another momth or so. I fail to see how the clock reader
> can discriminate between WWVH (on Kauai) and WWV in Colorado.
> Joe (aka kilroy)

They don't use WWV or WWVH. They use WWVB 60 kHz out of Fort Collins.

>
>
> **
> * Ham KH6JF AARS/MARS ABM6JF QCWA WW2 VET WD RADIO *
> **
>
> On Tue, 16 Mar 2004, Scott Dorsey wrote:
>
> > tommyknocker <tomynokr@uucp.hell> wrote:
> > >Forget about getting an atomic clock to set in Hawaii. The signal is
> > >simply too weak. Atomic Time (who I bought my dual time clock from) says
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> > --scott
> >
> > --
> > "C'est un Nagra. C'est suisse, et tres, tres precis."
> >
> >

2187. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 19:33:48 UTC
From: exray <dontspamexray@coqui.net>
Message-ID: <c3a96s$bd2$1@xuxa.iecc.com>
Source record: 27727
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

Joseph Fenn wrote:
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> where reception is better and leave it there for 24 hours. Once
> reset to exact time tick I again put downstairs in the shack and its
> good for another momth or so. I fail to see how the clock reader
> can discriminate between WWVH (on Kauai) and WWV in Colorado.
> Joe (aka kilroy)
>
>
>
> **
> * Ham KH6JF AARS/MARS ABM6JF QCWA WW2 VET WD RADIO *
> **

The data sent on 60 kHz by WWVB isn't transmitted by WWVH. Here's a
chart of the coverage areas of WWVB and it looks like it has a decent
chance of being received in KH6-land at certain hours, like 0800 UTC.
http://www.boulder.nist.gov/timefreq/stations/wwvbcoverage.htm

-ex

2188. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 19:33:50 UTC
From: Dave VanHorn <dvanhorn@cedar.net>
Message-ID: <c3a96ubdq1@xuxa.iecc.com>
Source record: 27726
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc, rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

"Dave VanHorn" <dvanhorn@cedar.net> wrote in message
news:c39th0$l39$1@xuxa.iecc.com...
>
> "Scott Dorsey" <kludge@panix.com> wrote in message
> news:c37iek$g15$1@xuxa.iecc.com...
> > tommyknocker <tomynokr@uucp.hell> wrote:
> > >Forget about getting an atomic clock to set in Hawaii. The signal is
> > >simply too weak. Atomic Time (who I bought my dual time clock from)
says
> > >that it helps if you point the antenna (apparently they just use
ferrite
> > >rod antennas-just like in a cheap transistor radio-to recieve) towards
> > >Fort Collins, which is due east of my QTH.
> >
> > Huh? WWVH in Lihue used to come in five and nine everywhere in Hawaii.
> > On AM car radios, tape recorders, sometimes even rice cookers.
> > --scott
>
> I heard the LuaLuaLei transmitter a lot, but not WWVH, when I lived there.
> 500kW or 1MW IIRC, somewhere around 24kHz.

WWVH is the 2.5, 5, 10, 15, and 20 MHz voice and data transmitter, it's on
exactly the same freq as WWV in Ft Collins. If you listen, there's a
silence before the guy on WWV speaks, that's for the lady from WWVH to talk
first. (very polite :)

The clocks use WWVB which is a 60 khz signal.
Interference from LuaLuaLei may make that impossible to pick up.
There also used to be a Loran transmitter around 100kHz IIRC, on the north
shore of Oahu, but they may have taken that down now.

2189. Re: Polystyrene capacitors for filter networks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 19:42:14 UTC
From: averyfineman@aol.com
Message-ID: <20040317144214.23307.00007355@mb-m29.aol.com>
Source record: 27722

In article <6afg50lhac3arueiodioejthtojlr3tten@4ax.com>, Paul Burridge
<pb@osiris1.notthisbit.co.uk> writes:

>They look worryingly inductive on visual inspection (there are metal
>foils rolled up in thar by the look of it.) And yet the CPC catalogue
>says that their properties make them ideal for use in filters. Has
>anyone any remarks (favourable or otherwise) to make about the use of
>this type of cap in filter apps?

BIG difference between two types of rolled-foil style or "tubular"
capacitors even at MF. For MF or even LF, use the low-inductance
"extended foil" type; manufacturers will indicate that difference on
datasheets, catalog listings.

Extended-foil construction offsets the layering so that one foil
overlaps the insulating film or paper at one end, the other foil
overlapping the other end. When axial leads are attached, the
foil overlaps is crimped down on the lead so that nearly all turns
of the foil at one end contact the lead. Minimum inductance.

Conventional old style of construction had the two foils neatly
aligned with no foil protruding from the wider insulating layers.
Axial leads were then clamped at only one end of the foil wrap
end (usually the finish end) and the result had a fair amount of
residual inductance in the remainder of the foil wrapping.

A few makers introduced deliberately series-resonant bypass
tubulars many years ago, intended for the ubiquitous 455 KHz
IF amplifier stage bypassing. Broad series resonance but it
worked (sort of). Rather a rare tubular now. Curiosity.

Len Anderson
retired (from regular hours) electronic engineer person

2190. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 19:42:15 UTC
From: averyfineman@aol.com
Message-ID: <20040317144215.23307.00007356@mb-m29.aol.com>
Source record: 27723

In article <c39tgpkuq1@xuxa.iecc.com>, Joseph Fenn <jfenn@lava.net> writes:

>I agree with whoever said WWVH in Hawii is l/c and on same status
>as wwv in Colorado, so these "skyscan" clocks should perform as
>specified. I found though that my latest one will keep time
>right to the second for a period of time, the I have to move it upstairs
>where reception is better and leave it there for 24 hours. Once
>reset to exact time tick I again put downstairs in the shack and its
>good for another momth or so. I fail to see how the clock reader
>can discriminate between WWVH (on Kauai) and WWV in Colorado.

The answer on "discrimination" is on the NIST time-frequency pages.
The "tick" from WWV in Colorado is 6 cycles of a 1 KHz sine; the
"tick" from WWVH is 5 cycles of a 1.2 KHz sine.

Scoping a receiver detector output will show that. Looks unusual
when somewhere in between Hawaii and Colorado and propagation
makes both about the same strength. :-)

In the ancient times of prehistory, circa 1955 or so, many TV
broadcast stations did a time-sync of station clocks from the fixed
tone onset from WWV...either there or not there and the periodicity
of the background tone was very predictable. WREX-TV did that
in the midwest when I worked there in 1956. Thought that they
would have done it much fancier ways but that albeit crude way
worked out very well to keep station clocks within a second.
[Time is the income commodity of all commercial broadcast
stations and muy importante]

I'm not familiar with the old Heathkit "Most Accurate Clock" for use
on HF at 5, 10, 15 MHz. Someone else can comment on their
discrimination circuits (if any).

Len Anderson
retired (from regular hours) electronic engineer person

2191. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 19:42:16 UTC
From: averyfineman@aol.com
Message-ID: <20040317144216.23307.00007357@mb-m29.aol.com>
Source record: 27728

In article <40583945.4745@virgin.net>, Peter John Lawton
<peter_john.lawton@virgin.net> writes:

>> The above will hold true at any fundamental frequency provided the
>> rise and fall times are equal and each equal to 0.02 times the
>> repetition period. Those numbers will change given faster or slower
>> rise/fall times. All db calculated as 20 x Log (voltage). Width is
>> determined at the baseline, not the 50% amplitude point.
>>
>> Len Anderson
>> retired (from regular hours) electronic engineer person
>
>I wonder what happens to these numbers as the rise/fall time tends to
>zero?

The harmonic content will increase...but also show dips depending
on the percentage width relative to the period. I could present those
(takes only minutes to run the program and transcribe the results)
but that is academic only. The rise and fall times will NOT be zero
due to the repetition frequency being high (repetition time short).

Consider that a 3 MHz waveform has a period of 333 1/3 nSec and
that Paul is using a TTL family inverter to make the square wave.
Even with a Schmitt trigger inverter the t_r and t_f are going to be
finite, possibly 15 nSec with a fast device (and some capacitive
loading or semi-resonant whatever to mess with on- and off-times).

15 nSec is 4.5% of the repetition period, quite finite...more than I
showed on the small table given previously.

I'm sure someone out there wants to argue minutae on numbers but
what is being discussed is a squarish waveform with a repetition
frequency in the low HF range. Periods are valued in nanoSeconds
and the on/off times of squaring devices are ALSO in nanoSeconds.
There's just NOT going to be any sort of "zero" on/off times with
practical logic devices used by hobbyists.

What is not intuitive to me (and to others) is that harmonic energy
of a rectangular waveform drops drastically by the 5th harmonic
and is certainly lower than "obvious" numbers bandied about.

But, also mentioned before by others is that shortening the rect-
angular waveshape DOES increase the 5th harmonic, as evident
by the approximate 12 db increase at 40 to 35 percent of the
repetition period.

An equivalent shortening happens in vacuum tube multipliers through biasing (self, fixed, or both) and that can be adjustable along with the drive level. It's not quite the same with bipolars since the overdrive effects are more saturation than in the self-bias conditions of tubes. It's close, though.

From all indications of the Fourier series results, there's a definite reason why so few multipliers went beyond tripling. The amount of energy (relative to fundamental and taking into account the finite rise and fall times) of 4th and higher harmonics just isn't as much as intuition would have everyone believe!

Len Anderson
retired (from regular hours) electronic engineer person

2192. Re: A Simple Harmonic Generator.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 19:47:08 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c3a9vs$22i$2@sparta.btinternet.com>
Source record: 27729

> > Fourier, that great French mathematician/philosopher wuz right! I think
he
> > missed Madame guillotine.
>
> Yes, he died in Paris in 1830.
> As he wasn't into electric phenomena, he wouldn't have realised the
> uses that the offshoot of his theory on the conduction of heat in solids (
> Fourier Series) would be put to in later years.
>
> So the next time you burn yourself, while
> while holding a piece of wire you're in the
> act of soldering, you will know who to blame.

No. Its the LACK of understanding of the Fourier Series which causes
blisters.

It is not surprising Fourier narrowly escaped the guiliotine. During that
era the French were ahead of the world in mathematics, statistics, physics,
etc. But the researchers were the idle rich of the nobility who did it as a
satisfying hobby.

For example, the idle rich used the technical subject of probability and
statistics to help themselves at the tables in the Parisian gaming houses.
This was not an activity likely to endear itself to the revolutionary mobs
behind the barracades in the streets of French cities. And so a number of
clever academics and noblemen fell to the embrace of Madamme Guilotine.
Napoleon soon put things on the right track.

Although Fourier Analysis was first applied to the conduction of heat by the
French philosophers it has, of course, since been applied to electrical
matters.

But it was Oliver Heaviside, a self-taught Englishman from the working
class, who many years later, around 1872 solved the mathematical problems
associated with the transient behaviour of electrical equipment and
transmission lines. He too ended up with an infinite series of terms, not
functions of frequency, but ot time.

Reg.

2193. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 20:31:14 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403171231.1861ff1c@posting.google.com>
Source record: 27730
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:<56eg5054hmpnd4f0475mjjbsopn44or0d6@4ax.com>...
...
> What leads you to believe I have enough 5th harmonic in *my*
> particular case?

The trace on the web site you provided a link to. The fact that you're using HC logic (which has inherent rise and fall times rather faster than the square wave source I used in my experiment). Your avering that the duty cycle is very nearly 50%. That's not to say you aren't doing something to kill it, but it's NOT difficult to extract it. Note that the subject you put on this thread really nails it: all you need to do is extract (and possibly amplify, depending on the final power level you need) what's already there. Now go do it. But feeding the whole square wave to the amplifier stage is a BAD idea because you can inadventently change the duty cycle (as seen at that amplifier's output) to one where the fifth is nulled. If you only need a few milliwatts, you can get that from the square wave directly, if the source impedance is low enough, simply by using the proper filter.

2194. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 20:59:56 UTC
From: N8KDV <n8kdv@nospam.iserv.net>
Message-ID: <c3ae8c$9ne$1@xuxa.iecc.com>
Source record: 27731
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc, rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

Scott Dorsey wrote:

> In article <c39tgn$kt6$1@xuxa.iecc.com>,
> CA was in NJ <cainnj.cjb.net@cainnj.REVERSE_TO_REPLY__SPAMMERS_SHOT_ON_SIGHT> wrote:
> >Scott Dorsey wrote:
> >
> >>Huh? WWVH in Lihue used to come in five and nine everywhere in Hawaii.
> >>On AM car radios, tape recorders, sometimes even rice cookers.
> >
> >The topic is WWVB, the binary signal. WWVH is the voice signal, which an
> >autosetting clock will not understand.
>
> I thought WWVH also had BCD data a couple times an hour?

They do.

> Is there no VLF facility in Hawaii comparable to WWVB?

No.

2195. Re: Ameco AC-1 problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 22:23:13 UTC
From: jgboyles@aol.com
Message-ID: <20040317172313.16154.00001679@mb-m11.aol.com>
Source record: 27732

>What confuses me in your suggestion (printed below) is that even after you
>rectify an AC signal and send it through a filter capacitor you STILL
>suggest to multiply it times 0.707.
>I would have thought that would give you the wrong result??

Uwe, Wouldn't be the first time I was wrong.
If you rectify and filter an AC waveform, and the read the DC voltage, this is Vpeak of the AC. In the example I gave, you read 2 vdc out of the detector circuit. Multiply this times the X10 divider, and you get 20vdc which is Vpeak across the 50 ohm load. To get the rms voltage across the load Vpeak*.707=20*.707=14.14 Vrms. 14.14Vrms across 50 ohms=4 watts.
BTW, the reason I suggested a voltage divider (attenuator) rather than reading directly with a VOM or scope is to reduce the likelyhood of the scope probe or meter impedance from detuning the AC-1 causing further errors.
If you are using a scope, measure the Vpeak across the 50 ohm resistor, multiply by .707 to get Vrms.
73 Gary N4AST

2196. FA:Collins/Drake mic plugs + ...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 22:55:10 UTC
From: Heytubeguy <heytubeguy@worldnet.att.net>
Message-ID: <iH46c.27155$Pa7.696018@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27733

See my list at

http://cgi6.ebay.com/ws/eBayISAPI.dll?ViewSellersOtherItems&userid=heytubeguy&completed=0&sort=3&since=-1&include=0&page=1&rows=25

tnx heytubeguy

2197. FA: HRO + VELVET KNOBS + ...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 22:55:59 UTC
From: Heytubeguy <heytubeguy@worldnet.att.net>
Message-ID: <3l46c.27157$Pa7.696432@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27734

See my list at

http://cgi6.ebay.com/ws/eBayISAPI.dll?ViewSellersOtherItems&userid=heytubeguy&completed=0&sort=3&since=-1&include=0&page=1&rows=25

tnx heytubeguy

2198. Re: Polystyrene capacitors for filter networks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 23:01:13 UTC
From: Emoneg <Emoneg@nothere.com>
Message-ID: <WK46c.7336$2d4.2299@newsfe1-win>
Source record: 27735
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Spehro Pefhany" <speffSNIP@interlogDOTyou.knowwhat> wrote in message
news:m16h5059u4rb2f0oljo6nvkns168r5eo4l@4ax.com...
|
| Would you believe 100nF/25V C0G in 1206? Not insanely expensive
| either.
|
| http://www.murata.com/catalog/c02/es0011.pdf1206? (page 5)
|
| Best regards,
| Spehro Pefhany
| --
| "it's the network..." "The Journey is the
reward"
| speff@interlog.com Info for manufacturers:
http://www.trexon.com
| Embedded software/hardware/analog Info for designers:
http://www.speff.com

Gosh! Zero tempco decoupling for the digital folks.

DNA

2199. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 23:43:57 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <p5nh50hd2chu14esrefbt6svpmhvvoi0kj@4ax.com>
Source record: 27736
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 17 Mar 2004 12:31:14 -0800, k7itm@aol.com (Tom Bruhns) wrote:

>Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:<56eg5054hmpnd4f0475mjjbsopn44or0d6@4ax.com>...
>...
>> What leads you to believe I have enough 5th harmonic in *my*
>> particular case?
>
>The trace on the web site you provided a link to. The fact that
>you're using HC logic (which has inherent rise and fall times rather
>faster than the square wave source I used in my experiment). Your
>avering that the duty cycle is very nearly 50%. That's not to say you
>aren't doing something to kill it, but it's NOT difficult to extract
>it. Note that the subject you put on this thread really nails it:
>all you need to do is extract (and possibly amplify, depending on the
>final power level you need) what's already there. Now go do it. But
>feeding the whole square wave to the amplifier stage is a BAD idea
>because you can inadventently change the duty cycle (as seen at that
>amplifier's output) to one where the fifth is nulled. If you only
>need a few milliwatts, you can get that from the square wave directly,
>if the source impedance is low enough, simply by using the proper
>filter.

Yes, but I'd hoped to avoid any intermediate amplification stages.
Looks like I'll have to swallow it.

--

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2200. Re: Polystyrene capacitors for filter networks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 23:43:59 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <2dnh5091u91ogmmi7tmoge1b8evk4gsvrb@4ax.com>
Source record: 27737
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 17 Mar 2004 18:21:12 GMT, Spehro Pefhany
<speffSNIP@interlogDOTyou.knowwhat> wrote:

>On 17 Mar 2004 10:12:04 -0800, the renowned k7itm@aol.com (Tom Bruhns)
>wrote:
>
>>Yeah, they're rolled up, but the contact is made across the ends,
>>generally, not just at one location in the roll. (That's why you
>>should build that vector network analyzer...) But I'd avoid them:
>>they can't take the heat. C0G ceramics and polyprops are both good.
>>C0G ceramics are available up to 10nF or so even in SMT; polyprops
>>down to 1nF at least and up to many uF.
>
>Would you believe 100nF/25V C0G in 1206? Not insanely expensive
>either.

It's almost as if they can defy the laws of physics these days....
Next thing you know: 100A FETs in the same package. :-|
--

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2201. Re: Polystyrene capacitors for filter networks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-17 23:44:00 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <hknh509b1vrg6j33c8apcii0eeenirr9il@4ax.com>
Source record: 27738
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 17 Mar 2004 15:45:34 -0000, "Emoneg" <Emoneg@nothere.com>
wrote:

>
>"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
>news:6afg50lhac3arueiodioejthtojlr3tten@4ax.com...
>| Hi,
>|
>| They look worryingly inductive on visual inspection (there are metal
>| foils rolled up in thar by the look of it.) And yet the CPC catalogue
>| says that their properties make them ideal for use in filters. Has
>| anyone any remarks (favourable or otherwise) to make about the use of
>| this type of cap in filter apps?

>Silly boy......

Sorry. I'll try not to ask such *stupid* questions again.
--

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2202. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 00:42:22 UTC
From: Tony <tony_roe@tpg.com.au>
Message-ID: <karh50tspcsujtphflbielc8fjet64h3k0@4ax.com>
Source record: 27741
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Ignoring most of the previous posts in this thread (sorry - I deleted them) it occurs to me that maybe the problem may be the relatively low impedance load on the buffer, whose finite output impedance therefore causes some waveform distortion and loss of 5th harmonic. So how about a hi-Z parallel tank coupling circuit; for 17.2MHz (say 4p7 || 18uH) into a load of 100-500 ohms (say a 1k pot + 100n to Gnd, to see the effect of load variations), then into another 74AC buffer?

Tony (remove the "_" to reply by email)

2203. Re: Polystyrene capacitors for filter networks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 00:45:45 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <Zi66c.198651$A12.14528@edtnps84>
Source record: 27739

Behold, Paul Burridge signalled from keyed 4-1000A filament:

> On Wed, 17 Mar 2004 12:30:56 GMT, Gregg <nospam@unknown.org> wrote:
>
>>Hi Paul!
>>
>>There are non-inductively wound ones specifically for the purpose. The
>>mfr. specs should show an ESR curve - the non-inductive ones are pretty
>>flat to their SRF.
>
> I notice some of them come with one end tinted red (or sometimes black).
> Does this indicate the non inductively-wound type?
>

Nope. That just indicates the "outside" foil - commonly goes to ground.

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

2204. Re: Polystyrene capacitors for filter networks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 00:57:11 UTC
From: Spehro Pefhany <speffSNIP@interlogDOTyou.knowwhat>
Message-ID: <1bth505bk0voq1nadte5q3hr3nma8i3fkm@4ax.com>
Source record: 27740
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 17 Mar 2004 23:01:13 -0000, the renowned "Emoneg"
<Emoneg@nothere.com> wrote:

>
>Gosh! Zero tempco decoupling for the digital folks.
>DNA

The Z5U parts pretty much magically disappear if you get them cold..
but X7R is good enuf.

Best regards,
Spehro Pefhany
--
"it's the network..." "The Journey is the reward"
speff@interlog.com Info for manufacturers: http://www.trexon.com
Embedded software/hardware/analog Info for designers: http://www.speff.com

2205. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 01:33:17 UTC
From: Tony <tony_roe@tpg.com.au>
Message-ID: <cuuh505t2j4o5unqc82lu11trah5fb2359@4ax.com>
Source record: 27742
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Thu, 18 Mar 2004 10:42:22 +1000, Tony <tony_roe@tpg.com.au> wrote:

>Ignoring most of the previous posts in this thread (sorry - I deleted them) it
>occurs to me that maybe the problem may be the relatively low impedance load on
>the buffer, whose finite output impedance therefore causes some waveform
>distortion and loss of 5th harmonic. So how about a hi-Z parallel tank coupling
>circuit; for 17.2MHz (say 4p7 || 18uH) into a load of 100-500 ohms (say a 1k pot
>+ 100n to Gnd, to see the effect of load variations), then into another 74AC
>buffer?
>
>Tony (remove the "_" to reply by email)

Actually the tank's output will be biased to half-rail, which won't necessarily
bias the CMOS output buffer properly. May need to cap-couple to the buffer, with
a feedback resistor so it will self-bias (another case of reading the post AFTER
hitting "send").
Tony (remove the "_" to reply by email)

2206. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 03:00:18 UTC
From: jfields@texas.net
Message-ID: <40590eda.2378760@news.texas.net>
Source record: 27743
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 17 Mar 2004 23:43:57 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>On 17 Mar 2004 12:31:14 -0800, k7itm@aol.com (Tom Bruhns) wrote:
>
>>Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:<56eg5054hmpnd4f0475mjjbsopn44or0d6@4ax.com>...
>>...
>>> What leads you to believe I have enough 5th harmonic in *my*
>>> particular case?
>>
>>The trace on the web site you provided a link to. The fact that
>>you're using HC logic (which has inherent rise and fall times rather
>>faster than the square wave source I used in my experiment). Your
>>avering that the duty cycle is very nearly 50%. That's not to say you
>>aren't doing something to kill it, but it's NOT difficult to extract
>>it. Note that the subject you put on this thread really nails it:
>>all you need to do is extract (and possibly amplify, depending on the
>>final power level you need) what's already there. Now go do it. But
>>feeding the whole square wave to the amplifier stage is a BAD idea
>>because you can inadventently change the duty cycle (as seen at that
>>amplifier's output) to one where the fifth is nulled. If you only
>>need a few milliwatts, you can get that from the square wave directly,
>>if the source impedance is low enough, simply by using the proper
>>filter.
>
>Yes, but I'd hoped to avoid any intermediate amplification stages.
>Looks like I'll have to swallow it.

That doesn't make any sense from the point of view that you've already
posted a schematic showing a couple of gain stages. How much 17 MHz.
do you really need and what does what you want to feed it into look
like?

2207. Re: Polystyrene capacitors for filter networks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 04:11:52 UTC
From: qrk <mark@reson.DELETE.ME.com>
Message-ID: <a58i50pqd8fqhrjv39a92llv4h0qbdd5pr@4ax.com>
Source record: 27744
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 17 Mar 2004 12:03:06 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>Hi,
>
>They look worryingly inductive on visual inspection (there are metal
>foils rolled up in thar by the look of it.) And yet the CPC catalogue
>says that their properties make them ideal for use in filters. Has
>anyone any remarks (favourable or otherwise) to make about the use of
>this type of cap in filter apps?
>
>p.

They're great for LC filters. If you choose your ferrite right, you
can have a pretty stable filter over temperature. Problem is, not many
people make these any more. For production, avoid them due to
availability. If you're worried about inductance, that probably means
that you're in the MHz region which means you can use NPO (COG)
ceramic. Easier to get.

Mark

2208. Re: Polystyrene capacitors for filter networks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 05:27:09 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <Nqa6c.243271$Hy3.317@edtnps89>
Source record: 27746
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Behold, qrk signalled from keyed 4-1000A filament:

> On Wed, 17 Mar 2004 12:03:06 +0000, Paul Burridge
> <pb@osiris1.notthisbit.co.uk> wrote:
>
>>Hi,
>>
>>They look worryingly inductive on visual inspection (there are metal
>>foils rolled up in thar by the look of it.) And yet the CPC catalogue
>>says that their properties make them ideal for use in filters. Has
>>anyone any remarks (favourable or otherwise) to make about the use of
>>this type of cap in filter apps?
>>
>>p.
>
> They're great for LC filters. If you choose your ferrite right, you can
> have a pretty stable filter over temperature.

Air-core my good man, air-core ;-)

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

2209. Re: Polystyrene capacitors for filter networks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 06:06:03 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403172206.c6027ef@posting.google.com>
Source record: 27597
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Emoneg" <Emoneg@nothere.com> wrote in message news:<WK46c.7336$2d4.2299@newsfe1-win>...

> Gosh! Zero tempco decoupling for the digital folks.

Don't laugh. Someone just today quite seriously suggested C0G bypass
caps for op amp power supplies for something I'm working on, and I'd
need at least 100nF for the task.

Cheers,
Tom

2210. Blowing NE602s.Why?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 06:10:14 UTC
From: n2cqr@clix.pt
Message-ID: <97f305da.0403172210.127a5942@posting.google.com>
Source record: 27598

I'm using an NE602 as a balanced modulator in a simple DSB transmitter.
The circuit is similar to that of the K2.
My problem is that in the course of debugging the TX, I've somehow
destroyed three NE602s. At first I thought it was voltage spikes
from the T/R relay, so I put a diode across the relay coil to knock that
down. Then I blew another one. Now I suspect that somehow the problem
is related to parasitics that I'm trying to eliminate in the PA: There is
an impednce transformer in the 602's output circuit that would look like
a big step up transformer to any RF that that nasty oscillating PA might
send back down to the modulator.

What do guys think? Is this a likely suspect? Anyone know of other causes
for this kind of 602 carnage? Stop me before I kill again!

73 from London
Bill M0HBR N2CQR CU2JL
http://planeta.clix.pt/n2cqr

2211. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 06:19:39 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403172219.619e7c5d@posting.google.com>
Source record: 27599
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:<p5nh50hd2chu14esrefbt6svpmhvvoi0kj@4ax.com>...

> Yes, but I'd hoped to avoid any intermediate amplification stages.
> Looks like I'll have to swallow it.

Exactly how much power do you need? Exactly how "clean" (free from
other harmonics) must it be? Don't you have an amplifier in the
circuit you're playing with anyway? 100mW should be easy with a
single stage following the digital square wave, and a full watt is
certainly feasible with the right design. If you were hoping for
100mW of fifth harmonic from a single HC output, you were probably
dreaming.

2212. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 10:42:19 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <d2ti50hniroh6p6skmck1ahd6pkgqj0t5i@4ax.com>
Source record: 27601
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 17 Mar 2004 22:19:39 -0800, k7itm@aol.com (Tom Bruhns) wrote:

>Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:<p5nh50hd2chu14esrefbt6svpmhvvoi0kj@4ax.com>...
>
>
>> Yes, but I'd hoped to avoid any intermediate amplification stages.
>> Looks like I'll have to swallow it.
>
>Exactly how much power do you need?

Only enough to feed another inverter gate.

>Exactly how "clean" (free from
>other harmonics) must it be?

Preferably filthy. It's another multiplier (this time only 3X, thank
God!)

>Don't you have an amplifier in the
>circuit you're playing with anyway?

Yeah, but who needs insertion loss on top of the 8dB the filter's down
even at centre pass frequency.

>100mW should be easy with a
>single stage following the digital square wave, and a full watt is
>certainly feasible with the right design. If you were hoping for
>100mW of fifth harmonic from a single HC output, you were probably
>dreaming.

As opposed to the *nightmare* of the reality. :-)

--

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2213. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 10:42:21 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <qeti50l9j3rtuadjtf2lpbo9mds1ncj51g@4ax.com>
Source record: 27600
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Thu, 18 Mar 2004 11:33:17 +1000, Tony <tony_roe@tpg.com.au> wrote:

>On Thu, 18 Mar 2004 10:42:22 +1000, Tony <tony_roe@tpg.com.au> wrote:
>
>>Ignoring most of the previous posts in this thread (sorry - I deleted them) it
>>occurs to me that maybe the problem may be the relatively low impedance load on
>>the buffer, whose finite output impedance therefore causes some waveform
>>distortion and loss of 5th harmonic. So how about a hi-Z parallel tank coupling
>>circuit; for 17.2MHz (say 4p7 || 18uH) into a load of 100-500 ohms (say a 1k pot
>>+ 100n to Gnd, to see the effect of load variations), then into another 74AC
>>buffer?
>>
>>Tony (remove the "_" to reply by email)
>
>Actually the tank's output will be biased to half-rail, which won't necessarily
>bias the CMOS output buffer properly. May need to cap-couple to the buffer, with
>a feedback resistor so it will self-bias (another case of reading the post AFTER
>hitting "send").

There's a lot of that goes on here. :-)
I'll look into the idea, thanks.
--

The BBC: Licensed at public expense to spread lies.

2214. WTB: KWM2A Front Panel

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 15:46:01 UTC
From: Roberto IZ5FCY <iz5fcy@_MAI_SPAM_jumpy.it>
Message-ID: <Zuj6c.78748$O31.3573314@news4.tin.it>
Source record: 27602

Dear friends,
I'm looking for a KWM2A's Front Panel, new or used, original or rebuild, but
with a look "as new"!!
Many thanks in advance.
Bye de IZ5FCY Roberto - Pisa - Italy
(please remove NOSPAM from my email address)

2215. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 18:16:53 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403181016.15f3c058@posting.google.com>
Source record: 27603
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:<d2ti50hniroh6p6skmck1ahd6pkgqj0t5i@4ax.com>...

> >Exactly how much power do you need?
>
> Only enough to feed another inverter gate.

Egad, Paul! You've been wasting this much net bandwidth just to drive another HC gate?? All you need is a filter/matching circuit that steps up the voltage. This is DOG SIMPLE! See below.

> >Exactly how "clean" (free from
> >other harmonics) must it be?
>
> Preferably filthy. It's another multiplier (this time only 3X, thank
> God!)

Then you need a clean enough input that you'll get the desired output purity. "Filthy" is likely NOT the right answer and will just get you into further trouble. But fortunately, "clean" is simple, and "really clean" isn't at all difficult.

Try this: square wave output -- I don't recall your exact freq; I used 3.7MHz -- from HC gate, feeds 4.58pF capacitor (make at least that one tuneable). Other end of cap feeds 20uH inductor, Qu=200. Other end of that inductor connects to next gate input, and net 18.6pF of capacitance to ground: say 15pF cap plus 3.6pF of gate input capacitance. For DC bias, gate input to ground = 22kohms; gate input to Vcc = 47kohms. That keeps the gate in a valid logic state when there's no excitation. Assuming the gate's RF input resistance at 18MHz is at least 2.5kohms, you should get a voltage gain at the fifth harmonic of about 15dB, which will be ample to drive the gate input. The available current from the filter is low enough that the gate's input protection diodes should clamp things nicely at the rails. Be sure to use a gate that has input protection, or else add low-capacitance, fast diodes externally. Gain at the third and seventh is down 20dB or so from that. If it needs to be cleaner than that, you can add a second resonator.

The gate biasing suggested may result in an output duty cycle significantly different from 50%. If you will always have 3.7MHz drive, you can bias the input more in the center of its range, or even rearrange the circuit a bit and use a feedback resistor from output to input to set the DC bias. The gate's input impedance is then much lower, but you don't need much voltage to drive it. Don't use that

trick with a Schmitt trigger input, though.

69 turns of 36AWG (0.125mm) wire, spaced 2 wire diameters c-c, on an 0.375" former, should give you about 20uH at Qu=200 and first parallel SRF about 50MHz, but you should be able to make it more compact using something like a T-50-2 powdered iron core.

2216. How to trace a current fault.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 18:18:23 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.0000007e.003d7611@btinternet.com>
Source record: 27604

Hi,

I been beating my brains out for the last few days trying to run down a problem on a 20-year old Icom-740 transceiver with not a lot of luck. Perhaps someone here in the group has a trick or two up their sleeve to get me out of the hole I've been digging myself?

The situation is this -

The rig won't receive but transmits OK and there are no other fault indications.

The apparent cause is the regulator for the 8V receive line shutting down due to current overload (i.e. more than 100mA which is the limit of the MB3756). At present it is running at about 3.3V with around an 80mA load (lower than 100mA but the foldback circuit on the chip is operating).

All other supplies are normal; in fact the other two supplies out of the MB3756 are on the button and I have changed anyway it just in case. If I isolate the line and apply an external 8V the current goes to over 400mA in a manner that suggests there is a semiconductor junction or two in the fault path.

As these rigs are a mass of interconnections (the main board alone has 25 plugs/sockets on it), normal fault-finding procedure would be to monitor the current and yank the plugs one by one until the excess load disappears and then to have at it with a VOM. Unfortunately the system of on-board links that Icom use makes this a more difficult task than you would think. Over the last few days I've been sure I'd found the leak several times but was badly mistaken on each occasion. Of course, the fault may be an above ground supply line to supply line leak which wouldn't show up as an earth leakage path.

The tool I really need is a miniature Hall effect DC amp-clamp but there doesn't seem to be one available. In the past I've used a hp current tracer on PCB tracks but even if I had one now it wouldn't be easy to use here. However, I do have a bulky hp-1110A (2mV/mA) scope current probe and a 10526T pulser, so tomorrow I'll try that route with or without the power on.

Sorry about the windy posting friends but if anyone has any idea on ways to trace wayward current leaks, please let me know.

73 de Joe, G3LLV

2217. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 18:22:14 UTC
From: Joseph Fenn <jfenn@lava.net>
Message-ID: <c3cpcm$3vs$1@xuxa.iecc.com>
Source record: 27605
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

How in the hell can the CLOCK detector tell any difference between
the time signal from WWV or WWVH. They are both on exact same
frequecies, the time tick is identical on both !!!!
Kokomo Joe
WWVH on Kauai has a consistantly strong signal. Albeit at times
is totally off the air several times in any given month.

****
* Ham KH6JF AARS/MARS ABM6JF QCWA WW2 VET WD RADIO *
****

On Wed, 17 Mar 2004, N8KDV wrote:

>
>
> Scott Dorsey wrote:
>
> > tommyknocker <tomynokr@uucp.hell> wrote:
> > >Forget about getting an atomic clock to set in Hawaii. The signal is
> > >simply too weak. Atomic Time (who I bought my dual time clock from) says
> > >that it helps if you point the antenna (apparently they just use ferrite
> > >rod antennas-just like in a cheap transistor radio-to recieve) towards
> > >Fort Collins, which is due east of my QTH.
> >
> > Huh? WWVH in Lihue used to come in five and nine everywhere in Hawaii.
> > On AM car radios, tape recorders, sometimes even rice cookers.
> > --scott
>
> That may be the case Scott, but the 'atomic clocks' they are speaking of use
> the WWVB signal from Ft. Collins, Colorado on 60 KHz to set their time
> automatically.
>
> That signal may indeed not be propagating well enough to be of use in Hawaii.
>
> Steve
> Holland, MI
> Drake R7, R8 and R8B
>
> http://www.iserv.net/~n8kdv/dxpage.htm
>
>
>
>

2218. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 18:22:31 UTC
From: "Eric F. Richards" <efricha@dim.com>
Message-ID: <c3cpd7$454$1@xuxa.iecc.com>
Source record: 27606
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

kludge@panix.com (Scott Dorsey) wrote:

> In article <c39tgn$kt6$1@xuxa.iecc.com>,
> CA was in NJ <cainnj.cjb.net@cainnj.REVERSE_TO_REPLY__SPAMMERS_SHOT_ON_SIGHT> wrote:
> >Scott Dorsey wrote:
> >
> >>Huh? WWVH in Lihue used to come in five and nine everywhere in Hawaii.
> >>On AM car radios, tape recorders, sometimes even rice cookers.
> >
> >The topic is WWVB, the binary signal. WWVH is the voice signal, which an
> >autosetting clock will not understand.
>
> I thought WWVH also had BCD data a couple times an hour? Or has that been
> stopped along with the Omega navigation beacons?

If the signal format is *exactly* identical to WWV it has a continuous
time signal being sent as a 100 Hz tone at 1 bps. If you can't hear
it on your radio (because of "comm grade" headphone or speaker or
ears), you can use skysweeper in free demo mode and see the bits clear
as day in the waterfall display.

>
> Is there no VLF facility in Hawaii comparable to WWVB?
> --scott

--
Eric F. Richards, efricha@dim.com
"Nature abhors a vacuum tube." -- J. R. Pierce, Bell Labs, c. 1940

2219. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 19:04:07 UTC
From: exray <dontspamexray@coqui.net>
Message-ID: <105jsgejvakstf2@corp.supernews.com>
Source record: 27607
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

Eric F. Richards wrote:
> kludge@panix.com (Scott Dorsey) wrote:
>
>
>>In article <c39tgn$kt6$1@xuxa.iecc.com>,
>>CA was in NJ <cainnj.cjb.net@cainnj.REVERSE_TO_REPLY__SPAMMERS_SHOT_ON_SIGHT> wrote:
>>
>>>Scott Dorsey wrote:
>>>
>>>
>>>>Huh? WWVH in Lihue used to come in five and nine everywhere in Hawaii.
>>>>On AM car radios, tape recorders, sometimes even rice cookers.
>>>
>>>The topic is WWVB, the binary signal. WWVH is the voice signal, which an
>>>autosetting clock will not understand.
>>
>>I thought WWVH also had BCD data a couple times an hour? Or has that been
>>stopped along with the Omega navigation beacons?
>
>
> If the signal format is *exactly* identical to WWV it has a continuous
> time signal being sent as a 100 Hz tone at 1 bps. If you can't hear
> it on your radio (because of "comm grade" headphone or speaker or
> ears), you can use skysweeper in free demo mode and see the bits clear
> as day in the waterfall display.
>
Here is the WWV/WWVH time format:
http://www.boulder.nist.gov/timefreq/stations/wwvtimecode.htm

But as been mentioned before, this is a different format than what is
used by WWVB for synchronizing clocks.
http://www.boulder.nist.gov/timefreq/stations/wwvbtimecode.htm

-Bill

2220. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 19:26:35 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <sptj50lb9dtl9c986f7f52sos9b7oes90n@4ax.com>
Source record: 27608
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 18 Mar 2004 10:16:53 -0800, k7itm@aol.com (Tom Bruhns) wrote:

>Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:<d2ti50hniroh6p6skmck1ahd6pkgqj0t5i@4ax.com>...
>
>> >Exactly how much power do you need?
>>
>> Only enough to feed another inverter gate.
>
>Egad, Paul! You've been wasting this much net bandwidth just to drive
>another HC gate?? All you need is a filter/matching circuit that
>steps up the voltage. This is DOG SIMPLE! See below.

Thanks, Tom. I'll give your suggestion a try. Just one question: is
the unloaded Q of 200 you specify critical? I probably have a 20uH
factory-made inductor laying about in my parts stash but won't know
it's Q without measuring it. Need I bother?
--

The BBC: Licensed at public expense to spread lies.

2221. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 20:51:54 UTC
From: averyfineman@aol.com
Message-ID: <20040318155154.12501.00006830@mb-m04.aol.com>
Source record: 27609

In article <c3cpcm$3vs$1@xuxa.iecc.com>, Joseph Fenn <jfenn@lava.net> writes:

>How in the hell can the CLOCK detector tell any difference between
>the time signal from WWV or WWVH. They are both on exact same
>frequecies, the time tick is identical on both !!!!

Not "identical." See -

http://www.boulder.nist.gov/timefreq/stations/lform.html#timea

The "tick" sounds the same from each station but is different in
the frequency inside the burst.

Len Anderson
retired (from regular hours) electronic engineer person

2222. Re: How to trace a current fault.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 21:05:18 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <$g6$77HO8gWAFA+Q@ifwtech.co.uk>
Source record: 27611

Joe McElvenney wrote:
>Hi,
>
> I been beating my brains out for the last few days
>trying to run down a problem on a 20-year old Icom-740
>transceiver with not a lot of luck. Perhaps someone here in
>the group has a trick or two up their sleeve to get me out
>of the hole I've been digging myself?
>
> The situation is this -
>
> The rig won't receive but transmits OK and there are no
>other fault indications.
>
> The apparent cause is the regulator for the 8V receive
>line shutting down due to current overload (i.e. more than
>100mA which is the limit of the MB3756). At present it is
>running at about 3.3V with around an 80mA load (lower than
>100mA but the foldback circuit on the chip is operating).
>
> All other supplies are normal; in fact the other two
>supplies out of the MB3756 are on the button and I have
>changed anyway it just in case. If I isolate the line and
>apply an external 8V the current goes to over 400mA in a
>manner that suggests there is a semiconductor junction or
>two in the fault path.
>
> As these rigs are a mass of interconnections (the main
>board alone has 25 plugs/sockets on it), normal fault-
>finding procedure would be to monitor the current and yank
>the plugs one by one until the excess load disappears and
>then to have at it with a VOM. Unfortunately the system of
>on-board links that Icom use makes this a more difficult
>task than you would think. Over the last few days I've been
>sure I'd found the leak several times but was badly
>mistaken on each occasion. Of course, the fault may be an
>above ground supply line to supply line leak which wouldn't
>show up as an earth leakage path.
>
> The tool I really need is a miniature Hall effect DC
>amp-clamp but there doesn't seem to be one available. In
>the past I've used a hp current tracer on PCB tracks but
>even if I had one now it wouldn't be easy to use here.
>However, I do have a bulky hp-1110A (2mV/mA) scope current

>probe and a 10526T pulser, so tomorrow I'll try that route
>with or without the power on.
>
> Sorry about the windy posting friends but if anyone has
>any idea on ways to trace wayward current leaks, please let
>me know.

I had a similar problem with a shorted supply rail in an IC-746.

Since it was more accurately a *near* short, and the voltage regulator was pushing out quite a large current, there were actually several millivolts all along that rail. By using the DVM on its very lowest range, and taking the least significant digits seriously, it proved possible to trace the voltage gradient downward to the short.

The fault is worth mentioning too. It was one of those Icom ribbon jumpers, that I had inserted slightly off-centre in its slot. The surprising thing was that the transceiver had worked OK for about a month... but all that time, the ribbon had been creeping slowly sideways... until finally it had moved far enough to cause a short.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

2223. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 21:43:10 UTC
From: Richard Heindel <rheindel@neo.rr.com>
Message-ID: <OJo6c.28627$8G2.5176@fe3.columbus.rr.com>
Source record: 27610

Should be http://www.boulder.nist.gov/timefreq/stations/iform.html#timea, not lform..

Richard WB8KRN

"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040318155154.12501.00006830@mb-m04.aol.com...
> In article <c3cpcm$3vs$1@xuxa.iecc.com>, Joseph Fenn <jfenn@lava.net> writes:
>
> >How in the hell can the CLOCK detector tell any difference between
> >the time signal from WWV or WWVH. They are both on exact same
> >frequecies, the time tick is identical on both !!!!
>
> Not "identical." See -
>
> http://www.boulder.nist.gov/timefreq/stations/lform.html#timea
>
> The "tick" sounds the same from each station but is different in
> the frequency inside the burst.
>
> Len Anderson
> retired (from regular hours) electronic engineer person
>
>

2224. Re: Blowing NE602s.Why?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 22:14:11 UTC
From: Bob Liesenfeld <wb0poq@visi.com>
Message-ID: <405A1F33.FD7F72BA@visi.com>
Source record: 27612

Bill Meara wrote:

>
> What do guys think? Is this a likely suspect? Anyone know of other causes
> for this kind of 602 carnage? Stop me before I kill again!

Hmmmmm.....don't know about the xfmr idea, but what supply voltage are you applying to the chip? I was faced with a similar situation once till I realized I was feeding it 12VDC when it's max rating is 9VDC.

Good luck.

Bob WB0POQ

2225. Wanted: Manual for Kenwood TM-321A

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 22:16:57 UTC
From: Norm VE3CZI <ve3czi@arrl.net>
Message-ID: <9fp6c.7916$n37.823024@read2.cgocable.net>
Source record: 27613
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.swap

Am looking for an Operations / Service Manual for the Kenwood TM-321A 220
Mhz Mobile I recently acquired.
Could also use a Mic & Mtg Brkt.
If you can help, please contact me.
Tnx...Norm VE3CZI

2226. Re: How to trace a current fault.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 22:25:59 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <105k8fu11dtq54e@corp.supernews.com>
Source record: 27614

You might be able to spot it by frosting each board with freeze spray then applying power to see what's getting hot. That won't work if the short's a really good one, and of course parts that normally dissipate a lot will show up too. But if it's a good short, a hot PCB trace might show up to reveal the location of the problem.

Roy Lewallen, W7EL

2227. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-18 23:28:15 UTC
From: "Eric F. Richards" <efricha@dim.com>
Message-ID: <ks9k50lg0a9lllbkipbc8i7d13dokt8kmp@4ax.com>
Source record: 27615
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

exray <dontspamexray@coqui.net> wrote:

> Eric F. Richards wrote:
> > kludge@panix.com (Scott Dorsey) wrote:
> >
> >
> >>In article <c39tgn$kt6$1@xuxa.iecc.com>,
> >>CA was in NJ <cainnj.cjb.net@cainnj.REVERSE_TO_REPLY__SPAMMERS_SHOT_ON_SIGHT> wrote:
> >>
> >>>Scott Dorsey wrote:
> >>>
> >>>
> >>>>Huh? WWVH in Lihue used to come in five and nine everywhere in Hawaii.
> >>>>On AM car radios, tape recorders, sometimes even rice cookers.
> >>>
> >>>The topic is WWVB, the binary signal. WWVH is the voice signal, which an
> >>>autosetting clock will not understand.
> >>
> >>I thought WWVH also had BCD data a couple times an hour? Or has that been
> >>stopped along with the Omega navigation beacons?
> >
> >
> > If the signal format is *exactly* identical to WWV it has a continuous
> > time signal being sent as a 100 Hz tone at 1 bps. If you can't hear
> > it on your radio (because of "comm grade" headphone or speaker or
> > ears), you can use skysweeper in free demo mode and see the bits clear
> > as day in the waterfall display.
> >
> Here is the WWV/WWVH time format:
> http://www.boulder.nist.gov/timefreq/stations/wwvtimecode.htm
>
> But as been mentioned before, this is a different format than what is
> used by WWVB for synchronizing clocks.

But that's not what I said. WWV has its own 1 bps digital signal,
every minute. If, as you say, WWVH has the same format, presumably it
also has the same 100 Hz digital format as WWV (no suffix).

> http://www.boulder.nist.gov/timefreq/stations/wwvbtimecode.htm
>
> -Bill

--
Eric F. Richards

efricha@dim.com
"The weird part is that I can feel productive even when I'm doomed."
- Dilbert

2228. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 00:01:29 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403181601.4bd8faa4@posting.google.com>
Source record: 27616
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

BTW, I just built the suggested circuit, on one of those old white plug-boards which is NOT a great idea at RF. It worked fine. Easy to tune just with a scope. Performance was as I expected: full -0.6V to +5.6V or so swing at 18MHz at the input of the "18MHz" gate, and an 18MHz rectangular wave at its output. 74HC04 hex inverter; 3 stages as a simple RC oscillator to generate the 3.7MHz input. Duty cycle of that 3.7MHz was fairly close to 50%, but definitely not right on. The performance tells me that the 'HC04 really does have a fairly high input impedance at 18MHz, and requires under a milliwatt to drive--perhaps well under. There's AMPLE fifth harmonic power in that 3.7MHz square wave out of an 'HC04, and you just need to filter and do whatever impedance transformation is appropriate to get the desired result.

Incomplete filtering of the non-fifth harmonics causes variation in the output pulse width (in a cycle that repeats every cycle of the 3.7MHz input), and frankly if I wanted a pretty pure 15th harmonic at the final output, I'd use a bit better filter to get a cleaner fifth. But try the simple one first, to convince yourself that it's possible. It's a pretty "hack" circuit, in that I just made educated guesses at the 'HC04 input and output impedances at 18MHz, and at a reasonable load resistance for an 'HC04. It could probably be optimized a bit, but it DOES work as described.

Inductor Qu: The loaded Q of the circuit I described depends on the output impedance of an 'HC04 inverter, and the input impedance of the same with the bias resistors included. It should be running somewhere around 20-25, I believe. That determines how well the third and seventh are rejected. The unloaded Q of the inductor determines how much fifth-harmonic power is lost in the filter. You can stand some loss, but you don't want to waste too much. If the loaded Q is 25 and the inductor has an unloaded Q of 50, then you will waste half the power in the inductor. That probably would still work, but it would be better if the Q was more like 100, as a minimum. Based on what I've been hearing so far, I'm not very confident that you will be able to tell the Qu of your junque-box inductors, especially since you need to know it at the operating frequency. Qu of a lot of manufactured inductors is quite low, especially at non-optimal frequencies. If you picked a ~20uH inductor designed for use in a switching power supply at 100kHz, it could well be awful at 18MHz. It only takes a couple minutes to wind up an air-core one, so that's what I'd suggest. The one I used was 49 turns on a T-94-2 powdered iron core.

Cheers,
Tom

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:<sptj50lb9dtl9c986f7f52sos9b7oes90n@4ax.com>...
> On 18 Mar 2004 10:16:53 -0800, k7itm@aol.com (Tom Bruhns) wrote:
>
> >Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:<d2ti50hniroh6p6skmck1ahd6pkgqj0t5i@4ax.com>...
> >
> >> >Exactly how much power do you need?
> >>
> >> Only enough to feed another inverter gate.
> >
> >Egad, Paul! You've been wasting this much net bandwidth just to drive
> >another HC gate?? All you need is a filter/matching circuit that
> >steps up the voltage. This is DOG SIMPLE! See below.
>
> Thanks, Tom. I'll give your suggestion a try. Just one question: is
> the unloaded Q of 200 you specify critical? I probably have a 20uH
> factory-made inductor laying about in my parts stash but won't know
> it's Q without measuring it. Need I bother?

2229. Re: How to trace a current fault.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 00:09:59 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403181609.2abda3f7@posting.google.com>
Source record: 27617

A common way to trace problems like this is to measure voltage drop
along the power supply traces and wires. They do have resistance, and
they do show an I*R voltage drop. You need a fairly sensitive meter
range to see the effect, but it's a very useful technique. Clip one
side of the meter to the regulator output, and start probing places
that it's supposed to go. Start with things connected close to the
regulator, and move out...when the voltage drop stops increasing,
you've passed the culprit.

Another way that's a bit more extreme is to connect another supply in
parallel, with current limit set to something that won't burn up PC
traces but will make the problem easier to find. Then you can trace
the current even by looking at (or feeling) temperature rise in the
traces! ;-) Or--look for the magic smoke escaping (but I suppose
something has already lost its magic smoke anyway).

Cheers,
Tom

Joe McElvenney <ximac@btinternet.com> wrote in message
news:<VA.0000007e.003d7611@btinternet.com>...
> Hi,
>
> I been beating my brains out for the last few days
> trying to run down a problem on a 20-year old Icom-740
> transceiver with not a lot of luck. Perhaps someone here in
> the group has a trick or two up their sleeve to get me out
> of the hole I've been digging myself?
>
> The situation is this -
>
> The rig won't receive but transmits OK and there are no
> other fault indications.
>
> The apparent cause is the regulator for the 8V receive
> line shutting down due to current overload (i.e. more than
> 100mA which is the limit of the MB3756). At present it is
> running at about 3.3V with around an 80mA load (lower than
> 100mA but the foldback circuit on the chip is operating).
>
> All other supplies are normal; in fact the other two
> supplies out of the MB3756 are on the button and I have
> changed anyway it just in case. If I isolate the line and
> apply an external 8V the current goes to over 400mA in a
> manner that suggests there is a semiconductor junction or

> two in the fault path.
>
> As these rigs are a mass of interconnections (the main
> board alone has 25 plugs/sockets on it), normal fault-
> finding procedure would be to monitor the current and yank
> the plugs one by one until the excess load disappears and
> then to have at it with a VOM. Unfortunately the system of
> on-board links that Icom use makes this a more difficult
> task than you would think. Over the last few days I've been
> sure I'd found the leak several times but was badly
> mistaken on each occasion. Of course, the fault may be an
> above ground supply line to supply line leak which wouldn't
> show up as an earth leakage path.
>
> The tool I really need is a miniature Hall effect DC
> amp-clamp but there doesn't seem to be one available. In
> the past I've used a hp current tracer on PCB tracks but
> even if I had one now it wouldn't be easy to use here.
> However, I do have a bulky hp-1110A (2mV/mA) scope current
> probe and a 10526T pulser, so tomorrow I'll try that route
> with or without the power on.
>
> Sorry about the windy posting friends but if anyone has
> any idea on ways to trace wayward current leaks, please let
> me know.
>
>
> 73 de Joe, G3LLV

2230. Centralab 850 Capacitors

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 00:40:50 UTC
From: "Jim L." <jfladd@flash.net>
Message-ID: <mkr6c.26938$hL3.18111@newssvr31.news.prodigy.com>
Source record: 27618

Will someone kindly tell me where I can buy some 500pf caps of this type.?
The distributors I have checked do not stock them. Tnx, Jim

2231. Re: 455 KC oscillator = CB jamming device

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 01:33:15 UTC
From: elbowjuice <elbowjuice@pubnotalot.com>
Message-ID: <c3diko$47j$1@newsg2.svr.pol.co.uk>
Source record: 27619

if your proper naughty, and want to cause a big fuss.
Make a tin box containing a SPTX, per mezzo dell'interruttore del transistore, un rel&#65533; e un cap/coil, ha sintonizzato il circuito, per la fascia in questione, lo eccita con un rivelatore semplice del diodo, raccogliendo l'alimentazione per mezzo di un sensore del dipolo del legare, per la ricezione, orizzontale ed indicato verso l'antenna dei CB. Dipolo de flaut&#65533;n e sottile verticale del legare, arrotolata con del molto del weenie de Renda un del inferiore del parte del la en sotto del su por el trasmettere, dallo SPTX. El eventualmente de Ora, che il rivelatore del diodo, buon de Volta del ogni del un del ottiene estall&#65533; los CBES del dai del rf del della,TX, esso cambier&#65533; la rf a CC, accendere un interruttore del transistore, aprire una batteria + un contatto da 9 volt, ha messo la corrente in e carica il circuito sintonizzato, nello scarico della bobina la protezione, comincia oscillare, accendente e del rel&#65533; si mette in contatto con, questo che oscilla dovrebbe fare una scintilla sui contatti, and start a horrible buzzing EVERYWHERE. On radio, all radio, TV to maybe? For quite a way. This won't make you popular, Its more illegal than any other kind of Wireless/Radio transmitter! Naughty old fashioned, even dirty, but it will jam, and jam, and jam, might even get him (or you) (or me if you tell em who give you the idea) a visit, from the Radio policemen's.

2232. Re: Centralab 850 Capacitors

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 02:01:42 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <aws6c.31847$Pa7.831637@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27620

"Jim L." <jfladd@flash.net> wrote in message
news:mkr6c.26938$hL3.18111@newssvr31.news.prodigy.com...
> Will someone kindly tell me where I can buy some 500pf caps of this
type.?
> The distributors I have checked do not stock them. Tnx, Jim

Maybe you can wangle a couple of samples from the manufacturer.
http://www.highenergycorp.com/ceramic/ht50.html

This is supposed to be the replacement for the 850 series.

According to this page http://www.highenergycorp.com/ceramic/ceramic.html
they will sell in small quantities. It lists a toll-free number (for the
U.S., at least) and a link to a request form.

73,

"PM"

2233. Re: Polystyrene capacitors for filter networks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 02:17:28 UTC
From: Terry Given <the_domes@xtra.co.nz>
Message-ID: <Vea6c.8572$rw6.172663@news.xtra.co.nz>
Source record: 27745
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:hknh509b1vrg6j33c8apcii0eeenirr9il@4ax.com...
> On Wed, 17 Mar 2004 15:45:34 -0000, "Emoneg" <Emoneg@nothere.com>
> wrote:
>
> >
> >"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
> >news:6afg50lhac3arueiodioejthtojlr3tten@4ax.com...
> >| Hi,
> >|
> >| They look worryingly inductive on visual inspection (there are metal
> >| foils rolled up in thar by the look of it.) And yet the CPC catalogue
> >| says that their properties make them ideal for use in filters. Has
> >| anyone any remarks (favourable or otherwise) to make about the use of
> >| this type of cap in filter apps?
>
> >Silly boy......
>
> Sorry. I'll try not to ask such *stupid* questions again.

no stupid questions, unless you ignored the answers last time.....

remember, things you know are easy. Its the things you dont know that are
hard.

2234. Re: Polystyrene capacitors for filter networks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 02:35:03 UTC
From: qrk <mark@reson.DELETE.ME.com>
Message-ID: <ltmk5099q6n7vngkqks7nh37ce6peft1po@4ax.com>
Source record: 27621

On Thu, 18 Mar 2004 05:27:09 GMT, Gregg <nospam@unknown.org> wrote:

>Behold, qrk signalled from keyed 4-1000A filament:
>
>> On Wed, 17 Mar 2004 12:03:06 +0000, Paul Burridge
>> <pb@osiris1.notthisbit.co.uk> wrote:
>>
>>>Hi,
>>>
>>>They look worryingly inductive on visual inspection (there are metal
>>>foils rolled up in thar by the look of it.) And yet the CPC catalogue
>>>says that their properties make them ideal for use in filters. Has
>>>anyone any remarks (favourable or otherwise) to make about the use of
>>>this type of cap in filter apps?
>>>
>>>p.
>>
>> They're great for LC filters. If you choose your ferrite right, you can
>> have a pretty stable filter over temperature.
>
>Air-core my good man, air-core ;-)

Try air-core with 500+ uH. Then pack em in to a small area. That's
what I get for being a low-freq weenie.

2235. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 04:13:14 UTC
From: averyfineman@aol.com
Message-ID: <20040318231314.11022.00004781@mb-m14.aol.com>
Source record: 27622

In article <OJo6c.28627$8G2.5176@fe3.columbus.rr.com>, "Richard Heindel"
<rheindel@neo.rr.com> writes:

>Should be http://www.boulder.nist.gov/timefreq/stations/iform.html#timea, not
>lform..
>
>Richard WB8KRN

Yes. Thanks for the correction.

Len Anderson
retired (from regular hours) electronic engineer person

...and only human who can make an occasional typo... :-)

2236. Re: Wanted: Manual for Kenwood TM-321A

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 05:26:56 UTC
From: bunnydawg <r.heenan@sympatico.ca>
Message-ID: <jzv6c.27559$E71.1784512@news20.bellglobal.com>
Source record: 27623
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.swap

Norm try www.mods.dk
Scroll way down.
Robert
VE3 something or other

"Norm VE3CZI" <ve3czi@ arrl.net> wrote in message
news:9fp6c.7916$n37.823024@read2.cgocable.net...
> Am looking for an Operations / Service Manual for the Kenwood TM-321A 220
> Mhz Mobile I recently acquired.
> Could also use a Mic & Mtg Brkt.
> If you can help, please contact me.
> Tnx...Norm VE3CZI
>
>

2237. Re: Wanted: Manual for Kenwood TM-321A

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 05:28:05 UTC
From: bunnydawg <r.heenan@sympatico.ca>
Message-ID: <rAv6c.27576$E71.1785141@news20.bellglobal.com>
Source record: 27624
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.swap

Sorry that appears to be just the schematic. Perhaps someone else can
assist you plus i'll look for one.
Robert
VE3 something or other

"Norm VE3CZI" <ve3czi@ arrl.net> wrote in message
news:9fp6c.7916$n37.823024@read2.cgocable.net...
> Am looking for an Operations / Service Manual for the Kenwood TM-321A 220
> Mhz Mobile I recently acquired.
> Could also use a Mic & Mtg Brkt.
> If you can help, please contact me.
> Tnx...Norm VE3CZI
>
>

2238. Re: Wanted: Manual for Kenwood TM-321A

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 05:40:51 UTC
From: bunnydawg <r.heenan@sympatico.ca>
Message-ID: <NMv6c.27753$E71.1790564@news20.bellglobal.com>
Source record: 27625
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.swap

Have a look at this page as well for mods to that radio. Can't find a
manual offhand but i'm sure there is one available somewhere online
http://members.fortunecity.com/xe1bef/kenwood-mod.htm
Robert
VE3 something or other

"Norm VE3CZI" <ve3czi@ arrl.net> wrote in message
news:9fp6c.7916$n37.823024@read2.cgocable.net...
> Am looking for an Operations / Service Manual for the Kenwood TM-321A 220
> Mhz Mobile I recently acquired.
> Could also use a Mic & Mtg Brkt.
> If you can help, please contact me.
> Tnx...Norm VE3CZI
>
>

2239. Re: Blowing NE602s.Why?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 06:29:00 UTC
From: n2cqr@clix.pt
Message-ID: <97f305da.0403182229.2fd4c934@posting.google.com>
Source record: 27626

Bob: Thanks, but I don't think its that simple. I have a zener diode
regulating the supply voltage, keeping it at around 6 volts. 73 Bill

Bob Liesenfeld <wb0poq@visi.com> wrote in message news:<405A1F33.FD7F72BA@visi.com>...
> Bill Meara wrote:
>
> >
> > What do guys think? Is this a likely suspect? Anyone know of other causes
> > for this kind of 602 carnage? Stop me before I kill again!
>
> Hmmmmm.....don't know about the xfmr idea, but what supply voltage are you
> applying to the chip? I was faced with a similar situation once till I
> realized I was feeding it 12VDC when it's max rating is 9VDC.
>
> Good luck.
>
> Bob WB0POQ

2240. Re: Polystyrene capacitors for filter networks?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 06:43:14 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <6Ew6c.253058$Hy3.154197@edtnps89>
Source record: 27627

Behold, qrk signalled from keyed 4-1000A filament:

>>Air-core my good man, air-core ;-)
>
> Try air-core with 500+ uH. Then pack em in to a small area. That's what
> I get for being a low-freq weenie.

Ah! I too am a LowFER - Made a 6Hy coil in about 4 sq. inches on my
winding jig. No current capacity but a great 20-76KHz preselect for the
vacuum tube RX :-)

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

2241. Re: MFJ balanced line tuner efficiency?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 12:20:49 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <bufk50tho16jbdghl2lbctm8d13rdtbcs9@4ax.com>
Source record: 27628

On Mon, 15 Mar 2004 15:41:23 +0100, "A.N. Onym"
<Alxendr_Nicolaievitj_Onym@nowhere.tk> wrote:

>Er...
>Well. After a couple of Years, the resistance of the coil roller contacts
>reaches
>"irritating" high values, destroying coil Q.
>Keep it clean! (tomato ketchup is a good cleaner!)
>
>
>
>Reg Edwards wrote:
>
>> Ian,
>>
>> Quite rightly, you blame the melt down of the tuner not to the tuner's
>> intrinsic inefficiency (which none of them have) but to the abuse inflicted
>> on it by the user with the help of a transmitter.
>>
>> All tuners are high-efficiency devices when operated within their ratings.
>> They can't help being otherwise. They have only a length of wire in the form
>> of a coil and a condenser.
>> ---
>> Reg.

Reg is right, because those roller coils are particluarly popular on
the opposite side of the atlantic ocean. Those rollers are usually
only optimum on the lowest frequencies and efficiency decreases when
you use a smaller part of the coil

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

2242. Re: Measuring small inductances

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 12:20:50 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <j9hk509ooo069b1f6jlhn3414jncmug5t6@4ax.com>
Source record: 27629
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 15 Mar 2004 10:46:53 +0000, Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>Hi all,
>
>I've got quite a huge stash of inductors in my parts bin. The colour
>codes don't always seem to relate to the values I've been able to
>measure, with my multi-function DVM, however, and I can't accurately
>measure any inductor < about 10uH. Is there a circuit anywhere that
>would enable me to get a reasonably accurate idea of the values I've
>got down to say 100nH or thereabouts?
>
>Thanks,
>
>p.
Another idea which not seems to be mentioned, but won't let you
measure down to nH, is to put an accurate 10ï¿½H coil in series with the
meter, and you should at least measure with reasonable accuracy down
to 1ï¿½H or lower. You may buy ready made coils down to below 100nH
which can be used to check the calibration.

My over 50 years old Radiometer multimeter uses this technique and
measures well down to 20nH. I made my own meter with 18MHz oscillator
to meassure 0.01-1uH

LA8AK

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

2243. Re: Centralab 850 Capacitors

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 16:18:56 UTC
From: "Jim L." <jfladd@flash.net>
Message-ID: <Q3F6c.37234$Fr5.22440@newssvr16.news.prodigy.com>
Source record: 27630

Thanks,Paul. Good info. Jim.
Paul_Morphy <nopaul_morphy2@coolgoose.com> wrote in message
news:aws6c.31847$Pa7.831637@bgtnsc05-news.ops.worldnet.att.net...
>
> "Jim L." <jfladd@flash.net> wrote in message
> news:mkr6c.26938$hL3.18111@newssvr31.news.prodigy.com...
> > Will someone kindly tell me where I can buy some 500pf caps of this
> type.?
> > The distributors I have checked do not stock them. Tnx, Jim
>
> Maybe you can wangle a couple of samples from the manufacturer.
> http://www.highenergycorp.com/ceramic/ht50.html
>
> This is supposed to be the replacement for the 850 series.
>
> According to this page http://www.highenergycorp.com/ceramic/ceramic.html
> they will sell in small quantities. It lists a toll-free number (for the
> U.S., at least) and a link to a request form.
>
> 73,
>
> "PM"
>
>

2244. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 16:27:46 UTC
From: Bob McConnell <rmcconne@NOSPAM.lightlink.com>
Message-ID: <c3f722iij1@xuxa.iecc.com>
Source record: 27633
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

On 17 Mar 2004 16:14:24 GMT, "Dave VanHorn" <dvanhorn@cedar.net>
wrote:

>
>"Scott Dorsey" <kludge@panix.com> wrote in message
>news:c37iek$g15$1@xuxa.iecc.com...
>> tommyknocker <tomynokr@uucp.hell> wrote:
>> >Forget about getting an atomic clock to set in Hawaii. The signal is
>> >simply too weak. Atomic Time (who I bought my dual time clock from) says
>> >that it helps if you point the antenna (apparently they just use ferrite
>> >rod antennas-just like in a cheap transistor radio-to recieve) towards
>> >Fort Collins, which is due east of my QTH.
>>
>> Huh? WWVH in Lihue used to come in five and nine everywhere in Hawaii.
>> On AM car radios, tape recorders, sometimes even rice cookers.
>> --scott
>
>I heard the LuaLuaLei transmitter a lot, but not WWVH, when I lived there.
>500kW or 1MW IIRC, somewhere around 24kHz.
>

That was a Navy transmitter, not NIST. I was stationed at Lualualei
for almost two years in the mid '70s. I wonder if it is still on the
air now that they have switched most of their circuits to satellite.

Bob McConnell, Ex-RM2 USN
N2SPP

2245. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 16:28:14 UTC
From: N8KDV <n8kdv@nospam.iserv.net>
Message-ID: <c3f72uino1@xuxa.iecc.com>
Source record: 27631
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

Joseph Fenn wrote:

> How in the hell can the CLOCK detector tell any difference between
> the time signal from WWV or WWVH. They are both on exact same
> frequecies, the time tick is identical on both !!!!

Once again, the clock the individual wants plans for uses the signal from WWVB in
Ft. Collins, Colorado on 60 kHz.

2246. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 16:28:41 UTC
From: Bob <newsgroups@furtawKN0WSPAMremoval.com>
Message-ID: <c3f73piqn1@xuxa.iecc.com>
Source record: 27632
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc, rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

Maybe this will help with understanding:
http://www.boulder.nist.gov/timefreq/general/pdf/1383.pdf
Bob
"Joseph Fenn" <jfenn@lava.net> wrote in message
news:c3cpcm$3vs$1@xuxa.iecc.com...
> How in the hell can the CLOCK detector tell any difference between
> the time signal from WWV or WWVH. They are both on exact same
> frequecies, the time tick is identical on both !!!!
> Kokomo Joe
> WWVH on Kauai has a consistantly strong signal. Albeit at times
> is totally off the air several times in any given month.
>
>
> **
> * Ham KH6JF AARS/MARS ABM6JF QCWA WW2 VET WD RADIO *
> **
>
>
> On Wed, 17 Mar 2004, N8KDV wrote:
>
> >
> >
> > Scott Dorsey wrote:
> >
> > > tommyknocker <tomynokr@uucp.hell> wrote:
> > > >Forget about getting an atomic clock to set in Hawaii. The signal is
> > > >simply too weak. Atomic Time (who I bought my dual time clock from)
says
> > > >that it helps if you point the antenna (apparently they just use
ferrite
> > > >rod antennas-just like in a cheap transistor radio-to recieve)
towards
> > > >Fort Collins, which is due east of my QTH.
> > >
> > > Huh? WWVH in Lihue used to come in five and nine everywhere in
Hawaii.
> > > On AM car radios, tape recorders, sometimes even rice cookers.
> > > --scott
> >
> > That may be the case Scott, but the 'atomic clocks' they are speaking of
use
> > the WWVB signal from Ft. Collins, Colorado on 60 KHz to set their time

> > automatically.
> >
> > That signal may indeed not be propagating well enough to be of use in
Hawaii.
> >
> > Steve
> > Holland, MI
> > Drake R7, R8 and R8B
> >
> > http://www.iserv.net/~n8kdv/dxpage.htm
> >
> >
> >
> >
>

2247. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 16:44:24 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <bd8m50lr0psvso0du7rnm2lr2m57p7lnv0@4ax.com>
Source record: 27634
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 18 Mar 2004 16:01:29 -0800, k7itm@aol.com (Tom Bruhns) wrote:

>BTW, I just built the suggested circuit, on one of those old white
>plug-boards which is NOT a great idea at RF. It worked fine. Easy to
>tune just with a scope. Performance was as I expected: full -0.6V to
>+5.6V or so swing at 18MHz at the input of the "18MHz" gate, and an
>18MHz rectangular wave at its output. 74HC04 hex inverter; 3 stages
>as a simple RC oscillator to generate the 3.7MHz input. Duty cycle of
>that 3.7MHz was fairly close to 50%, but definitely not right on. The
>performance tells me that the 'HC04 really does have a fairly high
>input impedance at 18MHz, and requires under a milliwatt to
>drive--perhaps well under. There's AMPLE fifth harmonic power in that
>3.7MHz square wave out of an 'HC04, and you just need to filter and do
>whatever impedance transformation is appropriate to get the desired
>result.
>

Hi Tom,
Thanks for taking the trouble to cobble together this circuit. I've done likewise here but am sorry to report that all I'm getting is the ubiquitous 3rd harmonic on 10.whatever Mhz as usual, regardless of what the variable cap's tuned to. I made the cap to ground variable as well, but no dice.:-(. The output looks as if it may well have some higher frequency content and could be filtered to recover a useable level of 5th., however. I don't think there's a quick and dirty way to achieve this - for you perhaps with your longer experience, but sadly not at this end. Looks like I'm going to just have to swallow hard and build some proper filtering and use a few more amplifying stages: no big deal but I just wish I'd known it from the outset as it would have saved me a lot of time and trouble. I don't think you can get away with short cuts at RF, especially if you're a non-expert.

--

The BBC: Licensed at public expense to spread lies.

2248. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 17:46:43 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <7mG6c.41425$_w.610261@attbi_s53>
Source record: 27635
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

I don't think you can get away
> with short cuts at RF, especially if you're a non-expert.
>
3 MHz is practically DC. Why don't you ask one of your friends at the BBC to
build it for you.

W4ZCB

2249. Re: How to trace a current fault.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 18:31:44 UTC
From: Bruce in Alaska <bruceg@btpost.net>
Message-ID: <bruceg-162DD3.09314519032004@netnews.worldnet.att.net>
Source record: 27636

In article <VA.0000007e.003d7611@btinternet.com>,
Joe McElvenney <ximac@btinternet.com> wrote:

> Hi,
>
> I been beating my brains out for the last few days
> trying to run down a problem on a 20-year old Icom-740
> transceiver with not a lot of luck. Perhaps someone here in
> the group has a trick or two up their sleeve to get me out
> of the hole I've been digging myself?
>
> The situation is this -
>

snipped for brevity

>
> Sorry about the windy posting friends but if anyone has
> any idea on ways to trace wayward current leaks, please let
> me know.
>
>
> 73 de Joe, G3LLV
>
>

Look for a shorted bypass Cap along the supply rail. These
small tantilum caps are notorious for shorting out, and giving
your symptoms. Just follow the rail on the schematic and isolate
each board one at a time untill you isolate which board is drawing
down the supply. Then look for the bypass caps on that board, for
any discolor or sign of excess heating.

Bruce in alaska
--
add a <2> before @

2250. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 19:40:01 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <onim50tuhb1b3vrbrgq6aj67o6pi9b7afa@4ax.com>
Source record: 27637
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Fri, 19 Mar 2004 17:46:43 GMT, "Harold E. Johnson"
<W4ZCB@mchsi.com> wrote:

>
> I don't think you can get away
>> with short cuts at RF, especially if you're a non-expert.
>>
>3 MHz is practically DC. Why don't you ask one of your friends at the BBC to
>build it for you.

I was told 40Mhz is "practically DC" too. I guess it depends on where
you're coming from.
Actually I've dumped the factory inductor as suggested by Tom and
wound-up a large, air core job on 15mm plastic water pipe. It's made
a big difference. I'm happy to report I've now got the 5th! Could be a
little cleaner but who cares? Tom made a big deal out of the
importance of high-Q so it was the obvious thing to try. Fortunately,
it's worked. God knows how I'm going to squeeze this monster coil onto
the board, though! :-|
Can I infer from this experience that SMD inductors of over a few uH
are a waste of time?
--

The BBC: Licensed at public expense to spread lies.

2251. Schematic for Downconverter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 20:21:18 UTC
From: haf47@juno.com
Message-ID: <f03bf94f.0403191221.2db2b2e7@posting.google.com>
Source record: 27638

Hello and thanks for reading this post.

I am seeking a schematic for a downconverter for 1691 mhz for the purpose of receiving weather sat info.

One would think there would be masses of this type of info, but I can't seem to find it.

Any related website info appreciated as well.

Thanks for any possible help.

73 de WA2AFD

2252. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 21:16:17 UTC
From: tdonaly@aol.com
Message-ID: <20040319161617.25951.00000023@mb-m23.aol.com>
Source record: 27639

Harold E. Johnson wrote,
>
>
> I don't think you can get away
>> with short cuts at RF, especially if you're a non-expert.
>>
>3 MHz is practically DC. Why don't you ask one of your friends at the BBC to
>build it for you.
>
>W4ZCB
>

The BBC couldn't do it unless all the leads were bent to the right.
73,
Tom Donaly, KA6RUH

2253. Help...IF schematic for HF281 Collins

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 22:26:25 UTC
From: Mario Bros <mia_idea@hotmail.com>
Message-ID: <lsK6c.75296$z23.3169808@news3.tin.it>
Source record: 27640

I need IF 455 Khz schematic for HF281 Collins

Can anyone help with a copy?

Many tanks.

IK6GQC Rocco

2254. Re: Schematic for Downconverter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 23:03:44 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <k%K6c.54687$H44.999584@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27641

"Howard" <haf47@juno.com> wrote in message
news:f03bf94f.0403191221.2db2b2e7@posting.google.com...
> Hello and thanks for reading this post.
>
> I am seeking a schematic for a downconverter for 1691 mhz for the
> purpose of receiving weather sat info.

You're probably better off using stripline techniques, and for that you could scale a 1296 converter design. There aren't a lot of plans around for those anymore, either, because most people build a kit, and most of those are transverters. There may be an index of articles from back issues of Ham Radio. There are better active devices available than during the heyday of that magazine, but the design techniques haven't changed a lot. The picture at the bottom of this page http://www.ussc.com/~uarc/utah_atv/ka7oei_a.html shows an example stripline 1296 receive converter. As your antenna will be pointing skyward you may not need the bandpass filtering shown in the lower-right corner of the board.

You might find a used 1296 converter you could hack, or some help in building what you need, from the friendly hams at the Rochester VHF Group down the road from you. Down East Microwave (downeastmicrowave.com) has low-noise preamps for 1691, but no converters.

According to this site: http://daltron.com.pg/~nq/1691.htm, a good antenna and preamp will work with even a wideband communications receiver. That might be an easier route.

73,

"PM"

2255. Re: How to trace a current fault.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-19 23:08:23 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.00000080.00a58a51@btinternet.com>
Source record: 27642

Hi again,

Thank you for your useful comments which were all duly noted. However I have been able to clear the problem after a deal of head-scratching. It became likely that the leak was between supply lines and not simply to ground when the PA cooling fan started-up on receive.

The fault turned out to be a s/c between the tops of two zero-ohm resistors (links) on the IF board just a little north-east of the speaker plug. As I was the last person to plug and unplug that particular lead, I guess that I must be the guilty party.

Thanks again - Joe

2256. TEK 465 and Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 02:47:13 UTC
From: Jerry Koniecki <NOspam@my.mailbox>
Message-ID: <405BB05A.F3483ED4@my.mailbox>
Source record: 27643
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

Frank Miles wrote:
>
> In article <MPG.1a79a982cc75a507989c17@192.168.42.131>,
> Dr. Anton.T. Squeegee <SpammersArePondScum@dev.null> wrote:
> >In article <100u2kvskpbroc8@corp.supernews.com>, wd5jfr@oklahoma.net
> >says...
> > >
> > > <snippety>
> > >
> > >> from my personal stuff purchased new. One example is a MGA Mitsubishi rear
> > >> projection TV that operated flawlessly for nearly 20 years of daily use.
> > >> Most of my test equipment comes from hamfests and is surplus after becoming
> > >> obsolete and non-operative in less than 20 years. That leads me to wonder
> > >> what the real story is behind tantalum capacitors. What do the experts have
> > >> to say?
> > >
> > > The ONLY problems I've ever had with tantalums are where:
> > >
> > > (1) The part was defective from the manufacturer.
> > >
> > > (2) The voltage rating was consistently exceeded.
> > >
> > > (3) The thing was installed backwards (reverse polarity).
> > >
> > > I have no less than five Tektronix O-scopes here, all vintage
> > >late-70's to mid-80's. This means not one of them is less than 20 years
> > >old. They all use lots of tantalums, and they all work great, but then
> > >again Tek was (in those days) proud of what they put out, and was most
> > >definitely engineer-driven (which means at least a 20% 'fudge factor'
> > >built into everything they made).
> > >
> > > Tantalum caps are very stable and durable, but they are much more
> > >costly than aluminum types. In consumer electronics, the manufacturers
> > >will try to shave every penny they can off the cost of the design, often
> > >contrary to good common (engineering) sense.
> > >
> > > Such considerations are (usually) not so critical when it comes to
> > >non-consumer stuff.
>
> Tektronix was, during that time, strongly discouraging all new designs from
> using tantalums. IIRC they had been taken to court over a case in which
> a 465 'scope (the original, not the plastic follow-ons) had spontaneously
> ignited and had resulted in an expensive fire. Forensics revealed that

> a tantalum power-supply bypass cap had started the conflagration. The
> drive to reduce tantalum usage was driven primarily by this liability issue,
> more than component cost. If you wanted to use a tantalum, you had to
> justify its usage to the component/design review committees -- which wasn't
> difficult if you had good reasons and your design was solid.

Ah ha! I have a 465 (w/DM44) that I purchased in 1978 for personal use
(no commercial abuse). Shortly after the warranty expired, it would not
power up.
I traced the problem to a shorted tantalum filter cap on the +15 volt
line.
But of course, it wasn't in the power supply, but rather on one of the
boards.
Pain to get to, IIRC.

BTW, I did not get option 5 (TV sync separator). I wonder if it is
feasable to
install it myself? Documentation is listed as 465 option 5 supplement
070-2191-00.
Anyone have this info?

--
Jerry wa2rkn no email @ present

2257. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 07:01:19 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403192301.2ab69288@posting.google.com>
Source record: 27644
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

I think you can get adequate Q if you use a powdered iron toroid. I'm not going to take the time to look; there are some Q curves on the Amidon website. But I think that a T-37-2 core might work OK. I could also have a look at what's possible with a lower Q coil, but don't have the time right now. You could do that with Spice or with RFSim99, too. If you lower the "output" capacitor, you will raise the voltage delivered to the 18MHz gate input, given that the LC is resonant at the desired output freq.

A note on the effects of inadequate filtering... Of course, the result is harmonics other than just the fifth in the output. But what does that mean after you've squared things up by running the signal through another gate? How does a waveform which spends all its time at either 5V or 0V have multiple frequencies? It does it by having different high and low times on each cycle of the five output cycles that happen for each input cycle. And if you want a pretty pure 15th harmonic (3rd harmonic of the 5th harmonic), you are probably going to want the cycles to be uniform, and close to 50% duty cycle. (They WILL have plenty of third harmonic...the rise and fall times I observed yesterday on 'HC04s were about 4 nanoseconds, and that will get you up above 100MHz...) That will take more filtering. If your inductor Q is only moderate, you still have a chance if you build a higher order filter, instead of trying to do it with a single pole (really single pole pair) filter such as I suggested. You can do it with a single pole but it has to be quite high loaded Q, and the coil unloaded Q must be higher still. But you can make the multi-pole filter wider, maybe two or three MHz wide, and get by with lower Q inductors and still have reasonably low loss and adequate rejection of the other harmonics.

Yeah, the little moulded SMT inductors aren't very high Q. They are intended more for power supply filtering and choking, but you can use them in relatively wideband filters too.

Now that you've seen that it can be done, I hope you'll be inspired to see what you can do to make it better.

Cheers,
Tom

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message news:<onim50tuhb1b3vrbrgq6aj67o6pi9b7afa@4ax.com>...
> On Fri, 19 Mar 2004 17:46:43 GMT, "Harold E. Johnson"
> <W4ZCB@mchsi.com> wrote:
>

> >
> > I don't think you can get away
> >> with short cuts at RF, especially if you're a non-expert.
> >>
> >3 MHz is practically DC. Why don't you ask one of your friends at the BBC to
> >build it for you.
>
> I was told 40Mhz is "practically DC" too. I guess it depends on where
> you're coming from.
> Actually I've dumped the factory inductor as suggested by Tom and
> wound-up a large, air core job on 15mm plastic water pipe. It's made
> a big difference. I'm happy to report I've now got the 5th! Could be a
> little cleaner but who cares? Tom made a big deal out of the
> importance of high-Q so it was the obvious thing to try. Fortunately,
> it's worked. God knows how I'm going to squeeze this monster coil onto
> the board, though! :-|
> Can I infer from this experience that SMD inductors of over a few uH
> are a waste of time?

2258. Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 12:10:55 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3hcga$27mt78$1@ID-217727.news.uni-berlin.de>
Source record: 27645
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

I wonder if we as a NG might put together a design
for an HF rig that could be built with ease by novices
and experienced constructors alike?

I suggest that none of the CB-style gadgets of today's
CB-style rigs are necessary and that a reproducible design
having only the facilities of, say, the KW2000, would provide the
basis of any station.

Keeping it simple will increase the chance of success.

I suggest the following....
DDS VFO
VFO display based upon graphic LCD to simulate
the use of a tuning knob-plus-dial.
Tuning knob plus flywheel using optical sensors,
giving the "Feel" associated with traditional rigs.

DSP for the audio and mixing stages, perhaps
with a low IF of ooo 50kHz to resolve the ringing
problems that arise in narrow baseband filters
for CW.

ooo 100mW output allowing the choice of PA
for CBers-Masquerading-As-Radio-Hams or
running barefoot QRP for _REAL_ Radio Hams.

Any of the established CB types in this NG are welcome to join
this discussion, I only ask that your contributions be
meaningful and not the inane sneering 'n; jeering for which
you are famous.

2259. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 12:10:59 UTC
From: "The Sperminator"
Message-ID: <9GW6c.621$7f4.54@newsfep4-winn.server.ntli.net>
Source record: 27646
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in message
news:c3hcga$27mt78$1@ID-217727.news.uni-berlin.de...

> DSP for the audio and mixing stages, perhaps
> with a low IF of ooo 50kHz to resolve the ringing
> problems that arise in narrow baseband filters
> for CW.
>

Airy, giving advice on DSP...

BWWWWWWWWWhahahahahahahahahahahahahahahahahaha
hahahahahahahahahahahahahahahahahahahaahhahahaha

2260. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 13:00:48 UTC
From: Brian Howie <brian@nospam.demon.co.uk>
Message-ID: <MLIy6wAACEXAFwCS@b-howie.demon.co.uk>
Source record: 27547
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

In message <c3hcga$27mt78$1@ID-217727.news.uni-berlin.de>, Airy R. Bean
<airy.r.bean@lycos.co.uk> writes
>I wonder if we as a NG might put together a design
>for an HF rig that could be built with ease by novices
>and experienced constructors alike?

Elecraft already do a range of these

http://www.elecraft.com/

Latter-day Heathkit

Brian

--
Brian Howie

2261. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 13:23:15 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <e4ho50d2dnqvalgklb0cs39kmhaoj07aph@4ax.com>
Source record: 27548
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 19 Mar 2004 23:01:19 -0800, k7itm@aol.com (Tom Bruhns) wrote:

>I think you can get adequate Q if you use a powdered iron toroid. I'm
>not going to take the time to look; there are some Q curves on the
>Amidon website. But I think that a T-37-2 core might work OK. I
>could also have a look at what's possible with a lower Q coil, but
>don't have the time right now. You could do that with Spice or with
>RFSim99, too. If you lower the "output" capacitor, you will raise the
>voltage delivered to the 18MHz gate input, given that the LC is
>resonant at the desired output freq.
>
>A note on the effects of inadequate filtering... Of course, the
>result is harmonics other than just the fifth in the output. But what
>does that mean after you've squared things up by running the signal
>through another gate? How does a waveform which spends all its time
>at either 5V or 0V have multiple frequencies? It does it by having
>different high and low times on each cycle of the five output cycles
>that happen for each input cycle. And if you want a pretty pure 15th
>harmonic (3rd harmonic of the 5th harmonic), you are probably going to
>want the cycles to be uniform, and close to 50% duty cycle. (They
>WILL have plenty of third harmonic...the rise and fall times I
>observed yesterday on 'HC04s were about 4 nanoseconds, and that will
>get you up above 100MHz...) That will take more filtering. If your
>inductor Q is only moderate, you still have a chance if you build a
>higher order filter, instead of trying to do it with a single pole
>(really single pole pair) filter such as I suggested. You can do it
>with a single pole but it has to be quite high loaded Q, and the coil
>unloaded Q must be higher still. But you can make the multi-pole
>filter wider, maybe two or three MHz wide, and get by with lower Q
>inductors and still have reasonably low loss and adequate rejection of
>the other harmonics.
>
>Yeah, the little moulded SMT inductors aren't very high Q. They are
>intended more for power supply filtering and choking, but you can use
>them in relatively wideband filters too.
>
>Now that you've seen that it can be done, I hope you'll be inspired to
>see what you can do to make it better.

Indeed, and thanks, Tom. I shall be following up your concept in the
manner you describe; it's a departure from what I thought would be
suggested when I commenced this thread but it's the outright winner in
my book. There's a lot I don't know about coils - I never expected to
have to say that. But there's a lot more to them than meets the eye,

too so I don't feel too ashamed to admit it. Yes, it's a great
solution and the only drawback is the physical size of the inductors
which can be remedied with a little further development as you say.
That is what I plan to do next.
Thanks again!
--

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2262. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 13:25:24 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <leho50d5vj94kkfjhjul9nkfvg3k4ivucb@4ax.com>
Source record: 27549
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 19 Mar 2004 23:01:19 -0800, k7itm@aol.com (Tom Bruhns) wrote:

>Now that you've seen that it can be done, I hope you'll be inspired to
>see what you can do to make it better.

Just a quick thought: how about changing the ratio of the C/L pair to
increase the C so a small coil can be made; keeping the resonant
frequency the same of course. Is there any inherent problem in trying
that approach (I'm sure there is or you would have already suggested
it).

p.
--

The BBC: Licensed at public expense to spread lies.

2263. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 13:42:15 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <31io501igng24iafcgbep44pbv0a59vasg@4ax.com>
Source record: 27550
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

On Sat, 20 Mar 2004 13:00:48 +0000, Brian Howie
<brian@nospam.demon.co.uk> wrote:

>In message <c3hcga$27mt78$1@ID-217727.news.uni-berlin.de>, Airy R. Bean
><airy.r.bean@lycos.co.uk> writes
>>I wonder if we as a NG might put together a design
>>for an HF rig that could be built with ease by novices
>>and experienced constructors alike?
>
>Elecraft already do a range of these
>
>http://www.elecraft.com/

Good but expensive, aren't they?
It would be great to see the people on this group design one here. It
would be invaluable info for those interested in furthering their
knowlege of the hobby and maybe the end product could equal or exceed
the Elecraft specs at a lower price?

p.
--

The BBC: Licensed at public expense to spread lies.

2264. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 14:00:44 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3hiu6$27j1en$1@ID-217727.news.uni-berlin.de>
Source record: 27551
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

I have no experience of the Elecraft kits, but I suspect
that the packing density of components on their PCB's
would mediate against future maintenance and fault-finding?

Also, for Britland, AIUI, there are problems for the man-in-the-street
having to organise his own shipping and passage through customs?

A kit of our own design would not be subject to proprietary
trade secrets. If the AF amp was specced at, say, 1mw into
600 Ohms, then almost any AF amp chip would do the job.

While on the subject of fault -finding, one RX which sticks in my
mind as being very easy to repair was the R210, because all the
aluminium chassis (pl?) folded out on hinges for easy access.

As part of being a _REAL_ Radio Ham is maintaining our own
gear, then there is food for thought in this area.

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:31io501igng24iafcgbep44pbv0a59vasg@4ax.com...
> On Sat, 20 Mar 2004 13:00:48 +0000, Brian Howie
> <brian@nospam.demon.co.uk> wrote:
> >In message <c3hcga$27mt78$1@ID-217727.news.uni-berlin.de>, Airy R. Bean
> ><airy.r.bean@lycos.co.uk> writes
> >>I wonder if we as a NG might put together a design
> >>for an HF rig that could be built with ease by novices
> >>and experienced constructors alike?
> >Elecraft already do a range of these
> >http://www.elecraft.com/
> Good but expensive, aren't they?
> It would be great to see the people on this group design one here. It
> would be invaluable info for those interested in furthering their
> knowlege of the hobby and maybe the end product could equal or exceed
> the Elecraft specs at a lower price?

2265. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 14:34:13 UTC
From: "Edna Cloud"
Message-ID: <jNY6c.633$7f4.69@newsfep4-winn.server.ntli.net>
Source record: 27552
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in message
news:c3hiu6$27j1en$1@ID-217727.news.uni-berlin.de...
> I have no experience of the Elecraft kits

It would appear you have very little experience of anything worthwhile!

Edna

2266. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 14:50:07 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <zSY6c.47415$1p.755339@attbi_s54>
Source record: 27553
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in message
news:c3hiu6$27j1en$1@ID-217727.news.uni-berlin.de...
> I have no experience of the Elecraft kits, but I suspect
> that the packing density of components on their PCB's
> would mediate against future maintenance and fault-finding?

I think you better check out Elecraft -- befroe making pronouncements
of PCB compnent denisty. Active mail reflector with over 35 postings each
day.

> Also, for Britland, AIUI, there are problems for the man-in-the-street
> having to organise his own shipping and passage through customs?

Has been handled a number of ways for Brits, Germans and French.
The recent "cheap" US dollar rates to EU Euro and British Pound -
make the Elecraft offerings a bargain for Europeans.

> A kit of our own design would not be subject to proprietary
> trade secrets. If the AF amp was specced at, say, 1mw into
> 600 Ohms, then almost any AF amp chip would do the job.

There are no trade secrets with Elecraft --
you can even download the K2 assembly manual.

> While on the subject of fault -finding, one RX which sticks in my
> mind as being very easy to repair was the R210, because all the
> aluminium chassis (pl?) folded out on hinges for easy access.
>
> As part of being a _REAL_ Radio Ham is maintaining our own
> gear, then there is food for thought in this area.

5,000 Elecraft K2 kits sold, built and supported -- speaks for itself.
Lyle Johnson designed a DSP option; a 60 meter board is completing testing
and VHF/UHF transverters were introduced earlier this year.

w9gb

2267. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 14:50:54 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3hlvn$28m7gj$1@ID-217727.news.uni-berlin.de>
Source record: 27555
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

How is the number of postings to a mail reflector an
indication of component density?

"G.Beat" <now9spamgb@spam.comcast.net> wrote in message
news:zSY6c.47415$1p.755339@attbi_s54...
> "Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in message
> news:c3hiu6$27j1en$1@ID-217727.news.uni-berlin.de...
> > I have no experience of the Elecraft kits, but I suspect
> > that the packing density of components on their PCB's
> > would mediate against future maintenance and fault-finding?
> I think you better check out Elecraft -- befroe making pronouncements
> of PCB compnent denisty. Active mail reflector with over 35 postings each
> day.

2268. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 14:51:34 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3hlvo$28m7gj$2@ID-217727.news.uni-berlin.de>
Source record: 27554
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

So you agree that there are problems?

"G.Beat" <now9spamgb@spam.comcast.net> wrote in message
news:zSY6c.47415$1p.755339@attbi_s54...
> "Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in message
> > Also, for Britland, AIUI, there are problems for the man-in-the-street
> > having to organise his own shipping and passage through customs?
> Has been handled a number of ways for Brits, Germans and French.

2269. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 14:52:34 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3hlvo$28m7gj$3@ID-217727.news.uni-berlin.de>
Source record: 27556
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

But it doesn't speak for the essence of Ham Radio.

"G.Beat" <now9spamgb@spam.comcast.net> wrote in message
news:zSY6c.47415$1p.755339@attbi_s54...
> 5,000 Elecraft K2 kits sold, built and supported -- speaks for itself.

2270. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 15:13:22 UTC
From: Tam/WB2TT <t-tammaru@c0mca$t.net>
Message-ID: <WeudnQsD274PwsHdRVn-uw@comcast.com>
Source record: 27557
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul,
If you are trying to keep things small, have you considered one of the high speed versions of the 4046 PLL/OSC? Some manufacturers spec these up to 20 MHz. No coils. If you go with the LC, and you have any fixed capacitors in parallel with the inductor, use decent capacitors, like mica or RF approved ceramic. I have seen cheap ceramic caps meant for bypassing just not work in applications like yours.

Tam
"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message news:onim50tuhb1b3vrbrgq6aj67o6pi9b7afa@4ax.com...
> On Fri, 19 Mar 2004 17:46:43 GMT, "Harold E. Johnson"
> <W4ZCB@mchsi.com> wrote:
>
> >
> > I don't think you can get away
> >> with short cuts at RF, especially if you're a non-expert.
> >>
> >3 MHz is practically DC. Why don't you ask one of your friends at the BBC to
> >build it for you.
>
> I was told 40Mhz is "practically DC" too. I guess it depends on where
> you're coming from.
> Actually I've dumped the factory inductor as suggested by Tom and
> wound-up a large, air core job on 15mm plastic water pipe. It's made
> a big difference. I'm happy to report I've now got the 5th! Could be a
> little cleaner but who cares? Tom made a big deal out of the
> importance of high-Q so it was the obvious thing to try. Fortunately,
> it's worked. God knows how I'm going to squeeze this monster coil onto
> the board, though! :-|
> Can I infer from this experience that SMD inductors of over a few uH
> are a waste of time?
> --
>
> The BBC: Licensed at public expense to spread lies.

2271. Re: soldering coax shield

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 15:26:41 UTC
From: Tam/WB2TT <t-tammaru@c0mca$t.net>
Message-ID: <y-udnX_SCs0s_8HdRVn-ig@comcast.com>
Source record: 27558
Cross-posted to:
alabama.birmingham.radio.amateur,alt.ham-radio.vhf-uhf,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

"krem" <news@rkremser.endjunk.com> wrote in message
news:65768d4fb60d9fe61338d27a4aff8e75@news.teranews.com...
> Hello, in need of some urgent help. I am having a horibble time soldering
> the shield of a coax cable to a copper pad in a circuit. I just can't get
> the solder to flow on the shield. What can i do? I don't know if it
> matters but the shield has the appeareance of aluminium. I"m hoping this
> isn't what it is but really dont' know. Please help. Thanks in advance
>
>
Are you trying to solder RG6? Easiest fix is to go buy a piece of RG59, if
you need 75 Ohm coax, or almost any 50 Ohm coax. I gather there is no wire
braid over the Al foil.

Tam/WB2TT

2272. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 15:39:32 UTC
From: DLT <***>
Message-ID: <405c65d5.0@entanet>
Source record: 27559
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

Airy R. Bean dribbled:
<snip>

Now what has he been reading?

Or should I say been read to him!

The level of care in the community has definitely dropped.

2273. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 16:16:56 UTC
From: Leigh <news@leighs.org>
Message-ID: <Xns94B2A4EF11A3FIfartusmeltit@130.133.1.4>
Source record: 27560
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in
news:c3hcga$27mt78$1@ID-217727.news.uni-berlin.de:

> I wonder if we as a NG might put together a design
> for an HF rig that could be built with ease by novices
> and experienced constructors alike?

I'll go for that - willing to offer some webspace too.

See Gareth - I'm not all that bad.

> I suggest that none of the CB-style gadgets of today's
> CB-style rigs are necessary and that a reproducible design
> having only the facilities of, say, the KW2000, would
> provide the basis of any station.

Fine radio the KW2000. Work great. One of my club guys has
nothing more recent in his shack for HF use.

> Keeping it simple will increase the chance of success.

Yup. Make it a similar project to the K1 and K2 Elecraft -
i.e. you can make it work in stages and use itself as a piece
of test gear too.

> ooo 100mW output allowing the choice of PA
> for CBers-Masquerading-As-Radio-Hams or
> running barefoot QRP for _REAL_ Radio Hams.

Steady. You could lose my interest quickly.

> Any of the established CB types in this NG are welcome to
> join this discussion, I only ask that your contributions be
> meaningful and not the inane sneering 'n; jeering for which
> you are famous.

Sure - make it good and you never know what could come of
this. Do feel free to email me Gareth - I won't bite - have
about 50Gb of webspace doing nothing.

Leigh....

--

#!/bin/sh {who;} {last;} {pause;} {grep;} {touch;} {unzip;}
mount /dev/girl -t {wet;} {fsck;} {fsck;} {fsck;} {fsck;} echo
yes yes yes {yes;} umount {/dev/girl;zip;} rm -rf {wet.spot;}
{sleep;} finger: permission denied

2274. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 16:19:05 UTC
From: Leigh <news@leighs.org>
Message-ID: <Xns94B2A54CAD509lfartusmeltit@130.133.1.4>
Source record: 27561
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in
news:c3hlvn$28m7gj$1@ID-217727.news.uni-berlin.de:

> How is the number of postings to a mail reflector an
> indication of component density?

I feel this was a demonstration of the popularity and supporters
of Elecraft - not so to do with component density.

--

#!/bin/sh {who;} {last;} {pause;} {grep;} {touch;} {unzip;}
mount /dev/girl -t {wet;} {fsck;} {fsck;} {fsck;} {fsck;} echo
yes yes yes {yes;} umount {/dev/girl;zip;} rm -rf {wet.spot;}
{sleep;} finger: permission denied

2275. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 16:57:16 UTC
From: David Honey <david@nospam.thanks.com>
Message-ID: <405C77EC.60107@nospam.thanks.com>
Source record: 27562
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

Airy R. Bean wrote:

> I have no experience of the Elecraft kits, but I suspect
> that the packing density of components on their PCB's
> would mediate against future maintenance and fault-finding?

No, I don't think so. Have built a K2 #4030 about 8 weeks ago
with SSB balanced modulator and DSP options. It uses no SMDs
(except one case described below) and you can get at most things
for both DC measurements or for attaching a scope probe to.
On the DSP, there is a piggy-back board pre-manufactured with
the DSP chip as an SMD. Elecraft publish a DC voltage table
to assist in trouble shooting. The email reflector had plenty
of knowldeable Elecraft owners to assist or make suggesstions
and the Elecraft post-sales support is also good.

Also built a KX1 for a white stick op ham friend. If anything,
the component density on that and the add-on boards is higher
than the K2. It uses a couple of SMDs, the main one for the DDS.
But apart from that, most things are accessible. The KX1
was an ideal rig for my friend to take on holiday since it's
small and supports eyes-free operation with CW feedback.

73, David, M0DHO

2276. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 17:18:59 UTC
From: "God's gift to women"
Message-ID: <uc%6c.4910$1h7.32211@newsfep4-glfd.server.ntli.net>
Source record: 27563
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Sam" <Sam@heterodyne.fswrld.co.uk> wrote in message
news:MPG.1ac6829d715e8d3f9896d6@news.freeserve.co.uk...
> In article <kldo501nvp463pimob1ved2vihav083h0m@4ax.com>, me@privacy.net
> says...
>
> The cowering coward RVMJ invents another sock-puppet to bore us all with
> his nugatory comments.

Says the "brain dead CB'er"...

tox

2277. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 17:52:50 UTC
From: "jim.gm4dhj" <jim.gm4dhj@ntlworld.com>
Message-ID: <1y%6c.10$mG4.1@newsfe1-win>
Source record: 27564
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

a reproducible design
> having only the facilities of, say, the KW2000, would provide the
> basis of any station.

I've got a KW2000 ....with one 6146........

2278. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 17:57:49 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3i0rt$26nsi8$1@ID-217727.news.uni-berlin.de>
Source record: 27566
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

```
The only exception to the attributes of the KW2000
which I'd modify is the 200kHz wide bands.

"jim.gm4dhj" <jim.gm4dhj@ntlworld.com> wrote in message
news:1y%6c.10$mG4.1@newsfe1-win...
>
> a reproducible design
> > having only the facilities of, say, the KW2000, would provide the
> > basis of any station.
>
> I've got a KW2000 ..........with one 6146........
>
>
```

2279. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 17:59:48 UTC
From: Graham W <graham93@myprivacy.net>
Message-ID: <1E%6c.184$Qc.103@newsfe5-gui.server.ntli.net>
Source record: 27565
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in message
news:c3hcga$27mt78$1@ID-217727.news.uni-berlin.de...
> I wonder if we as a NG might put together a design
> for an HF rig that could be built with ease by novices
> and experienced constructors alike?
>

A good idea.

There are a few people with the required knowledge.

Walt could help with the specification.

Gary (is it Peach) also.

Brian (G8OSN) is probably one of the few with the technical knowledge
needed.

You, Airy, could sweep the floor.

73s de

GW

2280. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 18:05:48 UTC
From: bo_pkearn_selecta@multi-band-cb-is-here-10-4.eircom.ru.br.net
Message-ID: <405c8767.3747610@news1.eircom.net>
Source record: 27567
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

On Sat, 20 Mar 2004 17:47:27 +0000, Gerry Bilt <me@privacy.net> wrote:

>
>Morons-'R'-U, I guess, especially as the remark wasn't addressed to
>you.

as previously predicted.
the displayed attitude towards
properly qualified a-licensees is a disgrace
and only goes to predict what kind of behaviour
will in time show up on 40m once someone says that their
callsign is g3 or g4 or even g0.

hopefully the g2's will be treated with utmost respect
regardless of the topic of conversation.

2281. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 18:11:52 UTC
From: Graham W <graham93@myprivacy.net>
Message-ID: <ZP%6c.15$mG4.5@newsfe1-win>
Source record: 27568
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in message
news:c3i0rt$26nsi8$1@ID-217727.news.uni-berlin.de...
> The only exception to the attributes of the KW2000
> which I'd modify is the 200kHz wide bands.
>

Can't you cope with modern technology?

The KW wasn't even good for its day.

Is this why you keep getting sacked?

GW

2282. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 18:20:27 UTC
From: Graham W <graham93@myprivacy.net>
Message-ID: <0Y%6c.19$mG4.12@newsfe1-win>
Source record: 27569
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"The Sperminator" <too-hot-to-handle@.com> wrote in message
news:9GW6c.621$7f4.54@newsfep4-winn.server.ntli.net...
>
> "Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in message
> news:c3hcga$27mt78$1@ID-217727.news.uni-berlin.de...
>
> > DSP for the audio and mixing stages, perhaps
> > with a low IF of ooo 50kHz to resolve the ringing
> > problems that arise in narrow baseband filters
> > for CW.
> >
>
> Airy, giving advice on DSP...
>
> BWWWWWWWWWhahahahahahahahahahahahahahahahahaha
> hahahahahahahahahahahahahahahahahahahaahhahahaha

Or any advice.

A KW2000 with that works on the "RF bands"

73s de

GW

2283. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 19:03:00 UTC
From: Jedi <jedi@nospamhere>
Message-ID: <405c956c$0$6552$cc9e4d1f@news-text.dial.pipex.com>
Source record: 27570
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Graham W" <graham93@myprivacy.net> wrote in message
news:1E%6c.184$Qc.103@newsfe5-gui.server.ntli.net...

<snip>

> You, Airy, could sweep the floor.

Any suggestions where to stick the broom?

J.

2284. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 19:07:10 UTC
From: Marco <marco.m3van@btopenworld.com>
Message-ID: <c3i4ousd1@hercules.btinternet.com>
Source record: 27571
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in message
news:c3hlvo$28m7gj$2@ID-217727.news.uni-berlin.de...
> So you agree that there are problems?
>
The problems are with you, not the kit
Marco

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.634 / Virus Database: 406 - Release Date: 18/03/2004

2285. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 21:04:34 UTC
From: Johnny Melvin <johnny@melvin.com>
Message-ID: <c3ibho$1p6$1@news5.svr.pol.co.uk>
Source record: 27572
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in message
news:c3hcga$27mt78$1@ID-217727.news.uni-berlin.de...
> I wonder if we as a NG might put together a design
> for an HF rig that could be built with ease by novices
> and experienced constructors alike?
>
> I suggest that none of the CB-style gadgets of today's
> CB-style rigs are necessary and that a reproducible design
> having only the facilities of, say, the KW2000, would provide the
> basis of any station.
>
> Keeping it simple will increase the chance of success.
>
> I suggest the following....
> DDS VFO
> VFO display based upon graphic LCD to simulate
> the use of a tuning knob-plus-dial.
> Tuning knob plus flywheel using optical sensors,
> giving the "Feel" associated with traditional rigs.
>
> DSP for the audio and mixing stages, perhaps
> with a low IF of ooo 50kHz to resolve the ringing
> problems that arise in narrow baseband filters
> for CW.
>
> ooo 100mW output allowing the choice of PA
> for CBers-Masquerading-As-Radio-Hams or
> running barefoot QRP for _REAL_ Radio Hams.
>
> Any of the established CB types in this NG are welcome to join
> this discussion, I only ask that your contributions be
> meaningful and not the inane sneering 'n; jeering for which
> you are famous.
>
Bring back the G2DAF rx/tx I say.

johnny g3liv.

2286. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 21:04:59 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3ibpv$27tifa$1@ID-217727.news.uni-berlin.de>
Source record: 27573
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

A good pair of designs where technical excellence took
precedence over traps-for-the-turnip-brained.

Now, it seems to me, that subject to the mixer performance
in the RX, that we could produce the functionality of the said
TX/RX pair, with the total circuitry occupying no more, say,
than an A4 sheet of paper if we were to use the modern
approaches of DSP and DDS.

What say you?

"Johnny Melvin" <johnny@melvin.com> wrote in message
news:c3ibho$1p6$1@news5.svr.pol.co.uk...
> "Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in message
> news:c3hcga$27mt78$1@ID-217727.news.uni-berlin.de...
> > I wonder if we as a NG might put together a design
> > for an HF rig that could be built with ease by novices
> > and experienced constructors alike?
>
> Bring back the G2DAF rx/tx I say.

2287. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 23:00:16 UTC
From: lederman@star.enet.dec.DISABLE-JUNK-EMAIL.com
Message-ID: <c3iie0nmc1@xuxa.iecc.com>
Source record: 27579
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

I have one of the small desk clocks that synchronizes to WWVB at
night. It auto-adjusts the internal crystal (or says it does)
to keep itself going during the day. I've found that it maintains
accuracy very well: certainly good enough for anything short of
atomic physics.

I live in the NorthEastern U.S., where the signal is relatively weak
(look at the maps at the URL a previous poster supplied) and don't
have any significant trouble with it. I looked at the NIST web
site, and I think they said something about boosting the power of
the WWVB signal: so if you had trouble with it before, it might
be worth trying again.

--
B. Z. Lederman Personal Opinions Only

Posting to a News group does NOT give anyone permission
to send me advertising by E-mail or put me on a mailing
list of any kind.

Please remove the "DISABLE-JUNK-EMAIL" if you have a
legitimate reason to E-mail a response to this post.

2288. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 23:00:18 UTC
From: Dennis <Howdy.Doody@howdydoody.net>
Message-ID: <c3iie2nno1@xuxa.iecc.com>
Source record: 27578
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc, rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

In article <c3f72uino1@xuxa.iecc.com>, n8kdv@nospam.iserv.net says...
>
>
>
>
>Joseph Fenn wrote:
>
>> How in the hell can the CLOCK detector tell any difference between
>> the time signal from WWV or WWVH. They are both on exact same
>> frequecies, the time tick is identical on both !!!!
>
>Once again, the clock the individual wants plans for uses the signal from WWVB
in
>Ft. Collins, Colorado on 60 kHz.

Yes, not to belabor the subjct, but WWVB is 60Khz,
while WWV, & WWVH are 2.5.....20Mhz.

There is no voice with WWVB. Howver, for calibration purposes
WWVB is more stable, and accurate.

Dennis
>
>
>

2289. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 23:00:19 UTC
From: mzenier@eskimo.com
Message-ID: <c3iie3$np7$1@xuxa.iecc.com>
Source record: 27575
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc, rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

In article <c3cpcm$3vs$1@xuxa.iecc.com>, Joseph Fenn <jfenn@lava.net> wrote:
>How in the hell can the CLOCK detector tell any difference between
>the time signal from WWV or WWVH. They are both on exact same
>frequecies, the time tick is identical on both !!!!
> Kokomo Joe

No, the second ticks are 5 cycles of 1000 Hz on WWV and 6 cycles of
1200 Hz on WWVH.

Mark Zenier mzenier@eskimo.com Washington State resident

2290. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 23:00:23 UTC
From: Dennis <Howdy.Doody@howdydoody.net>
Message-ID: <c3iie7nrl1@xuxa.iecc.com>
Source record: 27577
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc, rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

In article <c3cpcm$3vs$1@xuxa.iecc.com>, jfenn@lava.net says...
>
>
>How in the hell can the CLOCK detector tell any difference between
>the time signal from WWV or WWVH. They are both on exact same
>frequecies, the time tick is identical on both !!!!
> Kokomo Joe
>WWVH on Kauai has a consistantly strong signal. Albeit at times
>is totally off the air several times in any given month.
>

You're right a wwv or wwvh clock both receive and decode
the same manner. Both wwv and wwvh transmit at 2.5, 5. 10, 15, & 20Mhz.
There is no 60Khz on Kiuai.

Dennis
>
>**
>* Ham KH6JF AARS/MARS ABM6JF QCWA WW2 VET WD RADIO *
>**
>
>
>On Wed, 17 Mar 2004, N8KDV wrote:
>
>>
>>
>> Scott Dorsey wrote:
>>
>> > tommyknocker <tomynokr@uucp.hell> wrote:
>> > >Forget about getting an atomic clock to set in Hawaii. The signal is
>> > >simply too weak. Atomic Time (who I bought my dual time clock from) says
>> > >that it helps if you point the antenna (apparently they just use ferrite
>> > >rod antennas-just like in a cheap transistor radio-to recieve) towards
>> > >Fort Collins, which is due east of my QTH.
>> >
>> > Huh? WWVH in Lihue used to come in five and nine everywhere in Hawaii.
>> > On AM car radios, tape recorders, sometimes even rice cookers.
>> > --scott
>>
>> That may be the case Scott, but the 'atomic clocks' they are speaking of use
>> the WWVB signal from Ft. Collins, Colorado on 60 KHz to set their time
>> automatically.
>>

>> That signal may indeed not be propagating well enough to be of use in
Hawaii.
>>
>> Steve
>> Holland, MI
>> Drake R7, R8 and R8B
>>
>> http://www.iserv.net/~n8kdv/dxpage.htm
>>
>>
>>
>>
>

2291. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 23:00:25 UTC
From: Dave VanHorn <dvanhorn@cedar.net>
Message-ID: <c3iie9nso1@xuxa.iecc.com>
Source record: 27576
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

> That was a Navy transmitter, not NIST.

Yes.

>I was stationed at Lualualei
> for almost two years in the mid '70s. I wonder if it is still on the
> air now that they have switched most of their circuits to satellite.

We were there at the same time. 69-87 for me.

I once had to put in a buried seismic alarm system right across the street
from that transmitter.
Took some interesting filtering on the signal lines, not to mention three
weeks to ditch through the coral.

2292. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 23:02:40 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <5jip50pd2cnkchd80c366ulmefoq29o80h@4ax.com>
Source record: 27574
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 20 Mar 2004 10:13:22 -0500, "Tam/WB2TT"
<t-tammaru@c0mca$t.net> wrote:

>Paul,
>If you are trying to keep things small, have you considered one of the high
>speed versions of the 4046 PLL/OSC? Some manufacturers spec these up to 20
>MHz. No coils. If you go with the LC, and you have any fixed capacitors in
>parallel with the inductor, use decent capacitors, like mica or RF approved
>ceramic. I have seen cheap ceramic caps meant for bypassing just not work in
>applications like yours.

That's a point well worth remembering, Tam: it's not just coils that
exhibit a Q-factor and just as much harm can be caused by using lossy
capactors in tuing applications, too.
The PLL suggestion is a good one, but I'm trying to keep things simple
for this fairly straightforward project. It's nice to be able to build
everything just from what's in the junkbox.
--

The BBC: Licensed at public expense to spread lies.

2293. Loads of Moving coil meters , F/A on ebay.co.uk

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 23:14:26 UTC
From: paul405 <paul405@ntlworld.com>
Message-ID: <Vf47c.10$w63.1@newsfe1-win>
Source record: 27580

HI THERE

There are some old meters for sale on ebay
iam sure some one out there would find some use for them
radio restorations , new builds , replacements etc etc

for auction on ebay.co.uk ,, check out this link

http://cgi.ebay.co.uk/ws/eBayISAPI.dll?ViewItem&item=2232773689&category=132
&sspagename=STRK%3AMESSE%3AIT&rd=1

hope the info is useful
bbyyeeee

2294. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-20 23:36:22 UTC
From: Doug Smith W9WI <w9wi@invalid.invalid>
Message-ID: <405CD574.5070509@invalid.invalid>
Source record: 27581
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

Airy R. Bean wrote:
> I wonder if we as a NG might put together a design
> for an HF rig that could be built with ease by novices
> and experienced constructors alike?
>
> ...
>
> ooo 100mW output allowing the choice of PA
> for CBers-Masquerading-As-Radio-Hams or
> running barefoot QRP for _REAL_ Radio Hams.

IMHO... QRP, for the new-to-HF ham whose Morse (and/or voice procedures) isn't all that solid yet... and who's probably using a comprimise antenna... is really not a good idea.

Save it for when one's got some experience under the belt & is interested in trying something new.

The homebrew design that would, IMHO, bring a lot of new folks to the HB fold, would be...

A simple, inexpensive, easy to duplicate, linear amplifier. 2-5 watts in, 50-100 watts out; good for all HF bands; run from 12V. (yes, there are certain advantages to using 28V, but 12V power supplies are cheap and ubiquitous. I know I misspelled that!)

It could be used with a wide variety of existing HB QRP transceivers, or with a variety of commercial QRP gear.
--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com

2295. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 00:37:41 UTC
From: "God's gift to women"
Message-ID: <QF57c.4956$1h7.32336@newsfep4-glfd.server.ntli.net>
Source record: 27583
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Sam" <Sam@heterodyne.fswrld.co.uk> wrote in message
news:MPG.1ac69bc828dfe90c9896db@news.freeserve.co.uk...
> In article <uc%6c.4910$1h7.32211@newsfep4-glfd.server.ntli.net>, No-
> Viagra-needed-here@super-stud.com. says...
>
> >
> > Says the "brain dead CB'er"...
> >
> > tox
>
> Is this yet another Cber coming to the defence of the cowering coward
> RVMJ?

How's the Morse training coming along? Lets hope it's going better than the
potty training!

tox

2296. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 00:50:39 UTC
From: Doug Smith W9WI <w9wi@invalid.invalid>
Message-ID: <405CE6DD.6060605@invalid.invalid>
Source record: 27582
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

Doug Smith W9WI wrote:
> IMHO... QRP, for the new-to-HF ham whose Morse (and/or voice
> procedures) isn't all that solid yet... and who's probably using a
> comprimise antenna... is really not a good idea.
>

(I managed to work one of your Foundation licensees on 21MHz PSK31 last
week, but it wasn't easy to copy her QRP (and ESP!) signal...)
--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com

2297. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 00:59:10 UTC
From: Alun <elektros@yahoo.com>
Message-ID: <Xns94B2CB45C1C3Celektrosmdonet@130.133.1.4>
Source record: 27584
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

Doug Smith W9WI <w9wi@invalid.invalid> wrote in news:405CE6DD.6060605
@invalid.invalid:

> Doug Smith W9WI wrote:
>> IMHO... QRP, for the new-to-HF ham whose Morse (and/or voice
>> procedures) isn't all that solid yet... and who's probably using a
>> comprimise antenna... is really not a good idea.
>>
>
> (I managed to work one of your Foundation licensees on 21MHz PSK31 last
> week, but it wasn't easy to copy her QRP (and ESP!) signal...)

The alternative would be pretty silly though, wouldn't it? That is, the
more tests you pass the less power you are allowed. Nobody would upgrade,
would they?

2298. Low-loss toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 01:49:20 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <0rsp50pn4gc8idd395qhakrgcl9kqchen9@4ax.com>
Source record: 27585

Hi all,

I've been trawling through my various catalogues tonight looking for
toroids that might be suitable to wind hi-Q inductors around, but am
disappointed to see that all the stuff on offer seems to be geared
around interference suppression and is consequently - I assume - very
lossy material. Does anyone know of a source in the UK that can supply
small, *low-loss* toroids by the dozen to the hobbyist via mail order?

Thanks,

p.
--

The BBC: Licensed at public expense to spread lies.

2299. Re: Low-loss toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 03:23:11 UTC
From: "Charles R. Ott" <k5hj@qsl.net>
Message-ID: <zU77c.747$N14.558@newssvr23.news.prodigy.com>
Source record: 27586

Paul,

You need to look at powdered iron cores instead of ferrites.

K5HJ

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:0rsp50pn4gc8idd395qhakrgcl9kqchen9@4ax.com...
> Hi all,
>
> I've been trawling through my various catalogues tonight looking for
> toroids that might be suitable to wind hi-Q inductors around, but am
> disappointed to see that all the stuff on offer seems to be geared
> around interference suppression and is consequently - I assume - very
> lossy material. Does anyone know of a source in the UK that can supply
> small, *low-loss* toroids by the dozen to the hobbyist via mail order?
>
> Thanks,
>
> p.
> --
>
> The BBC: Licensed at public expense to spread lies.

2300. Re: Low-loss toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 03:36:13 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <105q3dg12uefc69@corp.supernews.com>
Source record: 27587

Yes, powdered iron (I believe it's "iron dust" in the Queen's English) is what you want. The major manufacturer of suitable cores is Micrometals. Their products are sold by Amidon and others. Give their web site a look for general info, and a google search should yield some retail sources. For HF work, type 6 generally gives the highest Q, with type 2 in second place.

Roy Lewallen, W7EL

Charles R. Ott wrote:
> Paul,
>
> You need to look at powdered iron cores instead of ferrites.
>
> K5HJ

2301. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 06:01:54 UTC
From: exray <dontspamexray@coqui.net>
Message-ID: <c3jb4i$6e8$1@xuxa.iecc.com>
Source record: 27588
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

Dennis wrote:

>
> You're right a wwv or wwvh clock both receive and decode
> the same manner. Both wwv and wwvh transmit at 2.5, 5. 10, 15, & 20Mhz.
> There is no 60Khz on Kiuai.
>
> Dennis
>
>>**
>>* Ham KH6JF AARS/MARS ABM6JF QCWA WW2 VET WD RADIO *
>>**

I'm sure they are out there but I have never seen one. Can you show me
a consumer grade WWV/WWVH synchronized clock?

-Bill M

2302. Re: Low-loss toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 06:34:41 UTC
From: averyfineman@aol.com
Message-ID: <20040321013441.00545.00004942@mb-m02.aol.com>
Source record: 27589

In article <105q3dg12uefc69@corp.supernews.com>, Roy Lewallen <w7el@eznec.com>
writes:

>Yes, powdered iron (I believe it's "iron dust" in the Queen's English)
>is what you want. The major manufacturer of suitable cores is
>Micrometals. Their products are sold by Amidon and others. Give their
>web site a look for general info, and a google search should yield some
>retail sources. For HF work, type 6 generally gives the highest Q, with
>type 2 in second place.

Quite so, Roy!

Micrometals website is - http://www.micrometals.com

The website has a nice, free, downloadable program for calculating
the number of turns for any of their toroidal cores for any of their
powder mixes for many sizes of magnet wire.

One of their publications is the venerable "Q Book" which graphs
the Q of many different inductances wound on their forms over
frequency from LF to UHF. If Paul can talk them out of a copy
he will find it indispensable for estimating toroidal inductors...
provided there is a supplier on his side of the pond.

Amidon is a reseller (Micrometals' minimum order is at least 100
of any type, or was). Most of the small quantities found in ham
and electronics stores here have some typical Q curves enclosed
in the plastic packet, curves originally from Micrometals.

Len Anderson
retired (from regular hours) electronic engineer person

2303. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 07:13:49 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3jg51$28s8j9$2@ID-217727.news.uni-berlin.de>
Source record: 27590
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

If you start out with a defeatist attitude, and pass that defeatism onto your prot�g�s, then, yes, you and they will be defeated.

"Doug Smith W9WI" <w9wi@invalid.invalid> wrote in message news:405CD574.5070509@invalid.invalid...
> Airy R. Bean wrote:
> > I wonder if we as a NG might put together a design
> > for an HF rig that could be built with ease by novices
> > and experienced constructors alike?
> > ooo 100mW output allowing the choice of PA
> > for CBers-Masquerading-As-Radio-Hams or
> > running barefoot QRP for _REAL_ Radio Hams.
> IMHO... QRP, for the new-to-HF ham whose Morse (and/or voice
> procedures) isn't all that solid yet... and who's probably using a
> comprimise antenna... is really not a good idea.
> Save it for when one's got some experience under the belt & is
> interested in trying something new.

2304. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 07:17:05 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3jg52$28s8j9$3@ID-217727.news.uni-berlin.de>
Source record: 27591
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

Handling successfully the vagaries of the communications system is part
of what _REAL_ Ham Radio is all about. If you want 59+ BBC quality
then neither Ham Radio nor this thread is for you. CB Radio, perhaps?

"Doug Smith W9WI" <w9wi@invalid.invalid> wrote in message
news:405CE6DD.6060605@invalid.invalid...
> (I managed to work one of your Foundation licensees on 21MHz PSK31 last
> week, but it wasn't easy to copy her QRP (and ESP!) signal...)

2305. Re: soldering coax shield

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 08:53:50 UTC
From: krem <news@rkremser.endjunk.com>
Message-ID: <047666b632301d5e9fb3a2edcd28de90@news.teranews.com>
Source record: 27592
Cross-posted to:
alabama.birmingham.radio.amateur,alt.ham-radio.vhf-uhf,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

"Tam/WB2TT" <t-tammaru@c0mca$t.net> wrote in message
news:y-udnX_SCs0s_8HdRVn-ig@comcast.com...
>
> "krem" <news@rkremser.endjunk.com> wrote in message
> news:65768d4fb60d9fe61338d27a4aff8e75@news.teranews.com...
> > Hello, in need of some urgent help. I am having a horibble time
soldering
> > the shield of a coax cable to a copper pad in a circuit. I just can't
get
> > the solder to flow on the shield. What can i do? I don't know if it
> > matters but the shield has the appeareance of aluminium. I"m hoping
this
> > isn't what it is but really dont' know. Please help. Thanks in advance
> >
> >
> Are you trying to solder RG6? Easiest fix is to go buy a piece of RG59, if
> you need 75 Ohm coax, or almost any 50 Ohm coax. I gather there is no wire
> braid over the Al foil.
>
> Tam/WB2TT
>
>

Thats what i found out today. That its all RG6 locally ex. homedepto
radioshack. I can't seem to find any other sources (i'm at lehigh
university in PA in case anyone is close) I only need at most 2 feet of
this. Would anyone be able to ship me some if i were to cover shipping or
think of an alternative. I have a 2.4 ghz wireless network up right now
which i need to attach a home made antenna to. Aside from the antenna and
wireless transmitter all i have right now are f-connectors and a lot of rg6.
The antenna and card are still connectorless. I"m open to any solutions
some one may have. thanks in advance

2306. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 09:33:40 UTC
From: Doug Smith W9WI <w9wi@invalid.invalid>
Message-ID: <405D6173.2090704@invalid.invalid>
Source record: 27593
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

Walt Davidson wrote:
> On Sun, 21 Mar 2004 00:50:39 GMT, Doug Smith W9WI
> <w9wi@invalid.invalid> wrote:
>
>
>>(I managed to work one of your Foundation licensees on 21MHz PSK31 last
>>week, but it wasn't easy to copy her QRP (and ESP!) signal...)
>
>
> I take it that "ESP" is short for "Extra Sensory Perception" ... which
> would be needed before I would be able to hear any M3's signal!

(yep! Actually on PSK31 I suppose the proper phrase would be "reading
between the lines", quite literally...)
--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com

2307. A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 11:18:35 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3jtq9$27suha$3@ID-217727.news.uni-berlin.de>
Source record: 27594
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

For those of you who have the necessary technical
motivation to understand how things work, have become
interested in Ham Radio but are confused by the
attitudes and activities of those who are really no
more than CBers-Masquerading-As-Radio-Hams,
I append a short article explaining the difference.....

What is Ham Radio?

Ham Radio is a technical pursuit for those who
are interested in the science of radio wave
propagation and who are also interested in the
way that their radios function. It has a long-standing
tradition of providing a source of engineers who
are born naturals.

Ham Radio awakens in its aficionados a whole-life
fascination with all things technical and gives
an all-abiding curiosity to improve one's scientific
knowledge. It's a great swimming pool, please dive in!

This excitement causes a wish to share the experience
with ones fellow man, and shows itself in the
gentlemanly traditions of Ham Radio.

Radio Hams are qualified to design, build and then
operate their own pieces of equipment. They do this
with gusto, and also repair and modify their own
equipment.

The excitement that drives a Radio Ham starts with
relatively simple technologies at first, perhaps making
his own Wimshurst machine and primary cells. Small pieces
of test equipment follow, possibly multimeters and signal
generators. Then comes receivers and transmitters. It is with
the latter that communication with like-minded technically
motivated people takes off. The scope for technical
development grows with the years
and now encompasses DSP and DDS. There is also a great deal
of excitement in the areas of computer programming to
be learnt and applied.

The technical excitement motivates Radio Hams to compete
with each other to determine who has designed and manufactured
the best-quality station. This competitiveness is found in DXing,

competitions and fox-hunts.

-----OOOOO----

However, beware! A Ham Radio licence is such a
desirable thing to have that there are large
numbers of people who wish to be thought of
as Radio Hams when, in fact, they are nothing
of the kind! Usually such people are a
variation of the CB Radio hobbyist; they buy their
radios off the shelf and send them back to be
repaired; they are not interested in technical discussion
and sneer at those who are; they have no idea how
their radios work inside and have no wish to find out;
they are free with rather silly personal insults;
they have not satisfied any technical qualification
and their licences prevent the use of
self-designed-and-built equipment.

These CB types engage in the competitive activities
with their Cheque-Book-purchased off-the-shelf radios
in a forlorn effort to prove that they are Radio Hams.

No _REAL_ Radio Hams are deceived by such people!

2308. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 13:41:00 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3k654$270gkm$1@ID-217727.news.uni-berlin.de>
Source record: 27595
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

The CBer reveals himself every time that he opens his mouth.....

"Bill Turner" <noway@nohow.com> wrote in message
news:lo6r50hhhjvus2fesvufmscgvudj2obt04@4ax.com...
> Bill, W6WRT
> 47 years of hamming and still unimpressed
> by the likes of Airyhead Bean.

2309. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 13:43:50 UTC
From: n2ey@aol.comSPAMNO
Message-ID: <20040321084350.23307.00007421@mb-m29.aol.com>
Source record: 27596

In article <31io501igng24iafcgbep44pbv0a59vasg@4ax.com>, Paul Burridge
<pb@osiris1.notthisbit.co.uk> writes:

>On Sat, 20 Mar 2004 13:00:48 +0000, Brian Howie
><brian@nospam.demon.co.uk> wrote:
>
>>In message <c3hcga$27mt78$1@ID-217727.news.uni-berlin.de>, Airy R. Bean
>><airy.r.bean@lycos.co.uk> writes
>>>I wonder if we as a NG might put together a design
>>>for an HF rig that could be built with ease by novices
>>>and experienced constructors alike?
>>
>>Elecraft already do a range of these
>>
>>http://www.elecraft.com/
>
>Good but expensive, aren't they?

Not for what you get.

>It would be great to see the people on this group design one here. It
>would be invaluable info for those interested in furthering their
>knowlege of the hobby and maybe the end product could equal or exceed
>the Elecraft specs at a lower price?

You can see what you're up against quite easily by downloading the Elecraft
manuals from their website.

73 de Jim, N2EY
>

2310. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 14:01:34 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3k7bn$280bu1$1@ID-217727.news.uni-berlin.de>
Source record: 27497
Cross-posted to: rec.radio.amateur.homebrew,uk.radio.amateur

I had a look at the elecraft site and it looks like the
typical Yankland commercial rip-off - by the time you've
added all the "options" you haven't got anything worthwhile
for a decent price..

So, ignoring the obvious plugs for "elecrap" how's about
designing a rig within the NG that would provide the facilities
that a newcomer and OM alike need, and which one might
build oneself?

"N2EY" <n2ey@aol.comSPAMNO> wrote in message
news:20040321084350.23307.00007421@mb-m29.aol.com...
> In article <31io501igng24iafcgbep44pbv0a59vasg@4ax.com>, Paul Burridge
> <pb@osiris1.notthisbit.co.uk> writes:
>
> >On Sat, 20 Mar 2004 13:00:48 +0000, Brian Howie
> ><brian@nospam.demon.co.uk> wrote:
> >>Elecraft already do a range of these
> >>http://www.elecraft.com/
> >Good but expensive, aren't they?
> Not for what you get.

2311. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 14:38:52 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c3k9dsofs1@sparta.btinternet.com>
Source record: 27498
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

```
> It has a long-standing
> tradition of providing a source of engineers who
> are born naturals.
>
============================

On the contrary. There's a long-standing tradition of born-natural engineers
becoming radio amateurs.

Don't bother quoting a few exceptions to the rule.
---
Reg
```

2312. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 15:03:06 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3kb3f$28qums$2@ID-217727.news.uni-berlin.de>
Source record: 27500
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

Perhaps she is stamping her tiny foot in a fit of pique?

Certainly she has shown her true colours in recent days,
if the quotes by "Super Sam" are anything to go by. Any pretence
that she may have had about never being uncivil have been
completely blown away, and she can be seen for what she really is,
and that is a bitter and twisted old harridan who is best ignored by
anyone who wishes to maintain standards in _REAL_ Ham radio.

"Walt Davidson" <g3nyy@despammed.com> wrote in message
news:epar50hsqgttkef68uttqji0k8do0qmc91@4ax.com...
> On Sun, 21 Mar 2004 14:39:01 +0000, Gerald Blusters-Forth
> <me@privacy.net> wrote:
> [the usual load of drivel]
> Why are you posting under a new sock-puppet, RVMJ?

2313. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 15:10:52 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3kbdl$28ulr3$1@ID-217727.news.uni-berlin.de>
Source record: 27501

Reduce the L to reduce the resistive loss - the essence of L
is the energy stored in its current carrying, and it is the current that
causes I^2 R losses. The energy stored in the C is static. (Yes, there
are some losses in polarising the dielectrics but these are small enough
to be ignored)

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:dvbr5055va11osgpbl16mokuhjvnjulq77@4ax.com...
> ISTR that one can improve Q in resonant tanks by having a low L-C
> ratio. Or was it high L-C ratio. I can't remember but need to know.

2314. Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 15:11:01 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <dvbr5055va11osgpbl16mokuhjvnjulq77@4ax.com>
Source record: 27499

Hi guys,

ISTR that one can improve Q in resonant tanks by having a low L-C
ratio. Or was it high L-C ratio. I can't remember but need to know.
Can any kind soul help me out? Thanks.

p.
--

The BBC: Licensed at public expense to spread lies.

2315. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 16:02:18 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <e0j7c.3435$o76.2922@nwrdny02.gnilink.net>
Source record: 27502

Airy,
What you said would be relevant only if you were trying to determine circuit losses due to "unloaded" Q of the components. I believe Paul is trying to determine the 'loaded" Q in order to obtain best selectivity (narrowest bandwidth). Is this true Paul?

In order to obtain maximum selectivity, the loaded Q needs to be as high as possible. In the case of a resonant 'tank', the tank reactances are loaded by the external environment. The circuit Q (or 'loaded' Q) in this case is Q=R/X. In order to maximize loaded Q, the X term (reactance) needs to be minimized. This means low L and high C.

In any case, the actual circuit losses will be a function of the ratio of unloaded Q (Q of the components) to loaded Q. The higher the unloaded Q of the components, the lower the losses in the circuit.

Joe
W3JDR

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in message
news:c3kbdl$28ulr3$1@ID-217727.news.uni-berlin.de...
> Reduce the L to reduce the resistive loss - the essence of L
> is the energy stored in its current carrying, and it is the current that
> causes I^2 R losses. The energy stored in the C is static. (Yes, there
> are some losses in polarising the dielectrics but these are small enough
> to be ignored)
>
> "Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
> news:dvbr5055va11osgpbl16mokuhjvnjulq77@4ax.com...
> > ISTR that one can improve Q in resonant tanks by having a low L-C
> > ratio. Or was it high L-C ratio. I can't remember but need to know.
>
>

2316. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 16:12:30 UTC
From: Leigh <news@leighs.org>
Message-ID: <Xns94B3A435CAADBIfartusmeltit@130.133.1.4>
Source record: 27503
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in
news:c3jtq9$27suha$3@ID-217727.news.uni-berlin.de:

> For those of you who have the necessary technical
> motivation to understand how things work, have become
> interested in Ham Radio but are confused by the
> attitudes and activities of those who are really no
> more than CBers-Masquerading-As-Radio-Hams,
> I append a short article explaining the difference.....

I offered help with your supposed attempt to design and build
a radio, to host some webpages, etc.

You have until 23:59 21/04/03 and then the offer is removed.

I presume you've ignored my email.

So much for me trying to promote gentlemanly behaviour.

Leigh....

(PS - discovered the eham.net site yet for technical
discussions Gareth?)
--

#!/bin/sh {who;} {last;} {pause;} {grep;} {touch;} {unzip;}
mount /dev/girl -t {wet;} {fsck;} {fsck;} {fsck;} {fsck;} echo
yes yes yes {yes;} umount {/dev/girl;zip;} rm -rf {wet.spot;}
{sleep;} finger: permission denied

2317. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 16:14:36 UTC
From: Leigh <news@leighs.org>
Message-ID: <Xns94B3A49104AFFIfartusmeltit@130.133.1.4>
Source record: 27504
Cross-posted to: rec.radio.amateur.homebrew,uk.radio.amateur

[posted and mailed]

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in
news:c3k7bn$280bu1$1@ID-217727.news.uni-berlin.de:

> I had a look at the elecraft site and it looks like the
> typical Yankland commercial rip-off - by the time you've
> added all the "options" you haven't got anything worthwhile
> for a decent price..
> So, ignoring the obvious plugs for "elecrap" how's about
> designing a rig within the NG that would provide the
> facilities that a newcomer and OM alike need, and which one
> might build oneself?

You had my offer of help both on this newsgroup and by email.

Offer still stands until 23:59 21/4/03.

Leigh....

--

#!/bin/sh {who;} {last;} {pause;} {grep;} {touch;} {unzip;}
mount /dev/girl -t {wet;} {fsck;} {fsck;} {fsck;} {fsck;} echo
yes yes yes {yes;} umount {/dev/girl;zip;} rm -rf {wet.spot;}
{sleep;} finger: permission denied

2318. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 16:17:22 UTC
From: Leigh <news@leighs.org>
Message-ID: <Xns94B3A50884546lfartusmeltit@130.133.1.4>
Source record: 27505
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in
news:c3jtq9$27suha$3@ID-217727.news.uni-berlin.de:

> For those of you who have the necessary technical
> motivation to understand how things work, have become
> interested in Ham Radio but are confused by the
> attitudes and activities of those who are really no
> more than CBers-Masquerading-As-Radio-Hams,
> I append a short article explaining the difference.....

How about you widen the circulation of this article to more
rec.radio.amateur groups Gareth.

Tell everyone where they are going wrong.

Or are you too chicken?

Leigh...

2319. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 16:22:51 UTC
From: "Dr. Anton T. Squeegee" <SpammersArePondScum@dev.null>
Message-ID: <MPG.1ac7613ae393f279896bb@192.168.42.131>
Source record: 27506
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

In article <c3jtq9$27suha$3@ID-217727.news.uni-berlin.de>,
airy.r.bean@lycos.co.uk says...

> For those of you who have the necessary technical
> motivation to understand how things work, have become
> interested in Ham Radio but are confused by the
> attitudes and activities of those who are really no
> more than CBers-Masquerading-As-Radio-Hams,
> I append a short article explaining the difference.....

<snip destructive propaganda>

For someone who claims such a broad base of knowledge, your
viewpoint is pretty short-sighted.

The Amateur Radio SERVICE has something to offer EVERYone, and
those licensed under its regulations each have the potential to
contribute in ways unique to the individual licensee. Recognizing that
no two people will ever contribute in the same way, and that some will
never contribute more than their presence on the airwaves, is simply
part of the hobby.

There is truth to some of what you're saying, in terms of the
service producing many fine engineers and engineering techs, and of it
being home to those who love to tinker (I know, because that's a big
reason why I got into it). However, it is not required that all of
amateur radio's participants be fully qualified to "design, build, and
operate," as you state.

I suggest you take a good hard look at this link:

http://www.arrl.org/FandES/field/regulations/news/part97/

Pay particular attention to paragraphs a, c, and e.

Amateur radio's real enemy is not those who don't know an
oscilloscope probe from a soldering pencil. No, the real danger to
amateur radio comes from those, like you, who display nothing but
intolerance to newcomers who are interested in the hobby, but who may
never have picked up a multimeter in their lives.

So: Instead of responding to newcomers with elitism and arrogance,
try responding as an "Elmer." Inform them about the purposes behind the
service, and explain about the responsibilities that a license carries.
Also explain that the Amateur Radio service, like any other hobby, is a
mirror: The 'reward' one gets out is directly proportional to what one

puts into it.

Remember: People learn by example.

--
Dr. Anton T. Squeegee, Director, Dutch Surrealist Plumbing Institute.
(Known to some as Bruce Lane, ARS KC7GR,
kyrrin (a/t) bluefeathertech[d=o=t]calm -- www.bluefeathertech.com
"If Salvador Dali had owned a computer, would it have been equipped
with surreal ports?"

2320. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 16:26:57 UTC
From: Phillip Jockell <philj@xxspearnet.net>
Message-ID: <Xns94B37476F8DC5pj12345pjpj@216.196.97.132>
Source record: 27507
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

Mr. Bean (no disrespect intended),

Well done. Couldn't have said it better myself.

Anecdotaly (sp ?) those very thoughts came to me a couple years
ago when a local Extra class operator (here in the colonies) was
on the two meter repeater desperately looking for someone to
repair his malfunctioning 12 volt DC power supply for him.

His highest-class-license meant nothing. Seems he had memorized
enough to pass his test and had no technical ability at all.
My thoughts at the time were that he was about 9 meters short
of where he belonged.

I know this thread will have a much longer life than it should
and it is close to being off topic (if not entirely), but I
couldn't resist agreeing with you.

73,

Phil - N4GWV

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in news:c3jtq9$27suha$3@ID-
217727.news.uni-berlin.de:

> For those of you who have the necessary technical
> motivation to understand how things work, have become
> interested in Ham Radio but are confused by the
> attitudes and activities of those who are really no
> more than CBers-Masquerading-As-Radio-Hams,
> I append a short article explaining the difference.....

2321. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 16:27:08 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3kggg$29horp$1@ID-217727.news.uni-berlin.de>
Source record: 27509
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

I hear what you say, but I disagree with you.
It is entirely relevant to homebrew, which is the
essence of Ham Radio.

"Michael Black" <et472@FreeNet.Carleton.CA> wrote in message
news:c3kf8u$2gn$1@freenet9.carleton.ca...
> "Airy R. Bean" (airy.r.bean@lycos.co.uk) writes:
> Is there some reason you see fit to cross-post your threads
> to rec.radio.amateur.homebrew?
> Cross-posting is bad enough, but we hardly need to hear how
> amateur radio is a technical hobby when that's the main interest
> of the newsgroup.
> Stay out of rec.radio.amateur.homebrew if all you're doing is
> crossposting Bean.

2322. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 16:31:15 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3kggg$29horp$2@ID-217727.news.uni-berlin.de>
Source record: 27508
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

No. It is not short-sighted. Ham Radio is a technical
pursuit with technical privileges and I wish it to remain so.
Any sitting-on-the-sidelines while the Mongolian hordes
of turnip-brained CBers pour in is ill-advised because the
powers-that-be will come to perceive Ham Radio to have
become indistinguishable from CB Radio and the technical
privileges will be in danger of being withdrawn.

Far from being short-sighted, the viewpoint that I
express is long-sighted.

"Dr. Anton T. Squeegee" <SpammersArePondScum@dev.null> wrote in message
news:MPG.1ac7613ae393f279896bb@192.168.42.131...
> In article <c3jtq9$27suha$3@ID-217727.news.uni-berlin.de>,
> airy.r.bean@lycos.co.uk says...
> > For those of you who have the necessary technical
> > motivation to understand how things work, have become
> > interested in Ham Radio but are confused by the
> > attitudes and activities of those who are really no
> > more than CBers-Masquerading-As-Radio-Hams,
> > I append a short article explaining the difference.....
> For someone who claims such a broad base of knowledge, your
> viewpoint is pretty short-sighted.

2323. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 16:36:09 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3kggh$29horp$3@ID-217727.news.uni-berlin.de>
Source record: 27510
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

I disagree with you there. To welcome and to encourage
newcomers who have already demonstrated their future relevance
by being technically motivated is one thing, but to
swell the ranks, just for the sake of swelling, with those
who are CBers, and who will always remain CBers, and
will never be more than CBers-Masquerading-As-Radio-Hams
is quite another.

BTW, It is CB Radio that is a "hobby". Ham Radio is a technical
pursuit.

"Dr. Anton T. Squeegee" <SpammersArePondScum@dev.null> wrote in message
news:MPG.1ac7613ae393f279896bb@192.168.42.131...
> Amateur radio's real enemy is not those who don't know an
> oscilloscope probe from a soldering pencil. No, the real danger to
> amateur radio comes from those, like you, who display nothing but
> intolerance to newcomers who are interested in the hobby, but who may
> never have picked up a multimeter in their lives.
> So: Instead of responding to newcomers with elitism and arrogance,
> try responding as an "Elmer." Inform them about the purposes behind the
> service, and explain about the responsibilities that a license carries.
> Also explain that the Amateur Radio service, like any other hobby, is a
> mirror: The 'reward' one gets out is directly proportional to what one
> puts into it.

2324. Re: Low-loss toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 16:37:19 UTC
From: Leon Heller <leon_heller@hotmail.com>
Message-ID: <405dcf41$0$10151$cc9e4d1f@news.dial.pipex.com>
Source record: 27515

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:0rsp50pn4gc8idd395qhakrgcl9kqchen9@4ax.com...
> Hi all,
>
> I've been trawling through my various catalogues tonight looking for
> toroids that might be suitable to wind hi-Q inductors around, but am
> disappointed to see that all the stuff on offer seems to be geared
> around interference suppression and is consequently - I assume - very
> lossy material. Does anyone know of a source in the UK that can supply
> small, *low-loss* toroids by the dozen to the hobbyist via mail order?

http://www.sycomcomp.co.uk/

Leon

2325. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 16:37:38 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3kggh$29horp$4@ID-217727.news.uni-berlin.de>
Source record: 27511
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

I don't agree that it is OT. The manufacture of one's
own equipment, "homebrew" is the essence of _REAL_
Ham Radio, and that was reflected in my article.

"Phillip Jockell" <philj@xxspearnet.net> wrote in message
news:Xns94B37476F8DC5pj12345pjpj@216.196.97.132...
> I know this thread will have a much longer life than it should
> and it is close to being off topic (if not entirely), but I
> couldn't resist agreeing with you.

2326. Re: soldering coax shield

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 17:05:56 UTC
From: fmmck@aol.com
Message-ID: <20040321120556.22733.00001799@mb-m10.aol.com>
Source record: 27513

<< I am having a horibble time
soldering
> > the shield of a coax cable to a copper pad in a circuit. I just can't
get
> > the solder to flow on the shield. What can i do? >>

Krem-

Is it possible to twist some of the shield into a sort of wire? If so, you might be able to crimp it to a terminal that can then be soldered. I would think almost any kind of crimp terminal would do. You could use a pair of side-cutting pliers to clip off the excess material from the terminal.

If not, give Radio Shack another chance.

73, Fred, K4DII

2327. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 17:11:34 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <i3jr50l0k9s2opq6gt8fhnaahmteo40t6s@4ax.com>
Source record: 27512

On Sun, 21 Mar 2004 16:02:18 GMT, "W3JDR" <joe@roccis.com> wrote:

>Airy,
>What you said would be relevant only if you were trying to determine circuit
>losses due to "unloaded" Q of the components. I believe Paul is trying to
>determine the 'loaded" Q in order to obtain best selectivity (narrowest
>bandwidth). Is this true Paul?

Some clarification is necessary!
The application is the tank in a frequency multiplier.
I am seeking to select for the 5th harmonic. Therefore, the tank needs
to have as little loss as possible given the fact that the 5th will be
way down dB-wise on the fundamental. I can't afford to attenuate it
too much as it's already weak to begin with. Ergo, I need the lowest
loss components and the best selectivity for the desired 5th harmonic.
Thanks,

p.
--

The BBC: Licensed at public expense to spread lies.

2328. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 17:15:10 UTC
From: k9sqg@aol.com
Message-ID: <20040321121510.26048.00000091@mb-m23.aol.com>
Source record: 27514

High L/C ratio increases Q.

2329. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 17:29:24 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3kjhf$290mid$1@ID-217727.news.uni-berlin.de>
Source record: 27516
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

Mr.Turner's outburst below says, perhaps, more about his own
psyche than he intended to reveal?

There is no "self-centred, holier-than-thou" proclamation
that I am "vastly superior" ..... "to the unwashed masses" in what
I assert.

In my book, _ALL_ comers of whatever race, colour, creed,
occupation, previous pursuits, are welcome to join the technical
pursuit that is Ham Radio, and in so doing, to tackle and pass the
examinations that are set to guarantee technical competence.

Those that demonstrate their technical motivation and competence
are welcome as Radio Hams. Those that lack either attribute are
not Radio hams by any stretch of the imagination.

The mobile phone and the CB transceiver cater for such non-Hams.

"Bill Turner" <noway@nohow.com> wrote in message
news:rejr501ma5t9tk8ln0mad20mjbtfophtqt@4ax.com...
> On Sun, 21 Mar 2004 16:46:51 +0000, Walt Davidson <g3nyy@despammed.com>
> wrote:
> >I hope you will not allow it to happen to you on your side of the
> >"pond"! All the signs are there and the same loud-mouthed agitators
> >are rattling at the gates.
> >:-(
> I hope it doesn't happen here, too. However, Airyhead and his like are
> not the solution to the problem. His (their) self-centered,
> holier-than-thou attitude will only make the CB'ers more strident than
> ever.
> He might be a good technical guy (maybe) but he is a lousy psychologist.
> You can not convince people of the rightness of your cause by
> proclaiming how vastly superior you are to the unwashed masses.

2330. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 17:33:25 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3kjse$29ktk9$1@ID-217727.news.uni-berlin.de>
Source record: 27517

Then it is unloaded Q that you are interested in.

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:i3jr50l0k9s2opq6gt8fhnaahmteo40t6s@4ax.com...
> On Sun, 21 Mar 2004 16:02:18 GMT, "W3JDR" <joe@roccis.com> wrote:
> >Airy,
> >What you said would be relevant only if you were trying to determine
circuit
> >losses due to "unloaded" Q of the components. I believe Paul is trying to
> >determine the 'loaded" Q in order to obtain best selectivity (narrowest
> >bandwidth). Is this true Paul?
> Some clarification is necessary!
> The application is the tank in a frequency multiplier.
> I am seeking to select for the 5th harmonic. Therefore, the tank needs
> to have as little loss as possible given the fact that the 5th will be
> way down dB-wise on the fundamental. I can't afford to attenuate it
> too much as it's already weak to begin with. Ergo, I need the lowest
> loss components and the best selectivity for the desired 5th harmonic.

2331. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 17:34:15 UTC
From: "God's gift to women"
Message-ID: <eEk7c.4998$1h7.32934@newsfep4-glfd.server.ntli.net>
Source record: 27520
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Bill Turner" <noway@nohow.com> wrote in message
news:9pir50t7fi7q3tif0r8f7hd4d1o9rckh3d@4ax.com...
> On Sun, 21 Mar 2004 16:31:15 -0000, "Airyhead R. Bean"
> <airy.r.bean@lycos.co.uk> wrote:
>
> >while the Mongolian hordes
> >of turnip-brained CBers
>
> ____
>
> Your JT QSL card is hereby canceled.
>

You really must excuse Mr Bean, Bill. As you have no doubt worked out, after four years at university, the only thing he has to show for his efforts, is a drinking degree :-(

Regards
tox

2332. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 17:34:59 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3kjsf$29ktk9$2@ID-217727.news.uni-berlin.de>
Source record: 27518

Oops - L/R ISTR!

"K9SQG" <k9sqg@aol.com> wrote in message
news:20040321121510.26048.00000091@mb-m23.aol.com...
> High L/C ratio increases Q.

2333. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 17:44:09 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c3kk99$e89$1@sparta.btinternet.com>
Source record: 27519

Circuit Q = omega*L/R. Reducing L has little or no effect on Q because, after winding L, you will find R has decreased in about the same proportion. The fewer the number of turns, the shorter the length of wire, and the lower the resistance.

The ratio of L to C also has little effect on circuit Q because the intrinsic Q of capacitors is usually an order of magnitude or more greater than Q of L. L and C values of a tuned circuit are usually selected by the reactances required of them at resonance for reasons independent of circuit Q. Eg., the reactance of L and C may be required to be 300 ohms at resonance because other components will have to be connected to them.

Usually it is the value of C which controls the value of L. C may have to be trimmer. If it is a fixed value it will have to conform to a preferred series of values and tolerances. If it is too small it will get lost in stray and other circuit capacitances.

IMPORTANT - Intrinsic Q of a solenoid is directly proportional only to its physical size. Double all dimensions, including wire diameter, and Q is doubled. Its the the amount of space you have which decides the value of Q. And there's a similar relationship even for magnetic cored components. If you havn't got the room then you will have to put up with a low coil Q. And it's always lower than what you think it is. Its impossible to measure in situ. Spice is of no help.

Don't forget that a tuned circuit is never used in isolation. If it is used as a filter in transistor collector circuit then it forms only part of the transistor load. And whatever else is connected will reduce the effective circuit Q. It could be that it doesn't matter what the intrinsic Q of the coil may be provided it is not ridiculously low. Which I suspect to be true in your case. You may be doing your nut about nothing.

To put it crudely, it is seldom that coil Q matters. Nearly always whatever you've got is good enough. If in a particular application you might think it does then you are barking up the wrong tree.

Reg, G4FGQ

2334. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 17:56:39 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <rHk7c.3890$vC.1059@nwrdny03.gnilink.net>
Source record: 27521

Absolutely not!!!!!!!!!!!!!!!!!
He needs best possible loaded Q for maximum selectivity! Good unloaded Q
will help minimuze circuit losses, but won't help with selectivity.

Joe
W3JDR

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in message
news:c3kjse$29ktk9$1@ID-217727.news.uni-berlin.de...
> Then it is unloaded Q that you are interested in.
>
> "Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
> news:i3jr50l0k9s2opq6gt8fhnaahmteo40t6s@4ax.com...
> > On Sun, 21 Mar 2004 16:02:18 GMT, "W3JDR" <joe@roccis.com> wrote:
> > >Airy,
> > >What you said would be relevant only if you were trying to determine
> circuit
> > >losses due to "unloaded" Q of the components. I believe Paul is trying
to
> > >determine the 'loaded" Q in order to obtain best selectivity (narrowest
> > >bandwidth). Is this true Paul?
> > Some clarification is necessary!
> > The application is the tank in a frequency multiplier.
> > I am seeking to select for the 5th harmonic. Therefore, the tank needs
> > to have as little loss as possible given the fact that the 5th will be
> > way down dB-wise on the fundamental. I can't afford to attenuate it
> > too much as it's already weak to begin with. Ergo, I need the lowest
> > loss components and the best selectivity for the desired 5th harmonic.
>
>

2335. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 18:04:05 UTC
From: DLT <***>
Message-ID: <405dd93a.0@entanet>
Source record: 27522
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

Airy R. Bean wrote:
> The CBer reveals himself every time that he opens his mouth.....
>
Oh no, he's wet himself again. NURSE!

2336. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 18:20:01 UTC
From: DLT <***>
Message-ID: <405ddcf7.0@entanet>
Source record: 27523
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

God's gift to women wrote:
> "Bill Turner" <noway@nohow.com> wrote in message
> news:9pir50t7fi7q3tif0r8f7hd4d1o9rckh3d@4ax.com...
>> On Sun, 21 Mar 2004 16:31:15 -0000, "Airyhead R. Bean"
>> <airy.r.bean@lycos.co.uk> wrote:
>>
>>> while the Mongolian hordes
>>> of turnip-brained CBers
>>
>> ____
>>
>> Your JT QSL card is hereby canceled.
>>
>
> You really must excuse Mr Bean, Bill. As you have no doubt worked
> out, after four years at university, the only thing he has to show
> for his efforts, is a drinking degree :-(
>
> Regards
> tox

That's why he keeps wetting himself, every time he opens his mouth.

2337. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 18:50:23 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3ko99$2415m2$1@ID-217727.news.uni-berlin.de>
Source record: 27524

I don't agree. The selection of a harmonic is a
signal processing function and not one of power transfer.

"W3JDR" <joe@roccis.com> wrote in message
news:rHk7c.3890$vC.1059@nwrdny03.gnilink.net...
> Absolutely not!!!!!!!!!!!!!!!!!
> He needs best possible loaded Q for maximum selectivity! Good unloaded Q
> will help minimuze circuit losses, but won't help with selectivity.
>
> "Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in message
> news:c3kjse$29ktk9$1@ID-217727.news.uni-berlin.de...
> > Then it is unloaded Q that you are interested in.
> >
> > "Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
> > news:i3jr50l0k9s2opq6gt8fhnaahmteo40t6s@4ax.com...
> > > I am seeking to select for the 5th harmonic.

2338. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 18:54:19 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c3kocrmsa1@sparta.btinternet.com>
Source record: 27525

Paul, in approaching the problem from your viewpoint havn't you set yourself the task of winding an inductor to have a particular value of Q ?

If you intend to use a solenoid then Q can be increased only by increasing its physical size without changing its proportions too much.

Utimately you will need to know what is the Q of a particular size coil, number of turns, wire gauge, etc. It will be reduced by its proximity to other components and circuit board by some indeterminate amount. I think you should stop and check whether you have room for the coil in the equipment space available. ;o)

Program SOLNOID2 may be of assistance in this onerous task.

Download in a few seconds from website below and run immediately.

....
Regards from Reg, G4FGQ
For Free Radio Design Software go to
http://www.btinternet.com/~g4fgq.regp
....

2339. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 19:17:38 UTC
From: James Meyer <jmeyer@nowhere.com>
Message-ID: <t9qr50lmfm8lcuvtb44tu4o4j0f46s9de2@4ax.com>
Source record: 27526
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Fri, 19 Mar 2004 19:40:01 +0000, Paul Burridge <pb@osiris1.notthisbit.co.uk>
posted this:

>Can I infer from this experience that SMD inductors of over a few uH
>are a waste of time?

ANY part used to perform a function which it is not suited for is a
waste of time. It would be interesting to know which SMD inductors you used
that seemed to eat up the 40 MHz so effectively. I'd be willing to bet that a
quick look at the spec sheet would show why that particular part was a bad
choice for that particular job.

Jim

2340. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 19:19:29 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403211119.2a25348c@posting.google.com>
Source record: 27527

Loaded Q or unloaded Q? If the load is in parallel with the tank and a fixed value, decrease the reactance of the tank elements. If the fixed resistive load is in series with the L and C, increase the reactance of the tank elements. Generally you should design the Q to fit the task. (You could expand on that: generally you should design the circuit to fit the task...)

Unloaded Q is increased by things like using the right core material and right winding techniques. There's not a simple answer. For air-core coils, the larger the coil the higher the Q possible, up to the point where radiation becomes significant. You might hear that helical resonators are very high Q, but actually the same coil in freespace will be higher Q, so long as it's not so large it radiates a lot. Reg has a program that estimates unloaded Q of air-core RF coils.

It's a fairly complex subject...don't expect one answer to fit all situations.

Cheers,
Tom

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message news:<dvbr5055va11osgpbl16mokuhjvnjulq77@4ax.com>...
> Hi guys,
>
> ISTR that one can improve Q in resonant tanks by having a low L-C
> ratio. Or was it high L-C ratio. I can't remember but need to know.
> Can any kind soul help me out? Thanks.
>
> p.

2341. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 19:49:16 UTC
From: G-whiz <no@spam.com>
Message-ID: <405DF1BC.4604E9F3@spam.com>
Source record: 27528
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

Bill Turner wrote:
> proclaiming how vastly superior you are to the unwashed masses.

Ah - I see you've been to a UK radio rally then...

:o)

2342. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 19:51:03 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <Hmm7c.4109$vC.2261@nwrdny03.gnilink.net>
Source record: 27529

"The selection of a harmonic is a signal processing function and not one of power transfer."

Exactly Airy.
The output of the multiplier stage, which contains many frequencies, needs to be processed in order to select the desired component and reject all others to the best extent possible. This is an indirect way of saying you need a very selective tuned circuit.

The selectivity of the tuned circuit is defined by it's loaded Q; ie, the Q of the reactances in network loaded when by their operating environment. This means that for best selectivity, the reactances of the L and C should be as low as possible, which in turn means that the C should be as large as can be achieved, consistent with realizably small L and component (unloaded) Q. Unfortunately, as the ratio of unloaded component Q to loaded circuit Q gets small, the losses go up. This implies that there's a tradeoff to be made between selectivity and loss. Thus it is in the world of real components - in the world of DSP things can be different.

If you want high selectivity, you have to balance it against tolerable circuit losses, at least with real components.

Joe
W3JDR

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in message
news:c3ko99$2415m2$1@ID-217727.news.uni-berlin.de...
> I don't agree. The selection of a harmonic is a
> signal processing function and not one of power transfer.
>
> "W3JDR" <joe@roccis.com> wrote in message
> news:rHk7c.3890$vC.1059@nwrdny03.gnilink.net...
> > Absolutely not!!!!!!!!!!!!!!!!!
> > He needs best possible loaded Q for maximum selectivity! Good unloaded Q
> > will help minimuze circuit losses, but won't help with selectivity.
> >
> > "Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in message
> > news:c3kjse$29ktk9$1@ID-217727.news.uni-berlin.de...
> > > Then it is unloaded Q that you are interested in.
> > >
> > > "Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
> > > news:i3jr50l0k9s2opq6gt8fhnaahmteo40t6s@4ax.com...
> > > > I am seeking to select for the 5th harmonic.
>
>
>

2343. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 20:10:14 UTC
From: Dog <topdog@crufts.co.uk>
Message-ID: <pan.2004.03.21.20.10.13.600182@crufts.co.uk>
Source record: 27530
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

On Sun, 21 Mar 2004 16:36:09 +0000, Airy R. Bean wrote:

>
> BTW, It is CB Radio that is a "hobby". Ham Radio is a technical
> pursuit.
>

It is both, but has unfortunately bean given the wrong image by querulous
sad old gits.

Had any QSLs on negative frequencies yet?

2344. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 20:32:59 UTC
From: g3pho@nospamblueyonder.co.uk
Message-ID: <405dda23.116009244@news.blueyonder.co.uk>
Source record: 27531
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

On Sun, 21 Mar 2004 13:41:00 -0000, "Airy R. Bean"
<airy.r.bean@lycos.co.uk> wrote:

>The CBer reveals himself every time that he opens his mouth.....
>
>"Bill Turner" <noway@nohow.com> wrote in message
>news:lo6r50hhhjvus2fesvufmscgvudj2obt04@4ax.com...
>> Bill, W6WRT
>> 47 years of hamming and still unimpressed
>> by the likes of Airyhead Bean.

You've done it now Bill! You'll be on Airy's blacklist. Expect to be
called "5 year old", "she", "infant". etc etc ... in fact all the
inane claptrap that we have been pestered with since Airy (also known
as Gareth Alun Evans, G4SDW, of Chippenham, England) slipped headfirst
down the "john"...

73 and keep smiling Bill..

Peter, G3PHO

2345. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 22:35:37 UTC
From: Brian Reay <brian.reay@bigfoot.com>
Message-ID: <c3l5c8$28dbqu$1@ID-140397.news.uni-berlin.de>
Source record: 27532
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Bill Turner" <noway@nohow.com> wrote in message
news:c06s50d6t281tjf3491uka3r9tpnin5g53@4ax.com...
> On Sun, 21 Mar 2004 17:29:24 -0000, "Airy R. Bean"
> <airy.r.bean@lycos.co.uk> wrote:
>
> >There is no "self-centred, holier-than-thou" proclamation
> >that I am "vastly superior" ..... "to the unwashed masses" in what
> >I assert.
>
> ____
>
> Of course there is. The fact that you don't see it is the whole point.
>

Actually Bill, the best bit is that "Airy" (real name Gareth) actually shows
very little evidence of having the technical knowledge he likes to claim.

--
73
Brian
G8OSN
www.g8osn.org.uk
www.amateurradiotraining.org.uk for FREE training material for all UK
amateur radio licences
www.phoenixradioclub.org.uk - a RADIO club specifically for those wishing
to learn more about amateur radio

2346. Re: TEK 465 and Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 22:41:01 UTC
From: nico@puntnl.niks
Message-ID: <405e1861.33375942@news.planet.nl>
Source record: 27533
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

Jerry Koniecki <NOspam@my.mailbox> wrote:

>Frank Miles wrote:
>>
>> Tektronix was, during that time, strongly discouraging all new designs from
>> using tantalums. IIRC they had been taken to court over a case in which
>> a 465 'scope (the original, not the plastic follow-ons) had spontaneously
>> ignited and had resulted in an expensive fire. Forensics revealed that
>> a tantalum power-supply bypass cap had started the conflagration. The
>> drive to reduce tantalum usage was driven primarily by this liability issue,
>> more than component cost. If you wanted to use a tantalum, you had to
>> justify its usage to the component/design review committees -- which wasn't
>> difficult if you had good reasons and your design was solid.
>
>Ah ha! I have a 465 (w/DM44) that I purchased in 1978 for personal use
>(no commercial abuse). Shortly after the warranty expired, it would not
>power up.
>I traced the problem to a shorted tantalum filter cap on the +15 volt
>line.
>But of course, it wasn't in the power supply, but rather on one of the
>boards.
>Pain to get to, IIRC.

I can imagine. Tantalum caps are a real pain in the ass. If you
reverse the polarity, they burn right through the PCB after a few
months! We got a board in for repair last week with that problem.
Luckily, everything on the board (yes, even the stickers with the
serial numbers) is self extinguising.

--
Reply to nico@nctdevpuntnl (punt=.)
Bedrijven en winkels vindt U op www.adresboekje.nl

2347. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 22:43:17 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <sb5s50tnqaevaf20uertir142hf1aqgibo@4ax.com>
Source record: 27534
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 21 Mar 2004 19:17:38 GMT, James Meyer <jmeyer@nowhere.com>
wrote:

>On Fri, 19 Mar 2004 19:40:01 +0000, Paul Burridge <pb@osiris1.notthisbit.co.uk>
>posted this:
>
>>Can I infer from this experience that SMD inductors of over a few uH
>>are a waste of time?
>
> ANY part used to perform a function which it is not suited for is a
>waste of time. It would be interesting to know which SMD inductors you used
>that seemed to eat up the 40 MHz so effectively.

Eh? I've *never* used SMD inductors!
--

The BBC: Licensed at public expense to spread lies.

2348. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 22:43:19 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <sm5s50d3csqppe1fepmqvn153vnqkf1fvn@4ax.com>
Source record: 27535

On Sun, 21 Mar 2004 18:54:19 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@ZZZbtinternet.com> wrote:

>Paul, in approaching the problem from your viewpoint havn't you set yourself
>the task of winding an inductor to have a particular value of Q ?
>
>If you intend to use a solenoid then Q can be increased only by increasing
>its physical size without changing its proportions too much.
>
>Utimately you will need to know what is the Q of a particular size coil,
>number of turns, wire gauge, etc. It will be reduced by its proximity to
>other components and circuit board by some indeterminate amount. I think
>you should stop and check whether you have room for the coil in the
>equipment space available. ;o)
>
>Program SOLNOID2 may be of assistance in this onerous task.
>
>Download in a few seconds from website below and run immediately.

Reg, SOLNOID2 has been withdrawn from your site IIRC. I *had* been
using it to great effect, but you presumably made some improvements,
implemented them, and renamed it SOLNOID3 which is what I now use.
Great program!
I'm still none the wiser as to whether it's better to have big-L ||
small C or vice versa, though. :-/
BTW, Reg - can you write a program to work out how I'm going to afford
my Council Tax this year? Thanks! :-)
--

The BBC: Licensed at public expense to spread lies.

2349. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-21 22:43:20 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <k66s50l9topbr0asfj0l67p9s585lgtkip@4ax.com>
Source record: 27536

On Sun, 21 Mar 2004 17:44:09 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@ZZZbtinternet.com> wrote:

>To put it crudely, it is seldom that coil Q matters. Nearly always whatever
>you've got is good enough. If in a particular application you might think it
>does then you are barking up the wrong tree.

Be that as it may, Reg, how satisfied are you that your program
accurately calculates Q in the inductors in which it predicts
characteristics? For example, it is accepted by all (I hope) that
Q(unloaded) is at a maxium when the length of a coil equals its
diameter. Your program doesn't seem to reflect this fact. How come?

p.
--

The BBC: Licensed at public expense to spread lies.

2350. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 01:27:16 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c3lfdk$24c$1@hercules.btinternet.com>
Source record: 27537

Let me clarify. Because Q is largely out of your control, the logical way of circuit design is FIRST OF ALL to allocate a practical, reasonably attainable value of Q to the inductor, taking the SPACE AVAILABLE into account.

Then design the remainder of the circuit around it to meet the required objectives. You really have no alternative.

Choosing a starting value for Q without knowing the inductance depends entirely on experience and visual imagination. But you will find program SOLNOID2 very useful in getting you in the right ballpark - only after you decide on the space and clearance available for a coil.

I'm still toying with the idea of using an oscillator locked to the 5th harmonic. Q and size of the coil don't matter two hoots. And you have all the output you could possibly want.

On second thoughts I would probably have gone about the whole job in an entirely different manner. ;o)

Reg, G4FGQ

2351. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 01:33:30 UTC
From: kludge@panix.com
Message-ID: <c3lfpa$4dc$1@xuxa.iecc.com>
Source record: 27538
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,
rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

exray <dontspamexray@coqui.net> wrote:
>
>I'm sure they are out there but I have never seen one. Can you show me
>a consumer grade WWV/WWVH synchronized clock?

Heathkit made one for ages.
--scott

--
"C'est un Nagra. C'est suisse, et tres, tres precis."

2352. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 01:46:20 UTC
From: averyfineman@aol.com
Message-ID: <20040321204620.23171.00004749@mb-m05.aol.com>
Source record: 27539

In article <i3jr50l0k9s2opq6gt8fhnaahmteo40t6s@4ax.com>, Paul Burridge
<pb@osiris1.notthisbit.co.uk> writes:

>On Sun, 21 Mar 2004 16:02:18 GMT, "W3JDR" <joe@roccis.com> wrote:
>
>>Airy,
>>What you said would be relevant only if you were trying to determine circuit
>>losses due to "unloaded" Q of the components. I believe Paul is trying to
>>determine the 'loaded" Q in order to obtain best selectivity (narrowest
>>bandwidth). Is this true Paul?
>
>Some clarification is necessary!
>The application is the tank in a frequency multiplier.
>I am seeking to select for the 5th harmonic. Therefore, the tank needs
>to have as little loss as possible given the fact that the 5th will be
>way down dB-wise on the fundamental. I can't afford to attenuate it
>too much as it's already weak to begin with. Ergo, I need the lowest
>loss components and the best selectivity for the desired 5th harmonic.
>Thanks,

Design of that is a two-step process. First, you need to establish
the impedance (or admittance) of both source and load. For a
parallel-resonant circuit selectivity device, they are both in parallel
with the unloaded Q of the resonant circuit. For a series-resonant
selectivity device, they are in series with it.

With vacuum tube and FET circuits, staying in the linear I/O bias
region, the first step is easy. Just parallel drain or plate resistance
and a gate or grid circuit resistance for a parallel-resonant circuit.
With bipolar transistors, the base resistance is quite low compared
to tube (valve) and gate inputs, must be impedance-magnitude
adjusted such as with tapping down on an inductor. There are
several other ways to do impedance-magnitude adjustment; that
coil tap is a very common one.

Once into a non-linear operation region the overall impedances
become dynamic rather than static and depend on drive level and
the amount of time an input spends in non-linear region versus the
linear region. Using digital logic devices means that the non-linear
regions are above saturation and below cutoff but the saturation
does not behave the same as with valve grid current run positive
on part of the cycle. That is NOT easy to calculate and quite
complex for those who take the time to do that.

For home workshop design efforts in getting to the task in the
most expeditious way, simply Cut And Try. Reg Edwards

pointed that out semi-directly. :-)

The second step is to select and inductor with, for your needs in being selective to that elusive 5th harmonic, of the highest Q_u (unloaded or "not in-circuit" quality factor) that will fit in the space (physical space) you've alloted. That selection is a compromise in size - cylindrical or "solenoid" cores mean (as Reg said) the bigger the better. I'll also add "the bigger the wire diameter, the higher the Q" for the same coil former size. For iron powder toroid forms, the powder mix is important as well as the size as well as the wire size.

Just from memory of a few years ago, a Micrometals T37-6 core (the "37" meaning 0.37 or 3/8ths inch, powder mix 6) will yield a Q_u of 80 minimum at 18 MHz using the largest wire that will fit through the center hole. Q_u at 17 MHz will be very close to that.

Unloaded Q is a result of many factors and all of those can be modified by things such as the dielectric material of a solenoidal former and the presence of adjacent shielding and even dielectric material. For the easiest application and less time worrying nit-picky details, pick an iron powder core toroidal form...such can be smaller than cylindrical formers allow and are much more forgiving of adjacent/nearby objects. But only if space is at a premium. Small toroidal forms can be difficult to wind for some and multi-turn inductors need lots of wire which can build up in the center hole, precluding use of larger magnet wire diameters.

Part of the second step is to combine what you know (or guess) in the first step with a selection of inductance and capacitance for resonance. As others have said, inductive Q_u is the determining factor at HF and capacitive Q_u will be at least 10 times higher, probably in the neighborhood of 500 to 1000 for ceramic or mica capacitors. Do a quick model of the resonant circuit "resistance" (actually the magnitude of impedance) at parallel resonance - parallel the (inductive Q_u times inductive reactance) and the (capacitive Q_u times the same reactance since capacitive reactance is equal to inductive reactance at resonance). Parallel that with the source and load impedance magnitude combined magnitude and you have the total magnitude at resonance. This can be very quick to do with a scientific pocket calculator.

To verify the selectivity, run the whole thing again at adjacent harmonics to get the total magnitude of impedance there. Those off-resonance L-C circuit magnitudes can use just the reactance as an approximate step and be very close to those using the unloaded L-C Qs. The ratio of magnitudes on-resonance versus off-resonance will give you a picture of the selectivity possible.

If that "doesn't seem to be good," THEN pick a different L:C ratio and do it again...but use what you know about the inductive

Q_u at that different inductance. Compare the new on-resonance
impedance magnitude to the adjacent off-resonance magnitudes.
Is that magnitude ratio worse than before? If so use an opposite
L:C ratio. If better, try the same-direction different L:C ratio and
compare that. If better, repeat. If worse, hold on the previous
L-C combination...you are zeroing-in on what is useful.

SELECTIVITY is the thing desired in your application and the
relatively-simple calculation of magnitudes and resulting ratios
will point in the right direction for something to try in hardware.
Selectivity is needed because the lower harmonics have more
energy than the 5th.

If stumped for a starting L and C value, try the literature on
previous multiplier designs as a starting point...then dance
through this two-step procedure.

In practical hardware, many others besides myself have been
led astray by simplistic "L:C ratio Q determination rules" that
can be just the reverse. Lots of those old maxims were
generated way back in time of large "coils and condensers"
one needed both hands to pick up...

Len Anderson
retired (from regular hours) electronic engineer person

2353. Re: WWVB decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 01:47:42 UTC
From: Dennis <Howdy.Doody@howdydoody.net>
Message-ID: <c3lgju$7h7$1@xuxa.iecc.com>
Source record: 27540
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc, rec.radio.broadcasting,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.swap

```
In article <c3jb4i$6e8$1@xuxa.iecc.com>, dontspamexray@coqui.net says...
>
>
>Dennis wrote:
>
>>
>> You're right a wwv or wwvh clock both receive and decode
>> the same manner. Both wwv and wwvh transmit at 2.5, 5. 10, 15, & 20Mhz.
>> There is no 60Khz on Kiuai.
>>
>> Dennis
>>
>>>
```

2354. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 01:58:07 UTC
From: Tam/WB2TT <t-tammaru@c0mca$t.net>
Message-ID: <ppOdncLw5pKx1cPd4p2dnA@comcast.com>
Source record: 27541
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul,

I probably should have included more details. A fellow I was working with was trying to extract a clock signal from a synchronous data stream, and was getting nowhere. We swept the frequency back and forth to be sure he was tuned to resonance - he was. Changed the ceramic cap to mica, and everything worked like a charm. We never analyzed why the ceramic did not work, but I suspect it was because of the capacitance vs. applied voltage dependence. If the cap had 6VDC on it, and he had a few mv of RF, I expect it would have worked. Instead, he had 0 bias, and a couple of Volts p-p signal.

BTW, somebody mentioned powdered iron toroids. Sounds like a good idea.

Tam

2355. TOKO Inductors

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 03:16:16 UTC
From: Tom <terwin3@bellsouth.net>
Message-ID: <5Os7c.61008$xL3.53885@bignews1.bellsouth.net>
Source record: 27542

Hi,
Anyone know of a good place in the USA to buy TOKO inductors? I am looking
for these Part numbers:
BKANK3333R,3334R,3335R
Thanks Tom

2356. Re: TOKO Inductors

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 03:32:05 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <V6t7c.58010$po.544213@attbi_s52>
Source record: 27543

"Tom" <terwin3@bellsouth.net> wrote in message
news:5Os7c.61008$xL3.53885@bignews1.bellsouth.net...
> Hi,
> Anyone know of a good place in the USA to buy TOKO inductors? I am looking
> for these Part numbers:
> BKANK3333R,3334R,3335R

DigiKey

1-800-digi-key

W4ZCB

2357. Re: TOKO Inductors

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 03:44:37 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <Fit7c.4415$tY6.128951@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27544

"Tom" <terwin3@bellsouth.net> wrote in message
news:5Os7c.61008$xL3.53885@bignews1.bellsouth.net...
> Hi,
> Anyone know of a good place in the USA to buy TOKO inductors? I am looking
> for these Part numbers:
> BKANK3333R,3334R,3335R
> Thanks Tom

DigiKey carries some Toko inductors but they don't list yours. The Toko
America site has no search engine. The way those part numbers are formatted
is BKAN K333R, etc, I believe. What was their original intended use (CB
radio, TV)? That may guide you to a source.

"PM"

2358. Re: soldering coax shield

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 03:50:12 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <fdos50d0kuvajlo3k2c69s2inqclk234j6@4ax.com>
Source record: 27545
Cross-posted to:
alabama.birmingham.radio.amateur,alt.ham-radio.vhf-uhf,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

On Sun, 21 Mar 2004 08:53:50 GMT "krem" <news@rkremser.endjunk.com>
wrote:

>Thats what i found out today. That its all RG6 locally ex. homedepto
>radioshack. I can't seem to find any other sources (i'm at lehigh
>university in PA in case anyone is close) I only need at most 2 feet of
>this. Would anyone be able to ship me some if i were to cover shipping or
>think of an alternative. I have a 2.4 ghz wireless network up right now
>which i need to attach a home made antenna to. Aside from the antenna and
>wireless transmitter all i have right now are f-connectors and a lot of rg6.
>The antenna and card are still connectorless. I"m open to any solutions
>some one may have.

I'm sure I could send you several feet of RG-59 if all you need is
some 75 Ohm coax with copper braid. If you need a different impedance
I can probably come up with just about anything else that's common.

OTOH, I'm not familiar with RG-6. Is this the stuff the cable TV folks
use? Is it a braid or foil shield? If it's foil, there's usually a
copper shield drain wire that you can solder to.

Email me with your address and what you need if you need some
different coax.

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA

2359. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 04:26:35 UTC
From: James Meyer <jmeyer@nowhere.com>
Message-ID: <lhqs50t1stemc9912l2ec8tifa65s4rspv@4ax.com>
Source record: 27546
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 21 Mar 2004 22:43:17 +0000, Paul Burridge <pb@osiris1.notthisbit.co.uk>
posted this:

>On Sun, 21 Mar 2004 19:17:38 GMT, James Meyer <jmeyer@nowhere.com>
>wrote:
>
>>On Fri, 19 Mar 2004 19:40:01 +0000, Paul Burridge <pb@osiris1.notthisbit.co.uk>
>>posted this:
>>
>>>Can I infer from this experience that SMD inductors of over a few uH
>>>are a waste of time?
>>
>> ANY part used to perform a function which it is not suited for is a
>>waste of time. It would be interesting to know which SMD inductors you used
>>that seemed to eat up the 40 MHz so effectively.
>
>Eh? I've *never* used SMD inductors!

Sorry. When you said "this experience" I thought you meant "my
experience".

Carry on.

Jim

2360. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 04:26:57 UTC
From: "Dr. Anton T. Squeegee" <SpammersArePondScum@dev.null>
Message-ID: <MPG.1ac80aece65b11b89896be@192.168.42.131>
Source record: 27447
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

In article <c3kggg$29horp$2@ID-217727.news.uni-berlin.de>,
airy.r.bean@lycos.co.uk says...

<top-posting corrected ... Please don't top-post!>

> "Dr. Anton T. Squeegee" <SpammersArePondScum@dev.null> wrote in message

> > For someone who claims such a broad base of knowledge, your
> > viewpoint is pretty short-sighted.

> No. It is not short-sighted. Ham Radio is a technical
> pursuit with technical privileges and I wish it to remain so.

Well, that's fine. You can, in your own way, make your
participation in amateur radio as technical as you want.

HOWEVER -- Technical pursuits are NOT the only reason the SERVICE
exists. You apparently did not take my advice to read the material at
the links I provided on Part 97 of the FCC regs, more specifically the
section which defines what the amateur service is. Had you done so, you
would have read that there's a lot more than the technical side
involved.

> Any sitting-on-the-sidelines while the Mongolian hordes
> of turnip-brained CBers pour in is ill-advised because the
> powers-that-be will come to perceive Ham Radio to have
> become indistinguishable from CB Radio and the technical
> privileges will be in danger of being withdrawn.

<blink>

You know, up until you made that utterly inaccurate and utterly
loony statement, I was under the impression that you could be
reasonable.

> Far from being short-sighted, the viewpoint that I
> express is long-sighted.

You are, of course, entitled to your opinion. I would, however,
point out that the "Mongolian hordes" (are we being racist now as well?)
have been "pouring in" for the last several decades.

While there has been a noticeable (and, IMO, lamentable) decline
in the number of tinkerers, as it were, amateur radio is still around,
and I think it will continue to be around for many moons to come.

For the sake of avoiding newsgroup clutter, I will no longer
debate these points with you. It is apparent that you do not care enough
to take Part 97 (or whatever its UK equivalent is) seriously.

God help whatever newcomer asks you an 'elmer' type question about
amateur radio...

PLONK!

--
Dr. Anton T. Squeegee, Director, Dutch Surrealist Plumbing Institute.
(Known to some as Bruce Lane, ARS KC7GR,
kyrrin (a/t) bluefeathertech[d=o=t]calm -- www.bluefeathertech.com
"If Salvador Dali had owned a computer, would it have been equipped
with surreal ports?"

2361. Re: Nova-686

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 04:58:37 UTC
From: bunnydawg <r.heenan@sympatico.ca>
Message-ID: <bru7c.5596$re.490896@news20.bellglobal.com>
Source record: 27448

Yes the site appears to be gone/down but try this site you might find a
useful program.
http://www.audioscientific.com/Circuit%20Simulators.htm
Robert
VE3 something or other
"Chuck" <wa7rai@raibeam.com> wrote in message
news:QbQrb.4815$3z5.392@okepread02...
> Does anyone in this group have
> a copy of Nova-686, a freeware
> circuit modeling program?
>
> The website, nova2002.com
> is no longer on the web.
>
> tnx, de Chuck, WA7RAI
>
> email:
> wa7rai at cox dot net.
>
>
>
>
>
>
>
>

2362. Re: Nova-686

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 06:52:04 UTC
From: crusty@TAKETHISOUT.lsmo.sytes.net
Message-ID: <s43t505ck233gcjj4aggj6dpld4itgi71k@4ax.com>
Source record: 27449

Dude! Check your calendar. This request was posted November 10, 2003.

On Sun, 21 Mar 2004 23:58:37 -0500, "bunnydawg" <r.heenan@sympatico.ca> wrote:

>Yes the site appears to be gone/down but try this site you might find a
>useful program.
>http://www.audioscientific.com/Circuit%20Simulators.htm
>Robert
>VE3 something or other
>"Chuck" <wa7rai@raibeam.com> wrote in message
>news:QbQrb.4815$3z5.392@okepread02...
>> Does anyone in this group have
>> a copy of Nova-686, a freeware
>> circuit modeling program?
>>
>> The website, nova2002.com
>> is no longer on the web.
>>
>> tnx, de Chuck, WA7RAI
>>
>> email:
>> wa7rai at cox dot net.
>>
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2363. Re: Restoring the status quo of Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 07:05:06 UTC
From: "jim.gm4dhj" <jim.gm4dhj@ntlworld.com>
Message-ID: <cdw7c.277$Aa.145@newsfe2-gui.server.ntli.net>
Source record: 27450
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in message
news:c3i0rt$26nsi8$1@ID-217727.news.uni-berlin.de...
> The only exception to the attributes of the KW2000
> which I'd modify is the 200kHz wide bands.

I think they were copying Collins.....

2364. Re: TEK 465 and Re: Tantalum caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 08:30:04 UTC
From: and7@bigfoot.com
Message-ID: <6a624601.0403220030.681afaad@posting.google.com>
Source record: 27451
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair,sci.electronics.design

Jerry Koniecki <NOspam@my.mailbox> wrote in message news:<405BB05A.F3483ED4@my.mailbox>...
> Frank Miles wrote:
> >
>..snippety...
>
> BTW, I did not get option 5 (TV sync separator). I wonder if it is
> feasable to
> install it myself? Documentation is listed as 465 option 5 supplement
> 070-2191-00.
> Anyone have this info?

Yes, you can install it youself. The OPt.5 is a small extra board,
basically a video clamp circuit. There is a small ek special IC on the
board, but when you analyze the circuit you will recognize that a quad
op-amp of gain-BW > 5 MHz will work well.
At least at mine it does so.

Scopes with option 5 have a differnt front panel layout. So, you might
get in trouble to realize this with your non-opt5 scope.
But basically: Yes, it can be field installed.

hth,
Andreas

2365. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 08:36:23 UTC
From: Jedi <jedi@nospamhere>
Message-ID: <405ea588$0$6542$cc9e4d1f@news-text.dial.pipex.com>
Source record: 27452
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in message
news:c3jtq9$27suha$3@ID-217727.news.uni-berlin.de...

<snip>

"Ham Radio" is for amateurs. That's why it's called Amateur Radio.

Airy Bean, like most folks on this NG, is a radio_AMATEUR. Unlike most
folks on this NG he has little of any consequence to help or assist other
(or prospective) radio amateurs.

J.

2366. Re: Low-loss toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 13:18:56 UTC
From: Mike Czuhajewski <wa8mcq@comcast.net>
Message-ID: <o_2dnR8HVLY7esPdRVn-uA@comcast.com>
Source record: 27453

For years Amidon was pretty much the only place hams bought ferrite and powdered iron cores. A different company sprang up a few years back, composed of some former Amidon associates as well as former Amidon employees, and they are selling the same things. (Their reasons for going out on their own involves, I believe, discontent with their relationships with their former company, something which is hardly uncommon in the business world.)

The name is Bytemark, or more properly CWS Bytemark, since it merged with CWS a while back.

The URL is http://www.bytemark.com/ and the site has a lot of technical info on the toroids.

At least one of them is a ham, Tracy Markham, N4LGH, who was the driving force behind the original Bytemark. He's a homebrewer and was active on the QRP mail reflector for a few years.

2367. Disk capacitor value question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 15:38:18 UTC
From: J Shrum <shrumj@madisontelco.com>
Message-ID: <woednSRrcJBDlcLdRVn-gw@shawneelink.net>
Source record: 27454

I spent the morning parusing google groups, and found many different answers for the same question.

What I'm trying to understand is; on a disk capacitor that is labeled 560, common sense would tell me 56pf instead of 560pf since 561 on a cap would be 560pf.

Many have asked, but no one ever gave a definate answer. Can anyone give me a definate answer on this?

Thanks for the assistance

James Shrum
KC9FFX

2368. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 15:55:10 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <cm1u509au7pbogoudtimlnavo91tdv1c6l@4ax.com>
Source record: 27455
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 21 Mar 2004 20:58:07 -0500, "Tam/WB2TT"
<t-tammaru@c0mca$t.net> wrote:

>Paul,
>
>I probably should have included more details. A fellow I was working with
>was trying to extract a clock signal from a synchronous data stream, and was
>getting nowhere. We swept the frequency back and forth to be sure he was
>tuned to resonance - he was. Changed the ceramic cap to mica, and everything
>worked like a charm. We never analyzed why the ceramic did not work, but I
>suspect it was because of the capacitance vs. applied voltage dependence. If
>the cap had 6VDC on it, and he had a few mv of RF, I expect it would have
>worked. Instead, he had 0 bias, and a couple of Volts p-p signal.

Yes, ceramics are *hopeless* for tuned circuits; I wouldn't trust the
black tipped ones, either. You can't beat silver mica but they're a
bit hard to find and expensive.

>BTW, somebody mentioned powdered iron toroids. Sounds like a good idea.

Indeed. I'm looking into it.
--

The BBC: Licensed at public expense to spread lies.

2369. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 15:55:12 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <9c2u50dv6d7giia682mjtes3e1uegpcg1u@4ax.com>
Source record: 27456

On 22 Mar 2004 01:46:20 GMT, averyfineman@aol.com (Avery Fineman)
wrote:

[snip]

Phew! Thanks, Len. There's rather more to these ''simple inductors"
than meets the eye, it seems. :(
--

The BBC: Licensed at public expense to spread lies.

2370. Re: Disk capacitor value question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 16:33:04 UTC
From: John <noaddress@noaddress.invalid>
Message-ID: <WJWdnSAS1bxRiMLd4p2dnA@comcast.com>
Source record: 27457

"J Shrum" <shrumj@madisontelco.com> wrote in message
news:woednSRrcJBDlcLdRVn-gw@shawneelink.net...
> I spent the morning parusing google groups, and found many different
answers
> for the same question.
>
> What I'm trying to understand is; on a disk capacitor that is labeled 560,
> common sense would tell me 56pf instead of 560pf since 561 on a cap would
be
> 560pf.
>
> Many have asked, but no one ever gave a definate answer. Can anyone give
me
> a definate answer on this?
>
> Thanks for the assistance
>
> James Shrum
> KC9FFX
>
>

See the following:

http://www.ramseyelectronics.com/support/default.asp?page=kbg&pagenum=4

John

2371. Re: Disk capacitor value question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 16:46:12 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <105u62ka69kr9ea@corp.supernews.com>
Source record: 27459

"J Shrum" <shrumj@madisontelco.com> wrote in message
news:woednSRrcJBDlcLdRVn-gw@shawneelink.net...
> I spent the morning parusing google groups, and found many different
answers
> for the same question.
>
> What I'm trying to understand is; on a disk capacitor that is labeled 560,
> common sense would tell me 56pf instead of 560pf since 561 on a cap would
be
> 560pf.
>
> Many have asked, but no one ever gave a definate answer. Can anyone give
me
> a definate answer on this?
>
> Thanks for the assistance
>
> James Shrum
> KC9FFX
>
>

I have capacitors marked "330" that are 33pF, and capacitors marked "330"
that are 330pF. If it's xx1, xx2, etc., then you can trust it, but if it's
xx0 and you don't know that manufacturer's numbering scheme then you should
measure it!

2372. Re: Low-loss toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 16:46:26 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <s06u50hleg3hsddqop70gqjiikcom3a88o@4ax.com>
Source record: 27458

On Mon, 22 Mar 2004 08:18:56 -0500, "Mike Czuhajewski"
<wa8mcq@comcast.net> wrote:

Useful site! I've gleaned some handy formulae from it, but since
they're an American outfit, I've actually ordered via the company Leon
kindly pointed me to.
Thanks all.

--

The BBC: Licensed at public expense to spread lies.

2373. Re: Disk capacitor value question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 16:47:15 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <Tg80byATixXAFAjc@ifwtech.co.uk>
Source record: 27476

J Shrum wrote:
>Many have asked, but no one ever gave a definate answer. Can anyone
>give me a definate answer on this?
>
The only definite answer is: both numbering systems are in use, so it
could be either value.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

2374. Re: Disk capacitor value question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 17:09:12 UTC
From: J Shrum <shrumj@madisontelco.com>
Message-ID: <rtadndUSCvG3g8Ld4p2dnA@shawneelink.net>
Source record: 27460

I guess that explains why I've seen 30 different answers :))

Thanks for the quick response. Guess I gotta score a C meter.

Thanks again

"Tim Wescott" <tim@wescottnospamdesign.com> wrote in message
news:105u62ka69kr9ea@corp.supernews.com...
>
> "J Shrum" <shrumj@madisontelco.com> wrote in message
> news:woednSRrcJBDlcLdRVn-gw@shawneelink.net...
> > I spent the morning parusing google groups, and found many different
> answers
> > for the same question.
> >
> > What I'm trying to understand is; on a disk capacitor that is labeled
560,
> > common sense would tell me 56pf instead of 560pf since 561 on a cap
would
> be
> > 560pf.
> >
> > Many have asked, but no one ever gave a definate answer. Can anyone give
> me
> > a definate answer on this?
> >
> > Thanks for the assistance
> >
> > James Shrum
> > KC9FFX
> >
> >
>
> I have capacitors marked "330" that are 33pF, and capacitors marked "330"
> that are 330pF. If it's xx1, xx2, etc., then you can trust it, but if
it's
> xx0 and you don't know that manufacturer's numbering scheme then you
should
> measure it!
>
>

2375. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 17:45:04 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3nb2r$2akul4$2@ID-217727.news.uni-berlin.de>
Source record: 27462
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

You behave like a 5-year old.

<g3pho@nospamblueyonder.co.uk> wrote in message
news:405dda23.116009244@news.blueyonder.co.uk...
>> You've done it now Bill! You'll be on Airy's blacklist. Expect to be
> called "5 year old", "she", "infant". etc etc ... in fact all the
> inane claptrap that we have been pestered with since Airy (also known
> as Gareth Alun Evans, G4SDW, of Chippenham, England) slipped headfirst
> down the "john"...

2376. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 17:46:44 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3nb2s$2akul4$3@ID-217727.news.uni-berlin.de>
Source record: 27463
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

I wonder what was Mr.Reay's purpose in publishing
his rather silly and somewhat infantile attention
seeking outburst that is quoted from him below?

Was it to demonstrate that not only is he a _LOSER_,
but that he is well aware of the fact?

Was it to demonstrate that anybody who holds, or who
has ever held, an M3/CB Fools' Licence can never be
a _REAL_ Radio Ham because of the associated
gentlemanly traditions?

Was it to demonstrate the really big mistake that was made
when the gangrenous degeneration that is the M3/CB Fools'
Licence was introduced?

Was it a further Freudian Slip on his part showing that
the insecurity that he holds to be in every _REAL_ Radio
Ham is a part of every fibre of his being and that he is
trying to make himself feel better by blurting out some
playground-style insults?

Was it to demonstrate that his sneering 'n' jeering in
the company and style of so many of the toilet-mouthed
gutter-denizens of this NG makes him a CBer fair and square?

Was it to divert attention away from a style of debate that
can at best be described as, spin-doctoring, side-stepping,
bullshitting and downright lying?

Was it to demonstrate that the RSCB, of whose politbureaux
he is a significant member, has degenerated into a
cesspit of CBers and is no longer relevant to Ham Radio?

Was it to make a fool of himself in front of Victoria,
Rebecca and Michaela when the time comes that he is no longer
able to censor their Usenet access, and they get to see
what a hypocrite he is by comparing his behaviour against
the standards that he imposes on them as they grow up?

Was it to demonstrate that despite his _BOASTS_ of being in
possession of a number of degrees that he is incapable of
stringing two or more words together in a civil and rational
discussion?

Was it to demonstrate that once again, having sneered 'n'
jeered in the CB fashion he is going to run away when
challenged?

Was it because he was annoyed that his gaffe in stating
that e^(-jwt) was a function that decreased with increasing time
was so well publicised, and he wanted to stamp his tiny little
foot in a pique of anger?

"Brian Reay" <brian.reay@bigfoot.com> wrote in message
news:c3l5c8$28dbqu$1@ID-140397.news.uni-berlin.de...
> Actually Bill, the best bit is that "Airy" (real name Gareth) actually
shows
> very little evidence of having the technical knowledge he likes to claim.

2377. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 17:47:05 UTC
From: Shaven Granulate <nope@privacy.net>
Message-ID: <Xns94B4B43DAA24FShevaAlaneGrunt@130.133.1.4>
Source record: 27461
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Jedi" <jedi@nospamhere> wrote in
news:405ea588$0$6542$cc9e4d1f@news-text.dial.pipex.com:

> "Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in message
> news:c3jtq9$27suha$3@ID-217727.news.uni-berlin.de...
>
> <snip>
>
> "Ham Radio" is for amateurs. That's why it's called
> Amateur Radio.
>
> Airy Bean, like most folks on this NG, is a radio_AMATEUR.
> Unlike most folks on this NG he has little of any
> consequence to help or assist other (or prospective) radio
> amateurs.

.....which goes against the true spirit that has taken
amateur radio to it's present position.

If the pioneers in the 1920s who did the first amateur
transmissions had adopted the same opinions and stand-points
as Gareth, we'd have got nowhere.

Long may he sit and rule his own empire. Thankfully that
empire ends at his front door except for his publicity machine
that is the internet.

2378. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 17:47:24 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3nb2s$2akul4$4@ID-217727.news.uni-berlin.de>
Source record: 27465
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

WRONG!

"Dr. Anton T. Squeegee" <SpammersArePondScum@dev.null> wrote in message
news:MPG.1ac80aece65b11b89896be@192.168.42.131...
> HOWEVER -- Technical pursuits are NOT the only reason the SERVICE
> exists.

2379. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 17:48:19 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3nb2t$2akul4$5@ID-217727.news.uni-berlin.de>
Source record: 27466
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

If you wish to make some point in debate, then make it
yourself. I'm not going to go away and learn up on
your failings, OM!

"Dr. Anton T. Squeegee" <SpammersArePondScum@dev.null> wrote in message
news:MPG.1ac80aece65b11b89896be@192.168.42.131...
> You apparently did not take my advice to read the material at
> the links I provided on Part 97 of the FCC regs, more specifically the
> section which defines what the amateur service is. Had you done so, you
> would have read that there's a lot more than the technical side
> involved.

2380. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 17:49:46 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3nb2t$2akul4$6@ID-217727.news.uni-berlin.de>
Source record: 27464
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

The Childish Broadcaster (CBer) quoted below reveals himself every time
that he resorts to personal remarks.

Shame on you.

Ham Radio has traditions of gentlemanly conduct.

"Dr. Anton T. Squeegee" <SpammersArePondScum@dev.null> wrote in message
news:MPG.1ac80aece65b11b89896be@192.168.42.131...
> You know, up until you made that utterly inaccurate and utterly
> loony statement, I was under the impression that you could be
> reasonable.

2381. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 17:51:28 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3nb2t$2akul4$7@ID-217727.news.uni-berlin.de>
Source record: 27467
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

Close your mind to the infestation that is the turnip-brained CBer
and the disease will spread.

"Dr. Anton T. Squeegee" <SpammersArePondScum@dev.null> wrote in message
news:MPG.1ac80aece65b11b89896be@192.168.42.131...
> For the sake of avoiding newsgroup clutter, I will no longer
> debate these points with you. It is apparent that you do not care enough
> to take Part 97 (or whatever its UK equivalent is) seriously.
> God help whatever newcomer asks you an 'elmer' type question about
> amateur radio...
> *PLONK!*

2382. Re: Nova-686

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 18:08:22 UTC
From: bunnydawg <r.heenan@sympatico.ca>
Message-ID: <k%F7c.9391$re.707661@news20.bellglobal.com>
Source record: 27468

Darn. I deleted all my headers for the newsgroups so i'm sort of starting
them again. Didn't notice the date on the post. I'll smack my computer
later because i know it's the computers fault lol.
Robert
VE3 something or other.

<crusty@TAKETHISOUT.lsmo.sytes.net> wrote in message
news:s43t505ck233gcjj4aggj6dpld4itgi71k@4ax.com...
> Dude! Check your calendar. This request was posted November 10, 2003.
>
>
> On Sun, 21 Mar 2004 23:58:37 -0500, "bunnydawg" <r.heenan@sympatico.ca>
wrote:
>
> >Yes the site appears to be gone/down but try this site you might find a
> >useful program.
> >http://www.audioscientific.com/Circuit%20Simulators.htm
> >Robert
> >VE3 something or other
> >"Chuck" <wa7rai@raibeam.com> wrote in message
> >news:QbQrb.4815$3z5.392@okepread02...
> >> Does anyone in this group have
> >> a copy of Nova-686, a freeware
> >> circuit modeling program?
> >>
> >> The website, nova2002.com
> >> is no longer on the web.
> >>
> >> tnx, de Chuck, WA7RAI
> >>
> >> email:
> >> wa7rai at cox dot net.
> >>
> >>
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> >>
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> >>
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>

2383. Re: Disk capacitor value question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 18:48:22 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403221048.641e045@posting.google.com>
Source record: 27469

It's sad but true that some manufacturers use "560" to indicate 56pF
and some use "560" to indicate 560pF. I've fretted over this same
thing in the past. I have examples of both. Fortunately, the trend
seems to be toward the usage that, as you say, is common sense. Too
bad it has not been universal.

Cheers,
Tom

"J Shrum" <shrumj@madisontelco.com> wrote in message
news:<woednSRrcJBDlcLdRVn-gw@shawneelink.net>...
> I spent the morning parusing google groups, and found many different answers
> for the same question.
>
> What I'm trying to understand is; on a disk capacitor that is labeled 560,
> common sense would tell me 56pf instead of 560pf since 561 on a cap would be
> 560pf.
>
> Many have asked, but no one ever gave a definate answer. Can anyone give me
> a definate answer on this?
>
> Thanks for the assistance
>
> James Shrum
> KC9FFX

2384. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 18:48:43 UTC
From: Leigh <news@leighs.org>
Message-ID: <Xns94B4BEB009003Ifartusmeltit@130.133.1.4>
Source record: 27470
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in
news:c3nb2s$2akul4$4@ID-217727.news.uni-berlin.de:

> WRONG!
>
> "Dr. Anton T. Squeegee" <SpammersArePondScum@dev.null>
> wrote in message
> news:MPG.1ac80aece65b11b89896be@192.168.42.131...
>> HOWEVER -- Technical pursuits are NOT the only reason the
>> SERVICE exists.

Gareth - do us all a _FAVOUR_ - take your silly little
squabbles to email. Shows true usenet netiquette.

There's a good girl.

--

#!/bin/sh {who;} {last;} {pause;} {grep;} {touch;} {unzip;}
mount /dev/girl -t {wet;} {fsck;} {fsck;} {fsck;} {fsck;} echo
yes yes yes {yes;} umount {/dev/girl;zip;} rm -rf {wet.spot;}
{sleep;} finger: permission denied

2385. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 18:49:57 UTC
From: Leigh <news@leighs.org>
Message-ID: <Xns94B4BEE5BE18lfartusmeltit@130.133.1.4>
Source record: 27471
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in
news:c3nb2t$2akul4$6@ID-217727.news.uni-berlin.de:

> The Childish Broadcaster (CBer) quoted below reveals
> himself every time that he resorts to personal remarks.
>
> Shame on you.
>
> Ham Radio has traditions of gentlemanly conduct.

How dumb are you dumbo?

I see you're trapped in an usenet argument corner, so you've
pulled the Airy-Arse book of old cliches out have you?

>
> "Dr. Anton T. Squeegee" <SpammersArePondScum@dev.null>
> wrote in message
> news:MPG.1ac80aece65b11b89896be@192.168.42.131...
>> You know, up until you made that utterly inaccurate and
>> utterly loony statement, I was under the impression that
>> you could be reasonable.
>
>
>

--

#!/bin/sh {who;} {last;} {pause;} {grep;} {touch;} {unzip;}
mount /dev/girl -t {wet;} {fsck;} {fsck;} {fsck;} {fsck;} echo
yes yes yes {yes;} umount {/dev/girl;zip;} rm -rf {wet.spot;}
{sleep;} finger: permission denied

2386. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 18:50:44 UTC
From: Leigh <news@leighs.org>
Message-ID: <Xns94B4BF082C2EBIfartusmeltit@130.133.1.4>
Source record: 27472
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in
news:c3nb2t$2akul4$7@ID-217727.news.uni-berlin.de:

> Close your mind to the infestation that is the
> turnip-brained CBer and the disease will spread.

You're wasting your broadband connection and ISP time now
Gareth - the guy ain't listening to your loony claptrap
anymore.

> "Dr. Anton T. Squeegee" <SpammersArePondScum@dev.null>
> wrote in message
> news:MPG.1ac80aece65b11b89896be@192.168.42.131...
>> For the sake of avoiding newsgroup clutter, I will no
>> longer debate these points with you. It is apparent that
>> you do not care enough to take Part 97 (or whatever its UK
>> equivalent is) seriously. God help whatever newcomer asks
>> you an 'elmer' type question about amateur radio...
>> *PLONK!*
>
>
>
>

--

#!/bin/sh {who;} {last;} {pause;} {grep;} {touch;} {unzip;}
mount /dev/girl -t {wet;} {fsck;} {fsck;} {fsck;} {fsck;} echo
yes yes yes {yes;} umount {/dev/girl;zip;} rm -rf {wet.spot;}
{sleep;} finger: permission denied

2387. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 19:06:44 UTC
From: mcalhoun@ksu.edu
Message-ID: <c3ndg4$ctd@unix1.cc.ksu.edu>
Source record: 27473
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

I tried to "reply", but your inbox was full!

>>....[snip]....
>>Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge.

>Hey Doc. Should that quote be attributed to you or what?

Yes, at least mostly, 'Way back when email first started (with long
strings of !...!...! in the addresses), I had "Three boxes..." (altho
I don't recall just which three). Shortly thereafter, someone suggested
a fourth box and someone else the fifth, and I was lucky enough to be
able to condense all five boxes into the one line I've used ever since.

--Myron.
--
Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge
PhD EE (retired). "Barbershop" tenor. CDL(PTXS). W0PBV. (785) 539-4448
NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle, Pistol)

2388. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 19:10:12 UTC
From: Graham W <grahamw93@myprivacy.net>
Message-ID: <0SG7c.1823$Qc.380@newsfe5-gui.server.ntli.net>
Source record: 27474
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

"Airy R. Bean" <airy.r.bean@lycos.co.uk> wrote in message
news:c3nb2s$2akul4$3@ID-217727.news.uni-berlin.de...
> I wonder what was Mr.Reay's purpose in publishing
> his rather silly and somewhat infantile attention
> seeking outburst that is quoted from him below?
>
> Was it to demonstrate that not only is he a _LOSER_,
> but that he is well aware of the fact?

If you are ever lucky enough to meet Dr Reay then you will learn why he posts the odd jibe at you. While you are directing your bile at him it goes into his kill file and he ignores you knowing that newcomers will see you as the nasty bit of work your are. That means the M3 are left alone and you do less harm. Brian isn't the sort of man to be worried by a toe rag like you.

More power to your elbow Brian

GW

2389. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 19:13:36 UTC
From: Dog <topdog@crufts.co.uk>
Message-ID: <pan.2004.03.22.19.13.03.167208@crufts.co.uk>
Source record: 27475
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

On Mon, 22 Mar 2004 17:49:46 +0000, the Has-Bean wrote:

> The Childish Broadcaster (CBer) quoted below reveals himself every time
> that he resorts to personal remarks.
>

Then in another post

>Was it to demonstrate that not only is he a _LOSER_,
>but that he is well aware of the fact?

You _ARE_ that CBer!

2390. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 19:22:50 UTC
From: averyfineman@aol.com
Message-ID: <20040322142250.07984.00001208@mb-m22.aol.com>
Source record: 27477

In article <9c2u50dv6d7giia682mjtes3e1uegpcg1u@4ax.com>, Paul Burridge
<pb@osiris1.notthisbit.co.uk> writes:

>On 22 Mar 2004 01:46:20 GMT, averyfineman@aol.com (Avery Fineman)
>wrote:
>
>[snip]
>
>Phew! Thanks, Len. There's rather more to these ''simple inductors"
>than meets the eye, it seems. :(

Yes, but it probably took longer to write the procedure out than
to actually do it. :-)

As a _starting_ procedure, work with magnitudes of impedance,
or the square-root of the sums of the squares of resistance and
reactance. That's easy enough on a conventional "four-function"
pocket calculator that has the added square-root function.

For a single resonant circuit you should be interested in the ratio
of magnitude at desired frequency to the magnitudes at the
undesired frequency. The bigger the ratio, the better selectivity.

If you want to investigate toroidal coils (for their smaller size), you
can find Q curves at - http://www.amidoncorp.com. Those look
exactly like the Q curves in my Micrometals Q Curve subsection
of their (surface mail only) catalog. Under one of the links at the
top right you will get a rather long html page with over a dozen
curves on it representing over a half dozen typical inductors per
graph over a wide frequency range. Save that page if you can,
it is good for reference later.

www.micrometals.com seems to be down on Monday, probably
for website revision; haven't heard any rumors that Micrometals
went out of business. Micrometals has foreign (to the USA)
distributors and sales reps so I was hoping to show some of
those in or near the UK.

For cylindrical coil shapes, Reg Edwards program is about as
good as it gets to save wear and tear on pencil and paper.

Len Anderson
retired (from regular hours) electronic engineer person.

2391. Re: Low-loss toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 19:22:51 UTC
From: averyfineman@aol.com
Message-ID: <20040322142251.07984.00001209@mb-m22.aol.com>
Source record: 27478

In article <o_2dnR8HVLY7esPdRVn-uA@comcast.com>, "Mike Czuhajewski"
<wa8mcq@comcast.net> writes:

>For years Amidon was pretty much the only place hams bought ferrite and
>powdered iron cores. A different company sprang up a few years back,
>composed of some former Amidon associates as well as former Amidon
>employees, and they are selling the same things. (Their reasons for going
>out on their own involves, I believe, discontent with their relationships
>with their former company, something which is hardly uncommon in the
>business world.)
>
>The name is Bytemark, or more properly CWS Bytemark, since it merged with
>CWS a while back.
>
>The URL is http://www.bytemark.com/ and the site has a lot of technical info
>on the toroids.
>
>At least one of them is a ham, Tracy Markham, N4LGH, who was the driving
>force behind the original Bytemark. He's a homebrewer and was active on the
>QRP mail reflector for a few years.

Amidon Associates started up in Burbank, CA, in 1963 as a small
business by Bill Amidon, then with NBC at the NBC western Hq
complex in Burbank. The product was small-quantity reselling of
Micrometals powdered-iron and Fair-Rite ferrite products, packed
one to a few in small plastic bags found on display racks in hobby
electronics stores.

Micrometals was begun in 1951 in Orange County (just south of
Los Angeles County that includes Burbank). Micrometals is a
powdered-iron product manufacturer who sells in large minimum
quantities. Micrometals is also the origin of the Q curves (found in
limited quantity in Amidon packets) and the part number format that
so many now associate with Amidon. Micrometals doesn't sell
directly to hobbyists (unless they order a minimum quantity) but
Amidon Associates did/does. Amidon reselling was and is a good
service for hobbyists.

It is my understanding (but no proof) that Bill Amidon was a ham.
His name doesn't appear on a QRZ search. For a part-time
business started 40 years ago, Amidon Associates changed
addresses a couple times and seems to have been purchased by
another group and turned into "Amidon Corporation." That company
has a website at http://www.amidoncorp.com and you can find
many, many Q curves (good for reference) on one of their inernal

pages plus a lot of data good for planning powdered-iron toroid or ferrite applications. Amidon Corporation is headquartered in Costa Mesa, CA, and claims it has "manufacturing" (probably like a lot of distributors claim pseudo-ownership of the companies on their product card). They will sell small quantities of forms, wire, 3M tapes, teflon tubing, the older Amidon Associated kits, etc., and have an 800 number listed "for hams."

Yes, CWS Bytemark exists also, headquartered in Santa Ana, CA. [all the powdered-iron companies have gravitated to Orange County? :-)] Under the "Parent Company" there, it comes out that Coil Winding Specialists owns them and deals or resells a number of frequency products, some of them from Asian manufacturing locations.

I'm not going to delve into "business practices." Such doesn't have any bearing on "Low Loss Toroids." I do know that Amidon Associates had a very handy and useful service for hobbyists (myself included) in reselling Micrometals products. I do know that Micrometals has a quality product after specifying orders from them at work. The original Micrometals toroidal form ID format has now assumed a "Texas Instrument" kind of status in that many others use their same nomenclature...like "7400" is a quad 2-input NAND logic IC package identifier to all regardless of who actually made it. :-)

Len Anderson
retired (from regular hours) electronic engineer person

2392. Re: Disk capacitor value question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 19:51:46 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c3ng83deb1@newshost.mot.com>
Source record: 27479

"J Shrum" <shrumj@madisontelco.com> wrote in message
news:rtadndUSCvG3g8Ld4p2dnA@shawneelink.net...
> I guess that explains why I've seen 30 different answers :))
>
> Thanks for the quick response. Guess I gotta score a C meter.

Or a resistor and sig generator ... either sine or square wave can be used
with the proper technique.
--
Steve N, K,9;d, c. i My email has no u's.

2393. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-22 21:09:39 UTC
From: Active8 <reply2group@ndbbm.net>
Message-ID: <7dild0gxh9ni.dlg@news.individual.net>
Source record: 27480
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 22 Mar 2004 13:06:44 -0600, mcalhoun wrote:

> I tried to "reply", but your inbox was full!

Uh, it used to be ".invalid" but until I gat this blasted new
newsreader to allow me to use that, I dunno. Maybe example.org.
Maybe a sneakemail addy I can throw away when it gets spammed to
hell so at least some people can backchannel me for the real addy if
I think they need it.
>
>>>....[snip]....
>>>Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge.
>
>>Hey Doc. Should that quote be attributed to you or what?
>
> Yes, at least mostly, 'Way back when email first started (with long
> strings of !...!...! in the addresses), I had "Three boxes..." (altho
> I don't recall just which three). Shortly thereafter, someone suggested
> a fourth box and someone else the fifth, and I was lucky enough to be
> able to condense all five boxes into the one line I've used ever since.
>
> --Myron.

Ok. Duly noted. Maybe Myron Calhoun, et. al. ?

--
Best Regards,
Mike

2394. Re: soldering coax shield

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 01:05:07 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403221705.5c0fd125@posting.google.com>
Source record: 27481
Cross-posted to:
alabama.birmingham.radio.amateur,alt.ham-radio.vhf-uhf,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

I could mail you some, but there's bound to be someone closer that
could get it to you faster.

Another option: crimp on an "F" connector and solder an F socket to
the board (perhaps with short wire leads, if the frequency isn't too
high).

You can also get solder that works on aluminum, but that might well
take longer than getting coax with copper braid. BTW, I have Teflon
RG-6-type that has solderable braid (plus foil).

Cheers,
Tom

"krem" <news@rkremser.endjunk.com> wrote in message
news:<047666b632301d5e9fb3a2edcd28de90@news.teranews.com>...
> "Tam/WB2TT" <t-tammaru@c0mca$t.net> wrote in message
> news:y-udnX_SCs0s_8HdRVn-ig@comcast.com...
> >
> > "krem" <news@rkremser.endjunk.com> wrote in message
> > news:65768d4fb60d9fe61338d27a4aff8e75@news.teranews.com...
> > > Hello, in need of some urgent help. I am having a horibble time
> soldering
> > > the shield of a coax cable to a copper pad in a circuit. I just can't
> get
> > > the solder to flow on the shield. What can i do? I don't know if it
> > > matters but the shield has the appeareance of aluminium. I"m hoping
> this
> > > isn't what it is but really dont' know. Please help. Thanks in advance
> > >
> > >
> > Are you trying to solder RG6? Easiest fix is to go buy a piece of RG59, if
> > you need 75 Ohm coax, or almost any 50 Ohm coax. I gather there is no wire
> > braid over the Al foil.
> >
> > Tam/WB2TT
> >
> >
>
> Thats what i found out today. That its all RG6 locally ex. homedepto
> radioshack. I can't seem to find any other sources (i'm at lehigh
> university in PA in case anyone is close) I only need at most 2 feet of
> this. Would anyone be able to ship me some if i were to cover shipping or
> think of an alternative. I have a 2.4 ghz wireless network up right now

> which i need to attach a home made antenna to. Aside from the antenna and
> wireless transmitter all i have right now are f-connectors and a lot of rg6.
> The antenna and card are still connectorless. I"m open to any solutions
> some one may have. thanks in advance

2395. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 02:24:38 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <105v7vain7l8vd6@corp.supernews.com>
Source record: 27482
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge wrote:
>
> Yes, ceramics are *hopeless* for tuned circuits; I wouldn't trust the
> black tipped ones, either. You can't beat silver mica but they're a
> bit hard to find and expensive.

I strongly disagree with this. I've successfully used ceramic capacitors many times for both high and low Q tuned circuits from HF to UHF. Years ago, I found that NPO ceramics were decidedly superior to silver micas for temperature stability, so I use them exclusively for VFO tank circuits.

You might have come across some bad parts. Or perhaps you don't realize that many different types of ceramic are used for making capacitors. Three general classes are most common. The "general purpose" class (something of a misnomer) is a very high-k ceramic used for capacitors of Z5U, Y5V and similar types. Those are very good for bypassing because of their small physical size, but terrible for nearly anything else. They're microphonic, hygroscopic, piezoelectric, and highly temperature and voltage dependent.

Another class is used for X7R and related types, sometimes called "stable". These are much more stable in all respects, but are physically larger due to the lower dielectric constant (k) of the ceramic. They're suitable for a wider variety of uses, but still not for high Q tuned circuits. They should be used in low Q circuits only after evaluating the potential effects of temperature and voltage dependence, at the least.

The third common class is used for making capacitors with near-zero temperature coefficients, such as C0G (formerly and still often called NPO). These *are* an excellent choice for tuned circuit applications, and are often better than silver mica (whose temperature coefficient and Q are variable and unpredictable). They're sometimes identified with a black dot -- on "dog bone" capacitors, it's on one end.

Many years ago I published an article describing a stable, VFO controlled QRP transceiver which used NPO ceramic capacitors for the oscillator tank. Scattered feedback indicated that some people had gotten "NPO" capacitors from less-than-reliable vendors and were experiencing an objectionable amount of frequency drift. That didn't happen with name-brand parts. So there are some flakey capacitors out there. If you need to depend on the quality, get name brand parts from a reputable vendor. And you'll find that NPO ceramics are a very good choice for tuned circuits.

Roy Lewallen, W7EL

2396. Re: Disk capacitor value question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 02:30:51 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <105v8aul8uciee@corp.supernews.com>
Source record: 27483

Tom Bruhns wrote:

> It's sad but true that some manufacturers use "560" to indicate 56pF
> and some use "560" to indicate 560pF. I've fretted over this same
> thing in the past. I have examples of both. Fortunately, the trend
> seems to be toward the usage that, as you say, is common sense. Too
> bad it has not been universal.

Me, too. I solved the problem some time ago by picking up a really cheap DMM that measures capacitance as an extra feature. I'm sure it's not super precise, but it can easily tell the difference between 56 and 560 pF. My capacitors are sorted by decade in plastic drawers. Questionable ones get checked before going into (or back into) the drawer, so from then on I can tell which it is by which drawer it's in.

Roy Lewallen, W7EL

2397. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 05:03:58 UTC
From: Tam/WB2TT <t-tammaru@c0mca$t.net>
Message-ID: <xMudneRq9v-lWMLdRVn-hQ@comcast.com>
Source record: 27484
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Roy,

We were talking about bypass type ceramics. See the 3/20 10:13AM posting.
BTW, I think with SM you are pretty much forced into using ceramics.

Tam/WB2TT

2398. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 06:01:47 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403222201.5520ca7b@posting.google.com>
Source record: 27485

Of course, maybe you don't need such a high Q, Paul. Qu of 30 is
quite reasonable for small SMT RF inductors, at least the type I use.
In the following list, "series" means in series from the gate output
to the next gate input, in order, and "shunt" means shunt to ground at
that point. Anyway, try this (build it or SPICE it or RFSim99
it...add resistors to any simulation to account for the Qu. I'd
suggest 3 ohms series and 12k ohms shunt for each 1.8uH.)

47pF series
1.8uH series
470pF shunt
45pF series
1.8uH shunt
3.3pF series
40pF shunt
1.8uH shunt
DC blocking cap series
high-value DC bias resistors, and the gate input (I assumed to be
about 4k net resistance to ground at the gate input, including the
bias resistors).

It should give you enough voltage gain at 18MHz to drive the second
gate at the fifth harmonic, and should attenuate the third at least
50dB if you build it properly, even with low-ish Qu inductors. This
is rather a "hack" circuit, but works. The premise is that it's
easier to get three inductors all the same value than muck about
tuning the inductors. Make the 47pF, 45pF and 40pF caps variable and
you can peak up the response at your desired frequency. Your
simulation should show a reasonably flat bandpass characteristic,
centered at about 18MHz.

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:<dvbr5055va11osgpbl16mokuhjvnjulq77@4ax.com>...
> Hi guys,
>
> ISTR that one can improve Q in resonant tanks by having a low L-C
> ratio. Or was it high L-C ratio. I can't remember but need to know.
> Can any kind soul help me out? Thanks.
>
> p.

2399. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 09:41:09 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <10601hocgvoml01@corp.supernews.com>
Source record: 27486
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Tam/WB2TT wrote:
> Roy,
>
> We were talking about bypass type ceramics. See the 3/20 10:13AM posting.
> BTW, I think with SM you are pretty much forced into using ceramics.
>
> Tam/WB2TT

Perhaps you were talking about bypass type ceramics, but the posting I responded to:

>
> Yes, ceramics are *hopeless* for tuned circuits; I wouldn't trust the
> black tipped ones, either. You can't beat silver mica but they're a
> bit hard to find and expensive.

made no such qualification, and even specifically mentioned "black tipped" (usually NPO) capacitors.

As far as I know, silver micas are getting pretty rare, except maybe for very high power, high current RF applications, if they're being used for even that any more. I doubt if they exist as surface mount parts. The reason silver micas are hard to find and expensive is that they've been made obsolete for nearly all applications by generally superior ceramic types.

Roy Lewallen, W7EL

2400. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 10:24:50 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <VsW1zKAyBBYAFwKR@ddwyer.demon.co.uk>
Source record: 27491

In article <9c2u50dv6d7giia682mjtes3e1uegpcg1u@4ax.com>, Paul Burridge
<pb@osiris1.notthisbit.co.uk> writes
>On 22 Mar 2004 01:46:20 GMT, averyfineman@aol.com (Avery Fineman)
>wrote:
>
>[snip]
>
>Phew! Thanks, Len. There's rather more to these ''simple inductors"
>than meets the eye, it seems. :(
I note that the "Q" of capacitors when specified is much higher than the
specified value for Ls.
Unloaded Q will give maximum selectivity but no power transfer.
Optimum power transfer will be at q/2 which will only increase bandwidth
x 2, (i think but am not)
--
ddwyer

2401. Re: soldering coax shield

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 11:05:41 UTC
From: ablight@alphalink.com.au
Message-ID: <1fc7b362.0403230305.10f75da5@posting.google.com>
Source record: 27487
Cross-posted to:
alabama.birmingham.radio.amateur,alt.ham-radio.vhf-uhf,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0403221705.5c0fd125@posting.google.com>...
> I could mail you some, but there's bound to be someone closer that
> could get it to you faster.
>
> Another option: crimp on an "F" connector and solder an F socket to
> the board (perhaps with short wire leads, if the frequency isn't too
> high).
>
> You can also get solder that works on aluminum, but that might well
> take longer than getting coax with copper braid. BTW, I have Teflon
> RG-6-type that has solderable braid (plus foil).
>
> Cheers,
> Tom
>
>
> "krem" <news@rkremser.endjunk.com> wrote in message
news:<047666b632301d5e9fb3a2edcd28de90@news.teranews.com>...
> > "Tam/WB2TT" <t-tammaru@c0mca$t.net> wrote in message
> > news:y-udnX_SCs0s_8HdRVn-ig@comcast.com...
> > >
> > > "krem" <news@rkremser.endjunk.com> wrote in message
> > > news:65768d4fb60d9fe61338d27a4aff8e75@news.teranews.com...
> > > > Hello, in need of some urgent help. I am having a horibble time
> soldering
> > > > the shield of a coax cable to a copper pad in a circuit. I just can't
> get
> > > > the solder to flow on the shield. What can i do? I don't know if it
> > > > matters but the shield has the appeareance of aluminium. I"m hoping
> this
> > > > isn't what it is but really dont' know. Please help. Thanks in advance
> > > >
> > > >
> > > Are you trying to solder RG6? Easiest fix is to go buy a piece of RG59, if
> > > you need 75 Ohm coax, or almost any 50 Ohm coax. I gather there is no wire
> > > braid over the Al foil.
> > >
> > > Tam/WB2TT
> > >
> > >
> >

> > Thats what i found out today. That its all RG6 locally ex. homedepto
> > radioshack. I can't seem to find any other sources (i'm at lehigh
> > university in PA in case anyone is close) I only need at most 2 feet of
> > this. Would anyone be able to ship me some if i were to cover shipping or
> > think of an alternative. I have a 2.4 ghz wireless network up right now
> > which i need to attach a home made antenna to. Aside from the antenna and
> > wireless transmitter all i have right now are f-connectors and a lot of rg6.
> > The antenna and card are still connectorless. I"m open to any solutions
> > some one may have. thanks in advance

If its RG6 then it does have a continuity wire, you have probably
nicked it off in stripping back the outer sheath. The best given so
far suggestion is to use a twist on "F" connecctor - unless you can
borrow the proper crimping tool for crimp connectors. BTW, cable
losses at 2.4GHz will be astronomical, virtually nothing will be
getting up to the antenna. - or is it 2 feet from the card, then
acceptable. Even so, RG6 has the only virtue of being cheap, with
highly variable quality. have a talk to the engineering department at
school (if there is one) or do a internet search for a local 802.11
group near you, they are usually glad to assist in these cases. If you
have lots of money, get a USB wireless card and put it on the back of
the antenna, you can then run heaps of cable out and so get it to a
high spot.
73 de VK3BFA Andrew

2402. Re: Disk capacitor value question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 11:10:40 UTC
From: Brian <brianNADA@NOiquestSPAM.net>
Message-ID: <QWU7c.53347$aT1.12695@newsread1.news.pas.earthlink.net>
Source record: 27488

My favorite meter is the LC Meter IIB sold by AADE as a kit.

Does a good job measuring Capacitance and Inductance...the L meter is REAL handy when you're tearing apart VCR's and old TV's for parts scrounging!

http://www.aade.com

It's a hand-held, digital

Inductor inductance meter
Capacitor capacitance meter
with a four digit display,
a maximum resolution of 1 nHy / .01 pF
a maximum range of 150 mHy / 1.5 uF.
The unit features
AUTOMATIC RANGING and SELF-CALIBRATION.
"It is a solder it together and it works kit."

2403. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 12:04:53 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <uo9060ho228cgfu7gg8f536eckif76napn@4ax.com>
Source record: 27489

On 22 Mar 2004 22:01:47 -0800, k7itm@aol.com (Tom Bruhns) wrote:

[filter spec snipped]
>It should give you enough voltage gain at 18MHz to drive the second
>gate at the fifth harmonic, and should attenuate the third at least
>50dB if you build it properly, even with low-ish Qu inductors. This
>is rather a "hack" circuit, but works. The premise is that it's
>easier to get three inductors all the same value than muck about
>tuning the inductors. Make the 47pF, 45pF and 40pF caps variable and
>you can peak up the response at your desired frequency. Your
>simulation should show a reasonably flat bandpass characteristic,
>centered at about 18MHz.

Thanks, Tom! You're even more indefatigable than I am, by the look of
it. I shall look into it...

--

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2404. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 12:28:46 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <u9b060t24vtbd4no7pnpo4b2n7d5sq05vg@4ax.com>
Source record: 27490

On 22 Mar 2004 22:01:47 -0800, k7itm@aol.com (Tom Bruhns) wrote:

>Of course, maybe you don't need such a high Q, Paul. Qu of 30 is
>quite reasonable for small SMT RF inductors, at least the type I use.
>In the following list, "series" means in series from the gate output
>to the next gate input, in order, and "shunt" means shunt to ground at
>that point. Anyway, try this (build it or SPICE it or RFSim99
>it...add resistors to any simulation to account for the Qu. I'd
>suggest 3 ohms series and 12k ohms shunt for each 1.8uH.)

Thanks, Tom. I've simulated the filter and posted the plot result to
abse. Looks promising. See if it meets your expectations....

p.
--

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2405. Re: Disk capacitor value question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 13:48:49 UTC
From: Hans Summers <hans.summers@tudor.com>
Message-ID: <c3pf84$2a2t21$1@ID-61331.news.uni-berlin.de>
Source record: 27492

"J Shrum" <shrumj@madisontelco.com> wrote in message
news:woednSRrcJBDlcLdRVn-gw@shawneelink.net...
> I spent the morning parusing google groups, and found many different
answers
> for the same question.
>
> What I'm trying to understand is; on a disk capacitor that is labeled 560,
> common sense would tell me 56pf instead of 560pf since 561 on a cap would
be
> 560pf.
>
> Many have asked, but no one ever gave a definate answer. Can anyone give
me
> a definate answer on this?
>
> Thanks for the assistance

I agree with everyone else James...

having said that, I don't have a C meter myself and I use a lot of components recycled from old boards, and I've never yet had a problem. In fact I've never even thought about it, I just rely on intuition. Seems to work Ok. I suspect there are a number of subconscious variables that go into this, like the nature and function of the circuit it came from, and probably most important, what does the capacitor look like! How big is it, what shape is it (how fat etc)., and how this compares to some other capacitors found of supposedly similar value which are unambiguously marked.

73

Hans
G0UPL
http://www.HansSummers.com

2406. Wire Wrap Wire (WWW?)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 14:10:34 UTC
From: brokebob@aol.com
Message-ID: <20040323091034.26909.00000181@mb-m21.aol.com>
Source record: 27493

Anyone know where I can come by some 30 ga wire wrap wire? I am being told that that is old technology. Gee whiz, I am old!

Bob
brokebob@aol.com (broke=not working, retired=not working, retired=broke)

2407. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 14:44:30 UTC
From: kensmith@violet.rahul.net
Message-ID: <c3pigeveq1@blue.rahul.net>
Source record: 27494
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

In article <xMudneRq9v-lWMLdRVn-hQ@comcast.com>,
Tam/WB2TT <t-tammaru@c0mca$t.net> wrote:
>Roy,
>
>We were talking about bypass type ceramics. See the 3/20 10:13AM posting.
>BTW, I think with SM you are pretty much forced into using ceramics.

Cornell Dubilier / Waldom makes surace mount siler mico caps. You can
get them from Digikey for under $10 US.

You can get standard PPS film capacitors from several makers. If you
don't mind the fact that they are very touchy and have a higher failure
rate they may be an option. If you want a little better, you can buy the
more costly coated ones.

I wouldn't say that you are forced into using ceramic. It is an option
you may perfer.

--
--
kensmith@rahul.net forging knowledge

2408. Re: Wire Wrap Wire (WWW?)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 14:57:40 UTC
From: xpyttl <xpyttl_NOSPAM@earthling.net>
Message-ID: <1060kd799hv38e6@corp.supernews.com>
Source record: 27495

Would you believe - Radio Shack.

They only have three colors, though.

..

"Brokebob" <brokebob@aol.com> wrote in message
news:20040323091034.26909.00000181@mb-m21.aol.com...
> Anyone know where I can come by some 30 ga wire wrap wire? I am being
told
> that that is old technology. Gee whiz, I am old!
>
> Bob
> brokebob@aol.com (broke=not working, retired=not working, retired=broke)

2409. Re: radio receiver "alignment"

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 16:39:36 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <7mp0609n0r6aorfqtsh8orv2hadmg677ne@4ax.com>
Source record: 27496
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Tue, 23 Mar 2004 14:25:14 GMT, John Hall
<wweexxsseessssaa@telus.net> wrote:

>I remember years ago my dad's friend had been fiddling with his radio
>because it didn't work right, he "found some screws loose in those
>little cans, so tightened them all down". Strangely, that didn't
>improve things.

:-)
It's the first thing a lot of folks seem to do when they get the back
off a radio, isn't it?

--

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2410. Re: radio receiver "alignment"

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 16:39:59 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <j2q060ttk6acrg6ls9ovck0fsfgude2uk9@4ax.com>
Source record: 27397
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Tue, 23 Mar 2004 12:29:26 GMT, john_c@tpg.com.au (John Crighton)
wrote:

> I am the type that likes to use test equipment as laid
>down by the alignment instructions in the book. My
>workmate always achieved better results than me.
>He would say to me "Can't you hear that the tone
>just doesn't sound right?" I couldn't hear what
>he was on about. So we used to have a good laugh
>about my bench having signal generators to cover
>455KHz, 10.7 Mhz and the desired UHF channel.
> Oscilloscope, noise and distortion meter,
>frequency meter and dummy load/power meter,
>modulation meter. If there was a spectrum analyser
>available I would have a play with that too.
>I just liked playing with the gear. My work mate got
>far more two-way radios fixed and out the door than
>I ever did. He was good. He had the ear for it and
>magic hands.

Hi John,

Some people just seem to have an almost supernatural ability to do
this with virtually no technical knowledge. I can't begin to tell you
the extraordinary feats I've seen done IRO radio mods and tweaks by
people who shouldn't, by any reasonable measure, have had an earthly
clue about what they were doing!
--

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2411. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 16:49:22 UTC
From: Jeff Liebermann <jeffl@comix.santa-cruz.ca.us>
Message-ID: <9to060ht0sfpjt8rvsgbo9483vm34h03al@4ax.com>
Source record: 27398
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 23 Mar 2004 14:44:30 +0000 (UTC), kensmith@violet.rahul.net
(Ken Smith) wrote:

>In article <xMudneRq9v-lWMLdRVn-hQ@comcast.com>,
>Tam/WB2TT <t-tammaru@c0mca$t.net> wrote:
>>Roy,
>>
>>We were talking about bypass type ceramics. See the 3/20 10:13AM posting.
>>BTW, I think with SM you are pretty much forced into using ceramics.
>
>Cornell Dubilier / Waldom makes surace mount siler mico caps. You can
>get them from Digikey for under $10 US.

The CDE "MC" series of cazapitors are "mica", not "silver mica". The
difference is that silver mica caps have to be sealed (dipped) or the
silver plating reacts with everything. I'm not sure what plating is
used for the "MC" series of surface mount mica. My guess(tm) is
aluminum.
http://www.cornell-dubilier.com/mica/mica.htm
http://www.cornell-dubilier.com/film/hmc.htm
http://www.cornell-dubilier.com/catalogs/MC.pdf

The big advantages of silver mica is stability, wide temp range, very
low dissipation, and tolerance to over voltage spikes. Many years
ago, I wasted a month working over an HF xmitter, trying to design out
the expensive silver mica and porcelain cazapitors and replace them
with cheaper ceramics. It was possible for the low power drivers but
a waste of time in areas that had high RF currents or required good
stability. A similar cost reduction exercise was also being done on
the automagic antenna tuner (by someone else) with similar results.
The project ended when someone suggested using high temp silver solder
to prevent the ceramic caps from reflowing their solder connections
and falling off the board.

I guess(tm) the reason that silver mica caps are difficult to find is
that there are few companies producing high power RF products as
compared to the huge number of low power RF products. It's not a big
market that probably can only support a few specialty component
vendors.

--
Jeff Liebermann 150 Felker St #D Santa Cruz CA 95060
(831)421-6491 pgr (831)336-2558 home
http://www.LearnByDestroying.com AE6KS
jeffl@comix.santa-cruz.ca.us jeffl@cruzio.com

2412. best architecture for a homebrewed single-station FM broadcast dx receiver?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 17:19:41 UTC
From: alanh_27@yahoo.com
Message-ID: <c3prjd$b6f$1@xuxa.iecc.com>
Source record: 27399
Cross-posted to: rec.radio.broadcasting,sci.electronics,rec.radio.amateur.homebrew

a city I visit frequently -or more precisely, it's exurban outskirts - has only one mellow-Jazz FM-broadcast station, the only one for many hundreds of miles.

thus I have decided to build my own single-station hi-performance receiver to get the one station.

I know enough to know that ideally, the bulk of the gain, directionality, selectivity should be at the antenna itself. Or even more to the point, tower height. At least ideally. And hi-performance single FM channel yagi's are easily spec'd from a number of antenna houses. So that issue is not being placed on this table.

The rest of the gain budget is.

Let the discussions begin. For example, what approach do the known "name" receivers (Kloss Model One, GE Super Radio) use? can a homebrewer do better?
Which commercial house builds the best resonant chambers for the 108 Mhz frequency? Can be be done easily at home? how about the demodulation and audio portions?

2413. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 17:37:44 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403230937.78f49b95@posting.google.com>
Source record: 27400
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Roy Lewallen <w7el@eznec.com> wrote in message
news:<105v7vain7l8vd6@corp.supernews.com>...
> Paul Burridge wrote:
> >
> > Yes, ceramics are *hopeless* for tuned circuits; I wouldn't trust the
> > black tipped ones, either. You can't beat silver mica but they're a
> > bit hard to find and expensive.
>
> I strongly disagree with this. I've successfully used ceramic capacitors
> many times for both high and low Q tuned circuits from HF to UHF. Years
> ago, I found that NPO ceramics were decidedly superior to silver micas
> for temperature stability, so I use them exclusively for VFO tank circuits.

...

In agreement and support of what Roy wrote, I'd toss out some
additional notes:

o I've seen (been the vicitm of?) silvered micas that exhibit random
tiny jumps in capacitance, which is a really bad thing in oscillators.

o You can get X7R dielectric SMT caps in SMT up to at least 0.1uF in
0603 size, for low voltage ratings. See manufacturers' data sheets
for the largest currently available values. I suspect reliability
suffers if you try to use ones with too high a C*V/unit volume,
though.

o As someone recently pointed out to me (Sphero, I think it was), you
can get C0G up to 0.1uF in SMT--I think he said in 1206 size.

o It's possible to get 1% C0G caps.

o A C0G is probably about the cheapest electronic component you'll
find with a maximum 30ppm/C temperature coefficient (though beware,
some C0Gs I've seen are rated up to 60ppm/C).

o There are special high-Q ceramics that are better than standard
C0Gs for use at microwave frequencies...generally above 1GHz.

Cheers,
Tom

2414. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 17:50:56 UTC
From: Fred Bartoli <fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo>
Message-ID: <4060791b$0$292$636a15ce@news.free.fr>
Source record: 27401
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Tom Bruhns" <k7itm@aol.com> a crit dans le message news:
3200347.0403230937.78f49b95@posting.google.com...

```
<snip>
> o It's possible to get 1% C0G caps.
>

Tom,
do you know any supplier of such for proto quantity ?
I need 1n/0805 and 4.7n/1206.
I can't find any of these and I feel I'll have to buy a handfull of 5%, sort
them and maybe adapt the resitors values to what the lot would kindly give
me.
Not very entertaining.

> o A C0G is probably about the cheapest electronic component you'll
> find with a maximum 30ppm/C temperature coefficient (though beware,
> some C0Gs I've seen are rated up to 60ppm/C).
>

Do you have any name ?

Thanks,
Fred.
```

2415. Re: radio receiver "alignment"

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 19:13:35 UTC
From: Lou <FFSTA17NO@SPAMACCESS995.COM>
Message-ID: <G008c.8398$5M.277832@dfw-read.news.verio.net>
Source record: 27402
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:j2q060ttk6acrg6ls9ovck0fsfgude2uk9@4ax.com...
> On Tue, 23 Mar 2004 12:29:26 GMT, john_c@tpg.com.au (John Crighton)
> wrote:
>
> > I am the type that likes to use test equipment as laid
> >down by the alignment instructions in the book. My
> >workmate always achieved better results than me.
> >He would say to me "Can't you hear that the tone
> >just doesn't sound right?" I couldn't hear what
> >he was on about. So we used to have a good laugh
> >about my bench having signal generators to cover
> >455KHz, 10.7 Mhz and the desired UHF channel.
> > Oscilloscope, noise and distortion meter,
> >frequency meter and dummy load/power meter,
> >modulation meter. If there was a spectrum analyser
> >available I would have a play with that too.
> >I just liked playing with the gear. My work mate got
> >far more two-way radios fixed and out the door than
> >I ever did. He was good. He had the ear for it and
> >magic hands.
>
> Hi John,
>
> Some people just seem to have an almost supernatural ability to do
> this with virtually no technical knowledge. I can't begin to tell you
> the extraordinary feats I've seen done IRO radio mods and tweaks by
> people who shouldn't, by any reasonable measure, have had an earthly
> clue about what they were doing!
> --
>
> The BBC: Licensed at public expense to spread lies.

I have a bench full of equipment and use it only to get me out of the dark,
if no signal at all. Once I get past that, I use my own ears. I get far
better audio.
Instruments just don't cut it for "listening" audio. Lou

2416. Re: radio receiver "alignment"

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 19:22:18 UTC
From: art <art_not_carney@nospam.com>
Message-ID: <40608E68.974410AB@nospam.com>
Source record: 27403
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

That's nothing. I got a better story..

Dad bought a pair of walkie talkies back in 1964 when I was 5 yr old,
I found the soldering iron (always watched him fix the tv sets for people)

and removed every part on the pc board from one of the wt !

When he got home, I thought he would whip my butt but instead
he gave me a big pat on the head and was proud of my work !

art

> On Tue, 23 Mar 2004 14:25:14 GMT, John Hall
> <wweexxsseessssaa@telus.net> wrote:
>
> >I remember years ago my dad's friend had been fiddling with his radio
> >because it didn't work right, he "found some screws loose in those
> >little cans, so tightened them all down". Strangely, that didn't
> >improve things.
>
> :-)
> It's the first thing a lot of folks seem to do when they get the back
> off a radio, isn't it?

2417. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 19:54:49 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <10615gcpo3g7l06@corp.supernews.com>
Source record: 27404
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Thanks, Jeff and Ken, for the info about modern mica capacitors. I haven't dealt with the high-power RF world since a previous life as a radar technician, long ago now, so hadn't realized they're still preferred for some applications.

Roy Lewallen, W7EL

2418. Re: radio receiver "alignment"

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 20:22:07 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <8g51601ae18e16ikhh5138j5dduiri009r@4ax.com>
Source record: 27406
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Tue, 23 Mar 2004 14:13:35 -0500, "Lou"
<FFSTA17NO@SPAMACCESS995.COM> wrote:

>I have a bench full of equipment and use it only to get me out of the dark,
>if no signal at all. Once I get past that, I use my own ears. I get far
>better audio.
>Instruments just don't cut it for "listening" audio. Lou

A aging G3 friend of mine would agree with you here. He seldom resorts
to anything more than a DVM and a capacitance bridge to carry out
quite difficult repairs. I, OTOH, am totally stuffed without a full
schematic, my 'scope, signal generator, frequency counter, spectrum
analyser and just about anything else you can think of. I once knew a
totally blind guy from Hastings who repaired radios without *any* test
equipment or schematics, seemingly by 'feeling his way around' the
circuit board and listening for appropriate responses. No way I could
ever do that: incredible. And I've met many others who have similar
abilities, too, over the years.
--

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2419. Re: radio receiver "alignment"

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 20:22:09 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <716160dsmnjkj6ll330buck55v3c329meg@4ax.com>
Source record: 27405
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Tue, 23 Mar 2004 19:22:18 GMT, art <art_not_carney@nospam.com>
wrote:

>That's nothing. I got a better story..
>
>Dad bought a pair of walkie talkies back in 1964 when I was 5 yr old,
>I found the soldering iron (always watched him fix the tv sets for people)
>
>and removed every part on the pc board from one of the wt !
>
>When he got home, I thought he would whip my butt but instead
>he gave me a big pat on the head and was proud of my work !

Personally, I'd have been a little miffed to say the least, but it's
great for you that you had a relationship like that with your father.
--

The BBC: Licensed at public expense to spread lies.

2420. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 20:45:15 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403231245.307c8cb3@posting.google.com>
Source record: 27407

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:<u9b060t24vtbd4no7pnpo4b2n7d5sq05vg@4ax.com>...
> On 22 Mar 2004 22:01:47 -0800, k7itm@aol.com (Tom Bruhns) wrote:
>
> >Of course, maybe you don't need such a high Q, Paul. Qu of 30 is
> >quite reasonable for small SMT RF inductors, at least the type I use.
> >In the following list, "series" means in series from the gate output
> >to the next gate input, in order, and "shunt" means shunt to ground at
> >that point. Anyway, try this (build it or SPICE it or RFSim99
> >it...add resistors to any simulation to account for the Qu. I'd
> >suggest 3 ohms series and 12k ohms shunt for each 1.8uH.)
>
> Thanks, Tom. I've simulated the filter and posted the plot result to
> abse. Looks promising. See if it meets your expectations....

Hmmm...I simulated it, and it looked fine to me. I don't do a.b.*
groups. I haven't actually built one; more pressing things to do.
But I expect it will work OK. It assumes no inductive coupling among
the coils. That's usually not too hard to get low enough in practice,
if you orient the coils properly.

BTW, check out Coil-Q inductors for commercial RF coils in small
shield cans with decent Q. 7mm square can, Qu around 100 for
inductances and frequencies in the neighborhood we're talking about
here.

2421. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 21:58:47 UTC
From: bo_pkearn_selecta@multi-band-cb-is-here-10-4.eircom.ru.br.net
Message-ID: <4060b304.1099572@news1.eircom.net>
Source record: 27408
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

On Mon, 22 Mar 2004 17:46:44 -0000, "Airy R. Bean"
<airy.r.bean@lycos.co.uk> wrote:

>I wonder what was Mr.Reay's purpose in publishing

you left out

posing for photgraph after sucessfully passing the morse appreciation
for the new wonderful m3 licence that he didnt like the look of at
first...all because the m3 had access to hf above those with a more
advanced licence.

2422. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 21:59:46 UTC
From: bo_pkearn_selecta@multi-band-cb-is-here-10-4.eircom.ru.br.net
Message-ID: <4060b318.1120156@news1.eircom.net>
Source record: 27409
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

On Sun, 21 Mar 2004 14:30:41 -0800, Bill Turner <noway@nohow.com>
wrote:

>Actually, I love these guys. Think how awfully boring the world would
>be if everyone was perfectly sensible. Keep 'em coming, Airyhead!

and without those who HAVE THE BALLS to call a corck a crock.

The emperor has no clothes and most b-licesees know it.
just too afraid to say it...thats why 2500 ran away from a morse test.

2423. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 22:00:09 UTC
From: Shaven Granulate <nope@privacy.net>
Message-ID: <Xns94B5DF23A54E8ShevaAlaneGrunt@130.133.1.4>
Source record: 27410
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

bo_pkearn_selecta@multi-band-cb-is-here-10-4.eircom.ru.br.net
(zpk) wrote in news:4060b304.1099572@news1.eircom.net:

> posing for photgraph after sucessfully passing the morse
> appreciation for the new wonderful m3 licence that he didnt
> like the look of at first...all because the m3 had access
> to hf above those with a more advanced licence.

None of the 7 people who I instructed for the M3 licence wanted
nor were bothered about having their pictures taken for PW or
Radcom.

(Actually one screwed his exam up first time and actually failed
his resit too!)

And, as a club, we weren't fussed either.

Leigh....

2424. Re: radio receiver "alignment"

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 22:07:59 UTC
From: Lou <FFSTA17NO@SPAMACCESS995.COM>
Message-ID: <dz28c.8402$5M.277330@dfw-read.news.verio.net>
Source record: 27411
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:8g51601ae18e16ikhh5138j5dduiri009r@4ax.com...
> On Tue, 23 Mar 2004 14:13:35 -0500, "Lou"
> <FFSTA17NO@SPAMACCESS995.COM> wrote:
>
> >I have a bench full of equipment and use it only to get me out of the
dark,
> >if no signal at all. Once I get past that, I use my own ears. I get far
> >better audio.
> >Instruments just don't cut it for "listening" audio. Lou
>
> A aging G3 friend of mine would agree with you here. He seldom resorts
> to anything more than a DVM and a capacitance bridge to carry out
> quite difficult repairs. I, OTOH, am totally stuffed without a full
> schematic, my 'scope, signal generator, frequency counter, spectrum
> analyser and just about anything else you can think of. I once knew a
> totally blind guy from Hastings who repaired radios without *any* test
> equipment or schematics, seemingly by 'feeling his way around' the
> circuit board and listening for appropriate responses. No way I could
> ever do that: incredible. And I've met many others who have similar
> abilities, too, over the years.
> --
>
> The BBC: Licensed at public expense to spread lies.

The blind do have a good sense about them. They have to! It is really
amazing what they can do. Lou

2425. Re: radio receiver "alignment"

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 22:09:13 UTC
From: Lou <FFSTA17NO@SPAMACCESS995.COM>
Message-ID: <nA28c.8403$5M.277955@dfw-read.news.verio.net>
Source record: 27412
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Sounds almost like a "Leave it to Beaver" episode! I love it. Lou

"art" <art_not_carney@nospam.com> wrote in message
news:40608E68.974410AB@nospam.com...
> That's nothing. I got a better story..
>
> Dad bought a pair of walkie talkies back in 1964 when I was 5 yr old,
> I found the soldering iron (always watched him fix the tv sets for people)
>
> and removed every part on the pc board from one of the wt !
>
> When he got home, I thought he would whip my butt but instead
> he gave me a big pat on the head and was proud of my work !
>
> art
>
>
>
>
>
>
> > On Tue, 23 Mar 2004 14:25:14 GMT, John Hall
> > <wweexxsseessssaa@telus.net> wrote:
> >
> > >I remember years ago my dad's friend had been fiddling with his radio
> > >because it didn't work right, he "found some screws loose in those
> > >little cans, so tightened them all down". Strangely, that didn't
> > >improve things.
> >
> > :-)
> > It's the first thing a lot of folks seem to do when they get the back
> > off a radio, isn't it?
>

2426. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 22:41:22 UTC
From: bo_pkearn_selecta@multi-band-cb-is-here-10-4.eircom.ru.br.net
Message-ID: <4060bcb7.3583004@news1.eircom.net>
Source record: 27413
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

On 23 Mar 2004 22:00:09 GMT, Shaven Granulate <nope@privacy.net>
wrote:

>None of the 7 people who I instructed for the M3 licence wanted
>nor were bothered about having their pictures taken for PW or
>Radcom.
>
>(Actually one screwed his exam up first time and actually failed
>his resit too!)
>
>And, as a club, we weren't fussed either.

what ???!!

u mean...u mean...

(sound of dramatic music...)

u DONT have a picture of your clubmates posing
with a BIG YELLOW SHEET OF PAPER ??

(flash of lightning...bang of thunder)

2427. Broadband tube driver circuit needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 22:43:57 UTC
From: Bob P <nospam@nospam.end>
Message-ID: <N438c.15252$t16.8617384@newssvr28.news.prodigy.com>
Source record: 27414

Want to have broadband (7-28 Mhz) 1 Watt (50 Ohms) class A solid state amplifier driving grid of 6L6 tube to about 2 or 3 mA grid current, tube is biased to about -65 Volts for class C operation with 550 Volts on the plate. I don't want to have any tuned circuits in the 6L6 grid if I can avoid it. As of now, the 6L6 has a 6CL6 driver feeding tuned grid circuit, easily gets 2-3 mA.
My goal is to eliminate the driver tube and the tuned grid circuit.

Anyone have knowledge of toroid(s) that might be required, turns ratio, material, etc.?
Do I need a more driving power ? Probably could get 2 Watts out of my driver circuit if need be.

thanks
Bob
kb8tl at yahoo dot com

2428. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 23:18:24 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403231518.c1b301b@posting.google.com>
Source record: 27415
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Sorry to say that I don't have a recommendation for a vendor for small quantities of the 1% parts, but how many did you need? I know I have some of the 1.0nF 0805s, and might get lucky on the others too. I have a whole bunch of some value fairly close to 4.7nF, and I'm just not remembering which it is. Might be 3.9, might be 5.6 or 6.8, if not 4.7. Anyway, if you're not looking for too many, I'd be happy to help you out.

But even if you buy a bunch of 5% ones, that might not be a bad way to go. I just measured about 20 470pF 5% ones I happened to have on my desk, and they were between 468 and 488, about +/-2% from the midpoint.

I'm not remembering where I saw the 60ppm number. It surprised me, though, and I made a mental note to always check the specs on the caps I'm using, if it's important. It was fairly recently, and it was a surprise because I had always equated 30ppm with NPO/C0G. I just did a Google search for "C0G 60ppm" and got several hits, but in looking at some of them, I found 60ppm associated only with NPO, and not with C0G, so perhaps I'm wrong about C0Gs, at least. I'd be happy to be wrong in this case! A little further looking suggests that EIA CG or C0G officially must be +/-30ppm max, and EIA CH is +/-60ppm.

Cheers,
Tom

"Fred Bartoli" <fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo> wrote in message news:<4060791b$0$292$636a15ce@news.free.fr>...
> "Tom Bruhns" <k7itm@aol.com> a ï¿½crit dans le message news:
> 3200347.0403230937.78f49b95@posting.google.com...
>
> <snip>
> > o It's possible to get 1% C0G caps.
> >
>
> Tom,
> do you know any supplier of such for proto quantity ?
> I need 1n/0805 and 4.7n/1206.
> I can't find any of these and I feel I'll have to buy a handfull of 5%, sort
> them and maybe adapt the resitors values to what the lot would kindly give
> me.
> Not very entertaining.
>
>

> > o A C0G is probably about the cheapest electronic component you'll
> > find with a maximum 30ppm/C temperature coefficient (though beware,
> > some C0Gs I've seen are rated up to 60ppm/C).
> >
>
> Do you have any name ?
>
>
> Thanks,
> Fred.

2429. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 23:28:47 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <1061i1j5a0e8h6b@corp.supernews.com>
Source record: 27416
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

According to information I have, the C0 means zero nominal tempco, and the G means +/-30 ppm. There are various other letters (unfortunately not in order) representing tolerances from +/-10 to +/-2500 ppm. (There's also the letter O meaning "not specified" and P meaning "see applicable specification".) +/-60 is H, so a 0 +/-60 ppm part would be C0H, not C0G. This series of suffix letters is used for temperature compensating types (e.g., M7 (P100), R2 (N220)) as well, so R2G would be -220 +/-30 ppm, M7H would be +100 +/-60 pmm, etc.

Roy Lewallen, W7EL

Tom Bruhns wrote:

> Sorry to say that I don't have a recommendation for a vendor for small
> quantities of the 1% parts, but how many did you need? I know I have
> some of the 1.0nF 0805s, and might get lucky on the others too. I
> have a whole bunch of some value fairly close to 4.7nF, and I'm just
> not remembering which it is. Might be 3.9, might be 5.6 or 6.8, if
> not 4.7. Anyway, if you're not looking for too many, I'd be happy to
> help you out.
>
> But even if you buy a bunch of 5% ones, that might not be a bad way to
> go. I just measured about 20 470pF 5% ones I happened to have on my
> desk, and they were between 468 and 488, about +/-2% from the
> midpoint.
>
> I'm not remembering where I saw the 60ppm number. It surprised me,
> though, and I made a mental note to always check the specs on the caps
> I'm using, if it's important. It was fairly recently, and it was a
> surprise because I had always equated 30ppm with NPO/C0G. I just did
> a Google search for "C0G 60ppm" and got several hits, but in looking
> at some of them, I found 60ppm associated only with NPO, and not with
> C0G, so perhaps I'm wrong about C0Gs, at least. I'd be happy to be
> wrong in this case! A little further looking suggests that EIA CG or
> C0G officially must be +/-30ppm max, and EIA CH is +/-60ppm.
>
> Cheers,
> Tom

2430. Re: Wire Wrap Wire (WWW?)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 23:35:04 UTC
From: "Gary S." <Idontwantspam@net>
Message-ID: <q5i1601qjt2ie4sh7tjhk31qq33flnrsf0@4ax.com>
Source record: 27417

On Tue, 23 Mar 2004 09:57:40 -0500, "xpyttl"
<xpyttl_NOSPAM@earthling.net> wrote:

>Would you believe - Radio Shack.
>
>They only have three colors, though.
>
My local electronics shop has it in more colors than that, along with
an assortment of tools.

I would suspect that Newark has it somewhere in their catalog.

WW is less used, there are other, newer, prototyping techniques out
there as well.

Some component leads still have the squared profile ideal for WW.

Happy trails,
Gary (net.yogi.bear)
---
at the 51st percentile of ursine intelligence

Gary D. Schwartz, Needham, MA, USA
Please reply to: garyDOTschwartzATpoboxDOTcom

2431. Re: Wire Wrap Wire (WWW?)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 23:35:57 UTC
From: brokebob@aol.com
Message-ID: <20040323183557.24396.00000281@mb-m07.aol.com>
Source record: 27418

One color is fine with me. The two local stores claim that it is not available anymore.
brokebob@aol.com (broke=not working, retired=not working, retired=broke)

2432. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-23 23:46:00 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <8rh1609md1kadqdcoif9ottq1q2oofb16q@4ax.com>
Source record: 27419

On 23 Mar 2004 12:45:15 -0800, k7itm@aol.com (Tom Bruhns) wrote:

>Hmmm...I simulated it, and it looked fine to me. I don't do a.b.*
>groups. I haven't actually built one; more pressing things to do.
>But I expect it will work OK. It assumes no inductive coupling among
>the coils. That's usually not too hard to get low enough in practice,
>if you orient the coils properly.
>
>BTW, check out Coil-Q inductors for commercial RF coils in small
>shield cans with decent Q. 7mm square can, Qu around 100 for
>inductances and frequencies in the neighborhood we're talking about
>here.

Hey, give me a chance to keep up with your suggestions, will you? ;-)
I've only just today taken delivery of some powedered iron toroids you
tipped me off on (T37-10 for the time being) and am experimenting with
those at present. Moreover, I replaced the factory, miniature,
resistor-like inductors in my original 5X multiplier with hand-wound,
air-cored ones for better Q, and guess what? *Huge* difference!
Couldn't get a fifth *at all* before, as you may recall, but changing
the inductors for the higher Q construction really brought it on big
time! So much so I was convinced I'd made some fundamental mismeasure
with the test equipment settings. Eventually it dawned that there was
no error. The whole problem had been down to choice of coils - same
values alright, but very different Qs. I've you to thank most
sincerely for that revelation!
Though the transistor-based multiplier and buffer/amp now works great,
I'll still stick with your series filter solution as it saves on
transistors and other components too. Just one last query, Tom: in
your design between the ouput of the first inverter and the input to
the next, you have, in series, a 0-10pF variable cap and a 20uH coil.
Then you have your DC bias to the 2nd gate input and a 15pF cap
shunted to ground at the same point. What was the purpose of that 15pF
cap? Was it to provide an AC ground, bypassing the lower resistor (the
one from input to gnd) or was there some loading function involved
with it as well? Or was it intended to allow some independent control
over the signal voltage level to the 2nd inverter input?
Thanks again,

Paul

--

The BBC: Licensed at public expense to spread lies.

2433. Re: radio receiver "alignment"

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 00:05:14 UTC
From: Active8 <reply2group@ndbbm.net>
Message-ID: <14ytqp6k5r853$.dlg@ID-222894.news.uni-berlin.de>
Source record: 27420
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Tue, 23 Mar 2004 17:07:59 -0500, Lou wrote:

> "Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
> news:8g51601ae18e16ikhh5138j5dduiri009r@4ax.com...
>> On Tue, 23 Mar 2004 14:13:35 -0500, "Lou"
>> <FFSTA17NO@SPAMACCESS995.COM> wrote:
>>
>>>I have a bench full of equipment and use it only to get me out of the
> dark,
>>>if no signal at all. Once I get past that, I use my own ears. I get far
>>>better audio.
>>>Instruments just don't cut it for "listening" audio. Lou
>>
>> A aging G3 friend of mine would agree with you here. He seldom resorts
>> to anything more than a DVM and a capacitance bridge to carry out
>> quite difficult repairs. I, OTOH, am totally stuffed without a full
>> schematic, my 'scope, signal generator, frequency counter, spectrum
>> analyser and just about anything else you can think of. I once knew a
>> totally blind guy from Hastings who repaired radios without *any* test
>> equipment or schematics, seemingly by 'feeling his way around' the
>> circuit board and listening for appropriate responses. No way I could
>> ever do that: incredible. And I've met many others who have similar
>> abilities, too, over the years.
>> --
>>
>> The BBC: Licensed at public expense to spread lies.
>
> The blind do have a good sense about them. They have to! It is really
> amazing what they can do. Lou

Reminds me of the blind guy who'd say to me, "Good morning, Mike,"
just from the sound of my footsteps.
--
Best Regards,
Mike

2434. Re: Broadband tube driver circuit needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 00:21:11 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1061l3jqg2jbn6e@corp.supernews.com>
Source record: 27422

"Bob P" <nospam@nospam.end> wrote in message
news:N438c.15252$t16.8617384@newssvr28.news.prodigy.com...
> Want to have broadband (7-28 Mhz) 1 Watt (50 Ohms) class A solid state
> amplifier driving grid of 6L6 tube to about 2 or 3 mA grid current, tube
is
> biased to about -65 Volts for class C operation with 550 Volts on the
plate.
> I don't want to have any tuned circuits in the 6L6 grid if I can avoid it.
> As of now, the 6L6 has a 6CL6 driver feeding tuned grid circuit, easily
gets
> 2-3 mA.
> My goal is to eliminate the driver tube and the tuned grid circuit.
>
> Anyone have knowledge of toroid(s) that might be required, turns ratio,
> material, etc.?
> Do I need a more driving power ? Probably could get 2 Watts out of my
driver
> circuit if need be.
>
> thanks
> Bob
> kb8tl at yahoo dot com
>
>
>
>

Hmm. 6L6 grid capacitance = 12pF (that's for a 6L6G - plain 6L6 is 10).
Broadband that up to 28MHz, you need the parallel R to be no more than 450
ohms (and that's for 3dB down at 28MHz).

Overall voltage swing > 2*65V; call it 140V, for an RMS of 50V. (50V)^2 /
(450*ohms) = 5.6W. Ignoring the grid drive . Assume that the coupling
circuit is 80% efficient, then you need about 7W.

The problem is that danged input capacitance. You can almost call out the
bandwidth from the constraints. You _should_ be able to make a circuit that
can be fixed-tuned for each band, you should be able to make it about 2MHz
wide if you size the coils right.

2435. BPL: Is th ARRL making its point or getting laughed at? WSJ

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 00:21:38 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <aPSdnRxlR6xOTv3d4p2dnA@comcast.com>
Source record: 27421

In This Power Play,
High-Wire Act Riles
Ham-Radio Fans

New Use for Lines Sparks
Tension With Operators;
'Firestorm' in Penn Yan
By KEN BROWN
Staff Reporter of THE WALL STREET JOURNAL
March 23, 2004; Page A1

Rick Lindquist drove down a street in a New York City suburb, ignoring the snow swirling around his car and twirling the dial on the ham radio mounted to the side of his dashboard. The radio picked up an operator in Minnesota discussing antennas, the Salvation Army's daily emergency network check and then the time, as broadcast from Colorado by the National Institute of Standards and Technology.

As the car turned onto North State Road in the village of Briarcliff Manor in Westchester County, the voices faded, replaced with whirs and wahs -- what could have been sound effects from a 1950s science-fiction movie. The source, according to Mr. Lindquist, was right outside the window: the power lines running alongside the road.

Owned by Consolidated Edison, the lines transmit not just electricity but data, much like phone and cable-TV wires. The utility is testing a system for reading meters, probing for outages and potentially offering high-speed Internet access to its customers via their electrical outlets. The interference from the power lines "ranges from very annoying to that's-all-I-can-hear," contends Mr. Lindquist, 58 years old, who often taps out Morse-code messages as he drives.

In a clash between the dots and dashes of the telegraph and the bits and bytes of the Web, the nation's vocal but shrinking population of ham-radio operators, or "hams" as they call themselves, are stirring up a war with the utility industry over new power-line communications. Hams have flooded the Federal Communications Commission with about 2,500 letters and e-mails opposing power-line trials. In a letter to the FCC, the American Radio Relay League, a ham-radio group with 160,000 members, called power-line communications "a Pandora's box of unprecedented proportions."

The league has raised more than $300,000 from nearly 5,600 donors since last summer, to pay for testing, lobbying and publicity to spread the word about the perceived threat. A half-dozen hams even confronted FCC Chairman Michael Powell, a big advocate of the power-line technology, when he visited a test site near Raleigh, N.C., earlier this month.

The problem, most ham operators contend, is that power lines weren't built to carry anything other than electricity. Telephone and cable-TV lines are either shielded with a second set of wires or twisted together to prevent their signals from interfering with other transmissions. But signals sent over electrical wires tend to spill out, the hams contend.

The FCC and the utilities say new technologies have eliminated the interference and accuse the hams of exploiting the issue for their own gains. "We haven't seen the sun darken and everything electrical turn to white noise and haze during a deployment," says Matt Oja, an executive at Progress Energy, whose test Mr. Powell visited. "This is a fairly vocal group that has been whipped into a frenzy by their organization."

The controversy comes at a sensitive time for the hams. Not too many decades ago, ham-radio operators were on the cutting edge of communications technology. They chatted with people in far-flung places at a time when long-distance calling was still a luxury. They spread word of disasters that otherwise might have taken days to reach the public. In the age of e-mail, wireless Internet access and cellphones that double as walkie-talkies, many operators worry that their hobby will fade away.

To become a fully licensed ham operator, people still need to learn Morse code, though that requirement likely will be dropped soon after more than a decade of debate. Aging hams, who built crystal radio sets as kids or were radio operators during World War II, are dying. Fewer youngsters are replacing them. Armed with powerful computers, today's young tinkerers grow up to be tech geeks, playing videogames and writing software.

The American Radio Relay League has seen its membership shrink to today's 160,000 from a peak of 175,000 in 1995, and the average member is in his mid-50s. The group estimates that there are about 250,000 active ham-radio enthusiasts.

Hams always have been a quirky bunch. They haunt a series of short-wave radio frequencies set aside for them by the federal government in the 1930s. Other slices of the spectrum are reserved for AM and FM radio, broadcast television, cellphones, and police and fire departments, among other uses.

Hams take great pride in radioing around the world. One favorite game: trying to contact someone in each of the 3,000-plus counties in the U.S. Mr. Lindquist is so enthusiastic about ham radio that he vacations in spots such as Whitehorse, the capital of Canada's Yukon Territory, so other hams can claim they made contact with that city.

Ed Thomas, the FCC's chief engineer, says the commission has spent a year listening to the hams' concerns about power lines and is getting frustrated. "Why is this thing a major calamity?" he says. "And honestly, I'd love the answer to that."

Companies such as Con Ed and Progress note that current FCC regulations call for systems to be shut down if they interfere with hams. The radio operators agree the rules are clear, but they fear they will be rescinded or not enforced.

Con Ed says its system in Briarcliff Manor doesn't interfere with the hams and maintains that, in two years of testing, it hasn't received one complaint. But the American Radio Relay League says it did mention this system in its letters to the FCC, and it has been complaining about it on its Web site.

The hams have been quick to act wherever systems are being rolled out. Just days after Penn Yan, a town of 5,200 that sits amid New York's Finger Lakes, approved a plan to test power-line Internet access, "the firestorm started with the ham-radio operators -- letters, e-mails, telephone calls saying, 'You can't do this,' " recalls Mayor Doug Marchionda Jr.

Hoping to keep everyone happy, he approached David Simmons, a local ham and owner of an electronics store that sells radio gear. They surveyed the town before the trial began to get base readings of interference. They even pinpointed a spot that had bothered police and firefighters for years, tracing it to refrigerators at a local supermarket.

With the refrigerators fixed and the power-line system in place over nine blocks of Penn Yan, Mr. Simmons is satisfied that there is no interference and now favors the new technology. "This thing has caught quite a buzz," he says. "It's just so much negativity out there."

Tom Gius, a ham-radio operator in Alpine, Texas, sees the power lines as a threat to the public services that hams provide. When hailstorms sweep through each spring, Mr. Gius heads to the local radio station, while other hams fan out to the north, south, east and west. They communicate by radio, and Mr. Gius passes information to the radio station. "We won't be able to understand each other, it'll be so noisy," frets Mr. Gius, a 60-year-old retired broadcaster.

Write to Ken Brown at ken.brown@wsj.com

2436. Re: Is th ARRL making its point or getting laughed at? WSJ

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 02:32:04 UTC
From: Bob P <nospam@nospam.end>
Message-ID: <Eq68c.15314$t16.8647422@newssvr28.news.prodigy.com>
Source record: 27423

Intentional or not, the article makes ham radio sound pathetic and antiquated. I'm starting to wonder if the ARRL is making much ado about nothing in order to collect money from a dwindling membership.
Bob
kb8tl at yahoo dot com

2437. Re: Is th ARRL making its point or getting laughed at? WSJ

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 03:34:45 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <pl78c.27616$PY1.536044@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27424

"Bob P" <nospam@nospam.end> wrote in message
news:Eq68c.15314$t16.8647422@newssvr28.news.prodigy.com...
> Intentional or not, the article makes ham radio sound pathetic and
> antiquated. I'm starting to wonder if the ARRL is making much ado about
> nothing in order to collect money from a dwindling membership.
> Bob
> kb8tl at yahoo dot com

Read the articles they link to on their site, arrl.org, about tests performed in other countries. Most countries that have experimented with BPL have abandoned it. I think BPL is just another scam. What does a power company know about running broadband networks? They couldn't even keep their own grid on line last year. They'll offer BPL at bargain prices to steal marketshare from DSL and cable. Then the service will go to hell and the prices will hit the heavens.

The difference between the U.S. and the other countries involved in testing BPL is, there are a lot of 1.5-kW stations in this country. Maybe after a few BPL modems melt down, the power companies will find other ways to gouge their customers.

"PM"

2438. Re: Wire Wrap Wire (WWW?)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 04:44:06 UTC
From: Leon Heller <leon_heller@hotmail.com>
Message-ID: <40611214$0$22999$cc9e4d1f@news.dial.pipex.com>
Source record: 27425

"Brokebob" <brokebob@aol.com> wrote in message
news:20040323183557.24396.00000281@mb-m07.aol.com...
> One color is fine with me. The two local stores claim that it is not
available
> anymore.

Farnell stocks it.

Leon

2439. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 06:00:30 UTC
From: Geoff <somebody@nospam.demon.co.uk>
Message-ID: <Xns94B63D4EFC3F93141592654@158.152.254.254>
Source record: 27426
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

bo_pkearn_selecta@multi-band-cb-is-here-10-4.eircom.ru.br.net (zpk) wrote
in news:4060b318.1120156@news1.eircom.net:

> On Sun, 21 Mar 2004 14:30:41 -0800, Bill Turner <noway@nohow.com>
> wrote:
>
>>Actually, I love these guys. Think how awfully boring the world would
>>be if everyone was perfectly sensible. Keep 'em coming, Airyhead!
>
> and without those who HAVE THE BALLS to call a corck a crock.
>
>
> The emperor has no clothes and most b-licesees know it.
> just too afraid to say it...thats why 2500 ran away from a morse test.

Which 2500? please name them and the morse test the "ran away from".

YG

2440. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 07:08:11 UTC
From: John Woodgate <jmw@jmwa.demon.contraspam.yuk>
Message-ID: <Yx7DKFBbPTYAFwrN@jmwa.demon.co.uk>
Source record: 27428
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

I read in sci.electronics.design that Roy Lewallen <w7el@eznec.com>
wrote (in <1061i1j5a0e8h6b@corp.supernews.com>) about 'Extracting the
5th Harmonic', on Tue, 23 Mar 2004:
>This series of suffix letters is used for temperature
>compensating types (e.g., M7 (P100), R2 (N220)) as well, so R2G would be
>-220 +/-30 ppm, M7H would be +100 +/-60 pmm, etc.

What does D0G mean, if anything?
--
Regards, John Woodgate, OOO - Own Opinions Only.
The good news is that nothing is compulsory.
The bad news is that everything is prohibited.
http://www.jmwa.demon.co.uk Also see http://www.isce.org.uk

2441. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 07:16:23 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403232316.62289347@posting.google.com>
Source record: 27427

Paul,

It's a series resonant circuit. The inductor is obvious. The capacitor is actually split between the one to ground at the gate input and the one on the other side of the inductor. Since it's a series circuit, the inductor and first cap can be swapped, of course; that might make it more obvious. The gate's RF input impedance (including a resistive part) and the bias resistors are in parallel (AC-wise) with the cap to ground, and provide a certain amount of damping -- lowering of the Q -- or the reason loaded Q is lower than Qu of the inductor. Since the tuning cap is in series with that cap, only part of the resonance voltage appears across it. Remember, in a series-resonant circuit, the voltage across the inductor or capacitor is much higher than the exciting voltage--that's where the voltage step-up comes from that's needed in this case. Splitting the net capacitance up this way lets you get a reasonably high loaded Q (to reject the other harmonics better) and control the output voltage, and provide the proper load at to the driving gate...as I recall, my design goal was about 100 ohms at the fifth harmonic, and a much higher impedance at the fundamental and the other harmonics. That way, the driving gate doesn't dissipate much power trying to drive those other harmonics into a heavy load, and only has to deliver significant power at the fifth harmonic. -- You could just use a cap from the gate input to ground, and an inductor to the driving gate's output (and then do away with the bias resistors too...), but then you can't so easily control the loaded Q.

Yes, you should generally consider more than just the inductance of a coil. Q and self-resonant frequency are both generally important. At high frequencies, coils are the least ideal of our linear passives: Rs, Ls and Cs. Usually you can get by with ignoring the non-idealities of film and composition resistors and the types of caps usually used at RF, but inductors are a different story. It's good preparation for working in the GHz range, where pretty much all components have non-ideal performance.

Cheers,
Tom

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message news:<8rh1609md1kadqdcoif9ottq1q2oofb16q@4ax.com>...
> On 23 Mar 2004 12:45:15 -0800, k7itm@aol.com (Tom Bruhns) wrote:
>
> >Hmmm...I simulated it, and it looked fine to me. I don't do a.b.*
> >groups. I haven't actually built one; more pressing things to do.

> >But I expect it will work OK. It assumes no inductive coupling among
> >the coils. That's usually not too hard to get low enough in practice,
> >if you orient the coils properly.
> >
> >BTW, check out Coil-Q inductors for commercial RF coils in small
> >shield cans with decent Q. 7mm square can, Qu around 100 for
> >inductances and frequencies in the neighborhood we're talking about
> >here.
>
> Hey, give me a chance to keep up with your suggestions, will you? ;-)
> I've only just today taken delivery of some powedered iron toroids you
> tipped me off on (T37-10 for the time being) and am experimenting with
> those at present. Moreover, I replaced the factory, miniature,
> resistor-like inductors in my original 5X multiplier with hand-wound,
> air-cored ones for better Q, and guess what? *Huge* difference!
> Couldn't get a fifth *at all* before, as you may recall, but changing
> the inductors for the higher Q construction really brought it on big
> time! So much so I was convinced I'd made some fundamental mismeasure
> with the test equipment settings. Eventually it dawned that there was
> no error. The whole problem had been down to choice of coils - same
> values alright, but very different Qs. I've you to thank most
> sincerely for that revelation!
> Though the transistor-based multiplier and buffer/amp now works great,
> I'll still stick with your series filter solution as it saves on
> transistors and other components too. Just one last query, Tom: in
> your design between the ouput of the first inverter and the input to
> the next, you have, in series, a 0-10pF variable cap and a 20uH coil.
> Then you have your DC bias to the 2nd gate input and a 15pF cap
> shunted to ground at the same point. What was the purpose of that 15pF
> cap? Was it to provide an AC ground, bypassing the lower resistor (the
> one from input to gnd) or was there some loading function involved
> with it as well? Or was it intended to allow some independent control
> over the signal voltage level to the 2nd inverter input?
> Thanks again,
>
> Paul

2442. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 07:45:52 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <1062f5jsusfhm9d@corp.supernews.com>
Source record: 27429
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

John Woodgate wrote:
> I read in sci.electronics.design that Roy Lewallen <w7el@eznec.com>
> wrote (in <1061i1j5a0e8h6b@corp.supernews.com>) about 'Extracting the
> 5th Harmonic', on Tue, 23 Mar 2004:
>
>>This series of suffix letters is used for temperature
>>compensating types (e.g., M7 (P100), R2 (N220)) as well, so R2G would be
>>-220 +/-30 ppm, M7H would be +100 +/-60 pmm, etc.
>
>
> What does D0G mean, if anything?

I don't find D0 listed in my reference. The only one I have with a 0 number is C0, nominally zero tempco. So if it is a legitimate capacitor designation, I don't know what it is. Getting kind of close to April 1, so maybe it's short for D0G B0NE, a kind of ceramic capcitor?

Roy Lewallen, W7EL

2443. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 07:50:18 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403232350.2152f528@posting.google.com>
Source record: 27430
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Fred Bartoli" <fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo> wrote in message news:<4060791b$0$292$636a15ce@news.free.fr>...
...
> Tom,
> do you know any supplier of such for proto quantity ?
> I need 1n/0805 and 4.7n/1206.
> I can't find any of these and I feel I'll have to buy a handfull of 5%, sort
> them and maybe adapt the resitors values to what the lot would kindly give
> me.
> Not very entertaining.

Followup on my previous offer: I have quantities of 3.9nF, 6.8nF and 8.2nF 1%, and a decent supply of 1.0nF 1%, but no 4.7nF rated at 1%. If I had the task of finding a dozen or two 1% 4.7nF parts, I'd just get a hundred 5% parts, make up a set of maybe ten bins (or just divide a sheet of paper into ten or twenty areas) in 1% increments, and sit down for about five minutes with my capacitance tweezers. The sorting goes really fast that way: pick up a part with the tweezers, read its value and drop it into the right bin.

Cheers,
Tom

2444. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 09:26:22 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <70k260lqs6rb7a4kdd2iajt0vhj3uk22ei@4ax.com>
Source record: 27431
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 24 Mar 2004 07:08:11 +0000, John Woodgate
<jmw@jmwa.demon.contraspam.yuk> wrote:

>What does D0G mean, if anything?

Jordan. :->

--

The BBC: Licensed at public expense to spread lies.

2445. Re: Is th ARRL making its point or getting laughed at? WSJ

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 11:27:39 UTC
From: R J Carpenter <rcarpen@erols.com>
Message-ID: <4061709a$0$3075$61fed72c@news.rcn.com>
Source record: 27432

"Paul_Morphy" <nopaul_morphy2@coolgoose.com> wrote in message
news:pl78c.27616$PY1.536044@bgtnsc05-news.ops.worldnet.att.net...
>
> The difference between the U.S. and the other countries involved in
testing
> BPL is, there are a lot of 1.5-kW stations in this country.

I was talking (in person) to 3 UK hams at a gathering. All three of them
had Henry 2K amplifiers.

I think the answer about BPL is that European countries really do try to
control RF pollution. Even in the Caribbean, drive around the French
islands with an AM radio. I don't hear power line noise there.

2446. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 11:59:25 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <lbt260tteif9frv96g2ln8obj6henbs8ps@4ax.com>
Source record: 27433

On 23 Mar 2004 23:16:23 -0800, k7itm@aol.com (Tom Bruhns) wrote:

>Paul,
>
>It's a series resonant circuit. The inductor is obvious. The
>capacitor is actually split between the one to ground at the gate
>input and the one on the other side of the inductor. Since it's a
>series circuit, the inductor and first cap can be swapped, of course;
>that might make it more obvious. The gate's RF input impedance
>(including a resistive part) and the bias resistors are in parallel
>(AC-wise) with the cap to ground, and provide a certain amount of
>damping -- lowering of the Q -- or the reason loaded Q is lower than
>Qu of the inductor. Since the tuning cap is in series with that cap,
>only part of the resonance voltage appears across it. Remember, in a
>series-resonant circuit, the voltage across the inductor or capacitor
>is much higher than the exciting voltage--that's where the voltage
>step-up comes from that's needed in this case. Splitting the net
>capacitance up this way lets you get a reasonably high loaded Q (to
>reject the other harmonics better) and control the output voltage, and
>provide the proper load at to the driving gate...as I recall, my
>design goal was about 100 ohms at the fifth harmonic, and a much
>higher impedance at the fundamental and the other harmonics. That
>way, the driving gate doesn't dissipate much power trying to drive
>those other harmonics into a heavy load, and only has to deliver
>significant power at the fifth harmonic. -- You could just use a cap
>from the gate input to ground, and an inductor to the driving gate's
>output (and then do away with the bias resistors too...), but then you
>can't so easily control the loaded Q.

Thanks for the clarification, Tom. A useful piece of enlightenment.
Most helpful.

p.
--

The BBC: Licensed at public expense to spread lies.

2447. Re: Is th ARRL making its point or getting laughed at? WSJ

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 12:52:53 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <frudnXoDA6x1HvzdRVn-vg@comcast.com>
Source record: 27434

The EU is very strict on EMI -- much more so than the US. Here we let in
all those 900MHZ chinese phones just so consumers have something to complain
about.

I wonder which will be worse, BPL or more unshielded and poorly designed
switching power supplies.

"R J Carpenter" <rcarpen@erols.com> wrote in message
news:4061709a$0$3075$61fed72c@news.rcn.com...
>
> "Paul_Morphy" <nopaul_morphy2@coolgoose.com> wrote in message
> news:pl78c.27616$PY1.536044@bgtnsc05-news.ops.worldnet.att.net...
> >
> > The difference between the U.S. and the other countries involved in
> testing
> > BPL is, there are a lot of 1.5-kW stations in this country.
>
> I was talking (in person) to 3 UK hams at a gathering. All three of them
> had Henry 2K amplifiers.
>
> I think the answer about BPL is that European countries really do try to
> control RF pollution. Even in the Caribbean, drive around the French
> islands with an AM radio. I don't hear power line noise there.
>
>
>
>

2448. Re: radio receiver "alignment"

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 13:34:41 UTC
From: art <art_not_carney@nospam.com>
Message-ID: <40618E70.BC2E7D90@nospam.com>
Source record: 27435
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Or it could be the aftershave you used !

art

> > The blind do have a good sense about them. They have to! It is really
> > amazing what they can do. Lou
>
> Reminds me of the blind guy who'd say to me, "Good morning, Mike,"
> just from the sound of my footsteps.
> --
> Best Regards,
> Mike

2449. Re: radio receiver "alignment"

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 13:39:27 UTC
From: art <art_not_carney@nospam.com>
Message-ID: <40618F8D.7E0073D5@nospam.com>
Source record: 27436
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Before the walkie talkie disassemble, when I was about four I
found his tape measure. I could not figure it out how it worked,

so I took it apart by removing the four phillips screws that held the
case together. big mistake !

I was lucky and I almost poked my eye out when the spring
released from the case and hit me in the face!

No way could I put it all back in the case so I just shoved all
of it inside the toolbox and replaced the lock (easy to open with a bobby pin).

About a week later when he opened up that toolbox is when I got my butt whipped
!

So I guess the om cut me little slack with the walkie talikes.

art

Paul wrote:

> On Tue, 23 Mar 2004 19:22:18 GMT, art <art_not_carney@nospam.com>
> wrote:
>
> >That's nothing. I got a better story..
> >
> >Dad bought a pair of walkie talkies back in 1964 when I was 5 yr old,
> >I found the soldering iron (always watched him fix the tv sets for people)
> >
> >and removed every part on the pc board from one of the wt !
> >
> >When he got home, I thought he would whip my butt but instead
> >he gave me a big pat on the head and was proud of my work !
>
> Personally, I'd have been a little miffed to say the least, but it's
> great for you that you had a relationship like that with your father.
> --
>
> The BBC: Licensed at public expense to spread lies.

2450. Re: Is th ARRL making its point or getting laughed at? WSJ

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 15:06:54 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <iuh8c.14106$tY6.409609@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27437

"R J Carpenter" <rcarpen@erols.com> wrote in message
news:4061709a$0$3075$61fed72c@news.rcn.com...
>
> "Paul_Morphy" <nopaul_morphy2@coolgoose.com> wrote in message
> news:pl78c.27616$PY1.536044@bgtnsc05-news.ops.worldnet.att.net...
> >
> > The difference between the U.S. and the other countries involved in
> testing
> > BPL is, there are a lot of 1.5-kW stations in this country.
>
> I was talking (in person) to 3 UK hams at a gathering. All three of them
> had Henry 2K amplifiers.

There's no substitute for firepower. :>

> I think the answer about BPL is that European countries really do try to
> control RF pollution. Even in the Caribbean, drive around the French
> islands with an AM radio. I don't hear power line noise there.

Line noise also means wasted power and damage to components. BPL may, at least, get American power companies to clean up their acts.

As an aside, interesting to note that BPL is being flogged as the answer to the rural dweller's prayer, yet all the current offerings are in urban areas already served by DSL and/or cable broadband. If this FCC Chairman had a clue, he'd have arranged for BPL to be initially tested in places not served by other broadband services. By the time people wake up and realize BPL isn't the greatest communications 'revolution' since the smoke signal, it will have taken root and we'll never get rid of it.

OTOH, maybe ARRL can use BPL as a tool to continue fighting tower-height restrictions in residential areas. The farther you can get your antenna from the power lines, the better. How about power-company subsidized and installed towers? They've got the rigging equipment and crews, after all. Ie, BPL in every home = 120' + tower in every ham's yard. :>

"PM"

2451. Re: best architecture for a homebrewed single-station FM broadcast dx receiver?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 16:31:40 UTC
From: jerryg50@hotmail.com
Message-ID: <c3sd5coag1@xuxa.iecc.com>
Source record: 27438
Cross-posted to: rec.radio.broadcasting,sci.electronics,rec.radio.amateur.homebrew

Building a good receiver of any kind is complex, if you really want
good specs. Very few people have been able to accomplish this at home.
Just for calibration, you will require the proper instruments and
skills.

A good FM receiver with the proper antenna will do it, as long as the
antenna can see over the horizon, and within your distance range there
are no other stations at the same frequency. There are also the
physical limitations to consider as well.

Since the range of an FM station is about 120 to 140 miles at the very
best with a good antenna, there may be allowance for other stations to
broadcast within a 150 mile radius. If there are other stations, these
may be difficult to tune out.

You would be best off with an antenna that is cut to the frequency you
want to recieve, it will have to be able to see over the horizon
enough to see the transmitter site, have the proper directivity, and
be very well impedance matched to the receiver.

All the high end FM tuners are designed to be able to use an external
antenna, using a 75 ohm coax type hookup.

Have you considered calling this station to see if they are on the
net, satellite service, or on your local cable TV service? Many of
these small stations are on the net, and broadcast streamed
programming. This way you can use your computer to listen to them. '

Jerry Greenberg

--

alanh_27@yahoo.com (Alan Horowitz) wrote in message news:<c3prjd$b6f$1@xuxa.iecc.com>...
> a city I visit frequently -or more precisely, it's exurban outskirts -
> has only one mellow-Jazz FM-broadcast station, the only one for many
> hundreds of miles.
>
> thus I have decided to build my own single-station hi-performance
> receiver to get the one station.
>
> I know enough to know that ideally, the bulk of the gain,
> directionality, selectivity should be at the antenna itself. Or even
> more to the point, tower height. At least ideally. And
> hi-performance single FM channel yagi's are easily spec'd from a

> number of antenna houses. So that issue is not being placed on this
> table.
>
> The rest of the gain budget is.
>
> Let the discussions begin. For example, what approach do the known
> "name" receivers (Kloss Model One, GE Super Radio) use? can a
> homebrewer do better?
> Which commercial house builds the best resonant chambers for the 108
> Mhz frequency? Can be be done easily at home? how about the
> demodulation and audio portions?

2452. Re: best architecture for a homebrewed single-station FM broadcast dx receiver?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 16:31:42 UTC
From: k7itm@aol.com
Message-ID: <c3sd5e$oc5$1@xuxa.iecc.com>
Source record: 27439
Cross-posted to: rec.radio.broadcasting,sci.electronics,rec.radio.amateur.homebrew

alanh_27@yahoo.com (Alan Horowitz) wrote in message news:<c3prjd$b6f$1@xuxa.iecc.com>...
> a city I visit frequently -or more precisely, it's exurban outskirts -
> has only one mellow-Jazz FM-broadcast station, the only one for many
> hundreds of miles.
>
> thus I have decided to build my own single-station hi-performance
> receiver to get the one station.
...

Exactly what will make it "hi-performance"? I'd like to get this nailed down early here. That is, it would really help to know answers to things like:

What distortion performance do you want to get? (Will you be able to deliver a clean enough signal from the antenna to get to the desired performance level?)

What will the level of the desired signal be at the receiver antenna terminals?

What will the strongest unwanted signals be: level and relative frequency?

What resources do you have available for design, construction and testing?

Will this receiver be in a fixed location, or do you want it to be easily portable? How much power can it draw?

Others may well think of questions to add, before we go off into the weeds with unproductive answers.

Cheers,
Tom

2453. Re: best architecture for a homebrewed single-station FM broadcast dx receiver?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 16:31:43 UTC
From: xpyttl <xpyttl_NOSPAM@earthling.net>
Message-ID: <c3sd5focl1@xuxa.iecc.com>
Source record: 27440
Cross-posted to: rec.radio.broadcasting,sci.electronics,rec.radio.amateur.homebrew

You need to look at your particular situation. It sounds like you are out in the desert. Is this the case? Are there other strong FM stations nearby? Any others close in frequency?

Sensitivity is relatively easy to come by. The "best" audiophile receivers are more about selectivity, which sounds like it might not be an issue in your case. There is a similar issue with antennas. Directionality is there more to combat multipath then it is to get gain. Is the terrain flat? If you are between a lot of buildings then nothing you do at the receiver will make up for what you don't do at the antenna.

You are right about needing to get your antenna high, but for a single, point to point circuit, there is such a thing as high enough. More won't help. But less will hurt dramatically.

The other big problem is getting the signal from the antenna to the radio. At FM frequencies, line losses are significant, as is noise pickup. If the signal is marginal, then you need to get an amplifier at the antenna. If what reaches the receiver is mostly noise then no amount of sensitivity at the receiver is going to help.

At any given frequency there is only a certain amount of sensitivity that you can use. At FM broadcast frequencies, that amount of sensitivity is easily obtainable these days. You can probably do "better" in terms of sensitivity by building something, but you wouldn't hear the station any better ... in fact, probably worse by having too much of a good thing.

..

"Alan Horowitz" <alanh_27@yahoo.com> wrote in message
news:c3prjd$b6f$1@xuxa.iecc.com...
> a city I visit frequently -or more precisely, it's exurban outskirts -
> has only one mellow-Jazz FM-broadcast station, the only one for many
> hundreds of miles.
>
> thus I have decided to build my own single-station hi-performance
> receiver to get the one station.
>
> I know enough to know that ideally, the bulk of the gain,
> directionality, selectivity should be at the antenna itself. Or even
> more to the point, tower height. At least ideally. And
> hi-performance single FM channel yagi's are easily spec'd from a
> number of antenna houses. So that issue is not being placed on this
> table.

>
> The rest of the gain budget is.
>
> Let the discussions begin. For example, what approach do the known
> "name" receivers (Kloss Model One, GE Super Radio) use? can a
> homebrewer do better?
> Which commercial house builds the best resonant chambers for the 108
> Mhz frequency? Can be be done easily at home? how about the
> demodulation and audio portions?
>

2454. Re: A weekly guide to Ham Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 17:56:23 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c3sik8$2afc1p$1@ID-217727.news.uni-berlin.de>
Source record: 27442
Cross-posted to: uk.radio.amateur,rec.radio.amateur.homebrew

Sounds like that "insecurity" that he projects Freudianly
onto all those who know the true position.

"zpk" <bo_pkearn_selecta@multi-band-cb-is-here-10-4.eircom.ru.br.net> wrote
in message news:4060b304.1099572@news1.eircom.net...
> On Mon, 22 Mar 2004 17:46:44 -0000, "Airy R. Bean"
> <airy.r.bean@lycos.co.uk> wrote:
> >I wonder what was Mr.Reay's purpose in publishing
> you left out
> posing for photgraph after sucessfully passing the morse appreciation
> for the new wonderful m3 licence that he didnt like the look of at
> first...all because the m3 had access to hf above those with a more
> advanced licence.

2455. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 17:58:15 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403240958.3e9ea1e9@posting.google.com>
Source record: 27441
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Yet another followup...

Mouser lists a few 1% values. You could give them a call to see if
they happen to have the ones you want. But the prices listed for the
1% values are so high I'd still consider selecting from 5% values, for
hobby work. (I'm reading this in r.r.a.homebrew, but I see it's also
crossposted to sci.electronics.design...so maybe paying a few dollars
each isn't prohibitive.)

Cheers,
Tom

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0403232350.2152f528@posting.google.com>...
> "Fred Bartoli" <fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo> wrote in
message news:<4060791b$0$292$636a15ce@news.free.fr>...
> ...
> > Tom,
> > do you know any supplier of such for proto quantity ?
> > I need 1n/0805 and 4.7n/1206.
> > I can't find any of these and I feel I'll have to buy a handfull of 5%, sort
> > them and maybe adapt the resitors values to what the lot would kindly give
> > me.
> > Not very entertaining.
>
> Followup on my previous offer: I have quantities of 3.9nF, 6.8nF and
> 8.2nF 1%, and a decent supply of 1.0nF 1%, but no 4.7nF rated at 1%.
> If I had the task of finding a dozen or two 1% 4.7nF parts, I'd just
> get a hundred 5% parts, make up a set of maybe ten bins (or just
> divide a sheet of paper into ten or twenty areas) in 1% increments,
> and sit down for about five minutes with my capacitance tweezers. The
> sorting goes really fast that way: pick up a part with the tweezers,
> read its value and drop it into the right bin.
>
> Cheers,
> Tom

2456. Re: best architecture for a homebrewed single-station FM broadcast dx receiver?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 19:19:51 UTC
From: k7itm@aol.com
Message-ID: <c3sn0nrav1@xuxa.iecc.com>
Source record: 27443
Cross-posted to: rec.radio.broadcasting,sci.electronics,rec.radio.amateur.homebrew

Thought I posted a reply yesterday, but it doesn't appear to have made
it.

Before we head off into the weeds with all sorts of opinions, how
about some clarification? I'd be interested in answers to several
questions, and suspect others will add more.

o What sort of distortion levels and signal to noise ratio are you
wanting to achieve?

o What level of desired signal will you be able to deliver to the
receiver's input terminals? Will it be strong enough, and free enough
from multipath, to make the desired distortion and SNR practical?

o What levels and relative frequencies will strong potentially
interfering signals be? -- Let's hope there's nothing significant on
an adjacent channel, and nothing really big on alternate channels
(+/-400kHz).

o How skilled are you in RF and digital construction, and what tools
do you have available for design, construction and turn-on/alignment?

o Do you want the receiver to be portable and battery-powered, or can
it be relatively large and line/mains powered?

(o Why would you not just buy a good FM tuner, and perhaps just build
a preselector if alternate-channel stations were a problem?)

Cheers,
Tom

alanh_27@yahoo.com (Alan Horowitz) wrote in message news:<c3prjd$b6f$1@xuxa.iecc.com>...
> a city I visit frequently -or more precisely, it's exurban outskirts -
> has only one mellow-Jazz FM-broadcast station, the only one for many
> hundreds of miles.
>
> thus I have decided to build my own single-station hi-performance
> receiver to get the one station.
>
> I know enough to know that ideally, the bulk of the gain,
> directionality, selectivity should be at the antenna itself. Or even
> more to the point, tower height. At least ideally. And
> hi-performance single FM channel yagi's are easily spec'd from a
> number of antenna houses. So that issue is not being placed on this
> table.

>
> The rest of the gain budget is.
>
> Let the discussions begin. For example, what approach do the known
> "name" receivers (Kloss Model One, GE Super Radio) use? can a
> homebrewer do better?
> Which commercial house builds the best resonant chambers for the 108
> Mhz frequency? Can be be done easily at home? how about the
> demodulation and audio portions?

2457. Re: Is th ARRL making its point or getting laughed at? WSJ

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 19:44:05 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <GWWdncjGD5L9ePzdUSdV9g@ptd.net>
Source record: 27444

"Bob P" <nospam@nospam.end> wrote in message
news:Eq68c.15314$t16.8647422@newssvr28.news.prodigy.com...
> Intentional or not, the article makes ham radio sound pathetic and
> antiquated. I'm starting to wonder if the ARRL is making much ado about
> nothing in order to collect money from a dwindling membership.
> Bob
> kb8tl at yahoo dot com
>

Don't be persuaded by an ill-informed WSJ reporter ... the amateur ranks are
not "shrinking"
... they've been growing steadily throughout recent history - though not as
much as *I'd* like.

Also, I can tell you from personal field tests and measurements that "access
BPL" is every bit
as bad as the ARRL indicates ... they are NOT "crying wolf" in ANY respect.

FEMA has also made a very strong statement against BPL and, while they
haven't released
their report yet, I expect that when they do the NTIA will also express
serious concerns/reservations
about access BPL as a threat to DoD, Homeland Security, and many of their
other Federal Govt.
"clients'" interest in, and reliance on, HF communications.

There is no "plot" at the ARRL "to raise money by stirring the pot vis a vis
BPL." If it were not for
the real and serious threat that BPL presents, they wouldn't NEED to raise
the money to defend
against it (or could raise money and use it for some useful purpose other
than defending our rights).

Many times articles in the press are way off base ... the WSJ one is one of
those cases, and I wrote
to the author telling him so and why ... I haven't received a response yet,
and may not, but maybe,
just maybe, next time he'll check his facts better before publishing such an
inbalanced and inaccurate
piece.

73,
Carl - wk3c

2458. Re: Is th ARRL making its point or getting laughed at? WSJ

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 22:10:15 UTC
From: R J Carpenter <rcarpen@erols.com>
Message-ID: <40620734$0$3049$61fed72c@news.rcn.com>
Source record: 27445

"Paul_Morphy" <nopaul_morphy2@coolgoose.com> wrote in message
news:iuh8c.14106$tY6.409609@bgtnsc04-news.ops.worldnet.att.net...
>
> Line noise also means wasted power and damage to components. BPL may, at
> least, get American power companies to clean up their acts.

The local power line EMI person - whom I believe - says that the power lost in creating EMI is trivial. Anyhow the currents would flow in these loops even if there weren't a poor contact generating the EMI. He says even dirty insulators are a minor loss. The main economic advantage to the power company of fixing EMI is that it might indicate am impeding failure. As you say, BPL might induce them to clean up the EMI - or to turn up the wick on the BPL in the dark of night.

2459. Re: Wire Wrap Wire (WWW?)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 22:11:23 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403241411.382bdfa8@posting.google.com>
Source record: 27446

brokebob@aol.com (Brokebob) wrote in message
news:<20040323091034.26909.00000181@mb-m21.aol.com>...
> Anyone know where I can come by some 30 ga wire wrap wire? I am being told
> that that is old technology. Gee whiz, I am old!
>
> Bob
> brokebob@aol.com (broke=not working, retired=not working, retired=broke)

Google search for "wirewrap wire": first hit, RP Electronics, claims
to have it in stock in three colours, in 100 foot put-up.

Google search for "wire wrap wire": early hit, MarVac Electronics,
has it, probably in stock, in a wide variety of forms and colours.

Other hits are likely candidates as well.

Cheers,
Tom

2460. Re: radio receiver "alignment"

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 22:56:50 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <cMG37KAyIhYAFwp9@ddwyer.demon.co.uk>
Source record: 27297
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

```
In article <14ytqp6k5r853$.dlg@ID-222894.news.uni-berlin.de>, Active8
<reply2group@ndbbm.net> writes
>On Tue, 23 Mar 2004 17:07:59 -0500, Lou wrote:
>
>> "Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
>> news:8g51601ae18e16ikhh5138j5dduiri009r@4ax.com...
>>> On Tue, 23 Mar 2004 14:13:35 -0500, "Lou"
>>> <FFSTA17NO@SPAMACCESS995.COM> wrote:
>>>
>>>>I have a bench full of equipment and use it only to get me out of the
>> dark,
>>>>if no signal at all. Once I get past that, I use my own ears. I get far
>>>>better audio.
>>>>Instruments just don't cut it for "listening" audio. Lou
>>>
>>> A aging G3 friend of mine would agree with you here. He seldom resorts
>>> to anything more than a DVM and a capacitance bridge to carry out
>>> quite difficult repairs. I, OTOH, am totally stuffed without a full
>>> schematic, my 'scope, signal generator, frequency counter, spectrum
>>> analyser and just about anything else you can think of. I once knew a
>>> totally blind guy from Hastings who repaired radios without *any* test
>>> equipment or schematics, seemingly by 'feeling his way around' the
>>> circuit board and listening for appropriate responses. No way I could
>>> ever do that: incredible. And I've met many others who have similar
>>> abilities, too, over the years.
>>> --
>>>
>>> The BBC: Licensed at public expense to spread lies.
>>
>> The blind do have a good sense about them. They have to! It is really
>> amazing what they can do. Lou
>
>Reminds me of the blind guy who'd say to me, "Good morning, Mike,"
>just from the sound of my footsteps.

Draw a parallel with the medical profession.
They dont design the product just repair it.
How many have a natural diagnostic ability or a good technician.

--
ddwyer
```

2461. Re: best architecture for a homebrewed single-station FM broadcast dx receiver?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 23:03:27 UTC
From: peg@slingshot.co.nz
Message-ID: <c3t43v$a43$1@xuxa.iecc.com>
Source record: 27298
Cross-posted to: rec.radio.broadcasting,sci.electronics,rec.radio.amateur.homebrew

alanh_27@yahoo.com (Alan Horowitz) wrote in message news:<c3prjd$b6f$1@xuxa.iecc.com>...
> a city I visit frequently -or more precisely, it's exurban outskirts -
> has only one mellow-Jazz FM-broadcast station, the only one for many
> hundreds of miles.
>
> thus I have decided to build my own single-station hi-performance
> receiver to get the one station.
>
> I know enough to know that ideally, the bulk of the gain,
> directionality, selectivity should be at the antenna itself. Or even
> more to the point, tower height. At least ideally. And
> hi-performance single FM channel yagi's are easily spec'd from a
> number of antenna houses. So that issue is not being placed on this
> table.
>
> The rest of the gain budget is.
>
> Let the discussions begin. For example, what approach do the known
> "name" receivers (Kloss Model One, GE Super Radio) use? can a
> homebrewer do better?
> Which commercial house builds the best resonant chambers for the 108
> Mhz frequency? Can be be done easily at home? how about the
> demodulation and audio portions?

Low noise masthead amplifier

2462. Re: Is th ARRL making its point or getting laughed at? WSJ

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-24 23:54:43 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <7dp8c.15562$tY6.456223@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27299

"R J Carpenter" <rcarpen@erols.com> wrote in message
news:40620734$0$3049$61fed72c@news.rcn.com...
>
> "Paul_Morphy" <nopaul_morphy2@coolgoose.com> wrote in message
> news:iuh8c.14106$tY6.409609@bgtnsc04-news.ops.worldnet.att.net...
> >
> > Line noise also means wasted power and damage to components. BPL may, at
> > least, get American power companies to clean up their acts.
>
> The local power line EMI person - whom I believe - says that the power
lost
> in creating EMI is trivial. Anyhow the currents would flow in these loops
> even if there weren't a poor contact generating the EMI. He says even
dirty
> insulators are a minor loss. The main economic advantage to the power
> company of fixing EMI is that it might indicate am impeding failure. As
you
> say, BPL might induce them to clean up the EMI - or to turn up the wick on
> the BPL in the dark of night.

If you read that your power company is letting out bids for 1.5-kW HF amps,
you'll know which course they chose. :>

"PM"

2463. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-25 00:17:27 UTC
From: Rex <notreally@hotmail.invalid>
Message-ID: <3p8460dhllatbid0uhj0829e1bnhtirecv@4ax.com>
Source record: 27300
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 23 Mar 2004 23:50:18 -0800, k7itm@aol.com (Tom Bruhns) wrote:

>with my capacitance tweezers

That sounds interesting. I have used regular tweezers to slip sm caps into a fixture I made. This goes pretty fast except when I accidentally twang a part into some far and unknown location.

Did you make these youself? Can you give a quick description.

I can think how I could make low capacitance tweezers, but not how to flexibly connect them to a capacitance meter and get consistant readings.

2464. Re: Broadband tube driver circuit needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-25 01:04:57 UTC
From: cabbanis <cabbanis@cabbanis.org.uk>
Message-ID: <c3tb82$3ut$1@newsg2.svr.pol.co.uk>
Source record: 27301

```
QRP HomeBuilder web site is at
http://www.qrp.pops.net/
and they have coil winding software
```

2465. Re: Wire Wrap Wire (WWW?)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-25 02:03:52 UTC
From: john graesser <graesser@tca.net>
Message-ID: <1064famihcvmcfc@corp.supernews.com>
Source record: 27302

"xpyttl" <xpyttl_NOSPAM@earthling.net> wrote in message
news:1060kd799hv38e6@corp.supernews.com...
> Would you believe - Radio Shack.
>
> They only have three colors, though.

Are you sure it is 30 gauge? I seem to remember RS wire as 28 gauge. I still have a full bag of ww wire spools, along with several hundred sockets, I built many a small machine like an cosmac elf with ww.

2466. Re: radio receiver "alignment"

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-25 02:33:40 UTC
From: Lou <FFSTA17NO@SPAMACCESS995.COM>
Message-ID: <lyr8c.8446$5M.278959@dfw-read.news.verio.net>
Source record: 27303
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

He could have figured the walkie talkies were your loss, since you now couldn't use them. But to play with his tools, now that was personal. Lou

"art" <art_not_carney@nospam.com> wrote in message news:40618F8D.7E0073D5@nospam.com...
> Before the walkie talkie disassemble, when I was about four I
> found his tape measure. I could not figure it out how it worked,
>
> so I took it apart by removing the four phillips screws that held the
> case together. big mistake !
>
> I was lucky and I almost poked my eye out when the spring
> released from the case and hit me in the face!
>
> No way could I put it all back in the case so I just shoved all
> of it inside the toolbox and replaced the lock (easy to open with a bobby pin).
>
> About a week later when he opened up that toolbox is when I got my butt whipped
> !
>
> So I guess the om cut me little slack with the walkie talikes.
>
> art
>
>
> Paul wrote:
>
> > On Tue, 23 Mar 2004 19:22:18 GMT, art <art_not_carney@nospam.com>
> > wrote:
> >
> > >That's nothing. I got a better story..
> > >
> > >Dad bought a pair of walkie talkies back in 1964 when I was 5 yr old,
> > >I found the soldering iron (always watched him fix the tv sets for people)
> > >
> > >and removed every part on the pc board from one of the wt !
> > >
> > >When he got home, I thought he would whip my butt but instead
> > >he gave me a big pat on the head and was proud of my work !
> >

> > Personally, I'd have been a little miffed to say the least, but it's
> > great for you that you had a relationship like that with your father.
> > --
> >
> > The BBC: Licensed at public expense to spread lies.
>

2467. Re: BPL: Is th ARRL making its point or getting laughed at? WSJ

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-25 06:25:57 UTC
From: Dana Myers <k6jq@arrl.net>
Message-ID: <406279a1$1@wobble>
Source record: 27304

John Walton wrote:

> In This Power Play,
> High-Wire Act Riles
> Ham-Radio Fans
>
> New Use for Lines Sparks
> Tension With Operators;
> 'Firestorm' in Penn Yan
> By KEN BROWN
> Staff Reporter of THE WALL STREET JOURNAL
> March 23, 2004; Page A1

> Matt Oja, an executive at
> Progress Energy, whose test Mr. Powell visited. "This is a fairly vocal
> group that has been whipped into a frenzy by their organization."

Heh. Does anyone else remember the mid-1990s frenzy of email initiated by a considerably more naive ARRL against the perceived threat of "little LEOs"?

Activism is the enemy of innovation in amateur radio.

Dana K6JQ

2468. tube based power supply

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-25 07:12:50 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BC87F0A6.2CC2%outhouse@midcoast.com>
Source record: 27305

I am looking for info regarding a simple power supply with a full wave
rectifier (I got a 6X5).
Mainly I need to know the 'to be expected output voltage' (capacitor
filter)for any input. I don't have info on that.
Do the formulas for solid state rectifiers apply??

73 Uwe

2469. Re: Wire Wrap Wire (WWW?)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-25 09:38:29 UTC
From: Rex <notreally@hotmail.invalid>
Message-ID: <cs95605iu2o5sqag7lvperu42mv4pr74u1@4ax.com>
Source record: 27306

On Wed, 24 Mar 2004 20:03:52 -0600, "john graesser" <graesser@tca.net>
wrote:

>Are you sure it is 30 gauge?

30 gauge is the standard gauge for wire-wrap wire.
I've used it a lot for building up one-off circuit boards. This is by
soldering, not wire-wrapping. The insulation type does make quite a
difference if you solder it. I think Kynar is the one that works well.

2470. Re: tube based power supply

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-25 11:12:11 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <f8z8c.4295$wg1.3379@edtnps84>
Source record: 27307

Behold, Uwe signalled from keyed 4-1000A filament:

> I am looking for info regarding a simple power supply with a full wave
> rectifier (I got a 6X5).
> Mainly I need to know the 'to be expected output voltage' (capacitor
> filter)for any input. I don't have info on that. Do the formulas for
> solid state rectifiers apply??

Yup! However tube rectifiers don't like large caps. 10-20uF should be
enough.

If you need better regulation or hum reduction, use a higher tranny
voltage and a choke-input filter.

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

2471. Re: tube based power supply

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-25 13:36:37 UTC
From: Hans Summers <hans.summers@tudor.com>
Message-ID: <c3un95$2agsq3$1@ID-61331.news.uni-berlin.de>
Source record: 27308

"Uwe" <outhouse@midcoast.com> wrote in message
news:BC87F0A6.2CC2%outhouse@midcoast.com...
> I am looking for info regarding a simple power supply with a full wave
> rectifier (I got a 6X5).
> Mainly I need to know the 'to be expected output voltage' (capacitor
> filter)for any input. I don't have info on that.
> Do the formulas for solid state rectifiers apply??

See http://www.hanssummers.com/radio/glowbug/psu/index.htm

I use a GZ33 rectifier valve, followed by pi-filter containing a 16uF capacitor, 5H choke, and 400uF capacitor.

I am no expert but from what I have learnt the following points are important:

1. The first capacitor should be relatively low value (my 16uF seemed about right). This capacitor should also be a very sturdy type, so that it is unlikely to fail. A less robust electrolytic in this location might fail and short out, destroying the rectifier valve in the process. Therefore I use an overspecified bipolar capacitor in this location.

2. Don't forget a bleeder resistor across the output, essential for your safety! This will discharge the capacitors within some seconds of switching off, making it safe to work on your equipment.

3. Small resistors (I use 55 ohm) in series with the rectifier anodes are needed to protect the valve from switch-on surge currents.

I also use a VR150/30 gas filled regulator valve to produce a 150V regulated output in addition to the 350V HT.

73

Hans G0UPL
http://www.HansSummers.com

2472. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-25 15:03:27 UTC
From: Fred Bartoli <n_o_b_o_d_y@hotmail.com>
Message-ID: <4062f4c1$0$5579$626a14ce@news.free.fr>
Source record: 27309
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Tom Bruhns" <k7itm@aol.com> a crit dans le message de news:
3200347.0403232350.2152f528@posting.google.com...
> "Fred Bartoli"
<fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo> wrote in
message news:<4060791b$0$292$636a15ce@news.free.fr>...
> ...
> > Tom,
> > do you know any supplier of such for proto quantity ?
> > I need 1n/0805 and 4.7n/1206.
> > I can't find any of these and I feel I'll have to buy a handfull of 5%,
sort
> > them and maybe adapt the resitors values to what the lot would kindly
give
> > me.
> > Not very entertaining.
>
> Followup on my previous offer: I have quantities of 3.9nF, 6.8nF and
> 8.2nF 1%, and a decent supply of 1.0nF 1%, but no 4.7nF rated at 1%.
> If I had the task of finding a dozen or two 1% 4.7nF parts, I'd just
> get a hundred 5% parts, make up a set of maybe ten bins (or just
> divide a sheet of paper into ten or twenty areas) in 1% increments,
> and sit down for about five minutes with my capacitance tweezers. The
> sorting goes really fast that way: pick up a part with the tweezers,
> read its value and drop it into the right bin.
>
> Cheers,
> Tom

Thanks for your offer Tom.

I email you in private.

Fred.

2473. ceramic cap markings

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-25 15:12:14 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <ajt5601q7grnftqubvhaj2vlik45p9ck9e@4ax.com>
Source record: 27310
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Hi,

If the black-tipped ceramics indicate NPO., what is signified by the
orange-tipped and yellow-tipped varieties?

p
--

The BBC: Licensed at public expense to spread lies.

2474. Re: ceramic cap markings

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-25 16:51:19 UTC
From: Walter Harley <walterh@cafewalterNOSPAM.com>
Message-ID: <c3v2m7kcs0@216.39.172.65>
Source record: 27311
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:ajt5601q7grnftqubvhaj2vlik45p9ck9e@4ax.com...
> Hi,
>
> If the black-tipped ceramics indicate NPO., what is signified by the
> orange-tipped and yellow-tipped varieties?

Wouldn't it be great if there were industry standard color codes for capacitors? But so far as I know, there aren't. I don't think there's any guarantee that black means NPO across all manufacturers, nor do I think there's a consistent meaning to orange and yellow.

2475. Re: ceramic cap markings

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-25 17:40:53 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <10666ct5hhj1s27@corp.supernews.com>
Source record: 27312
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message
news:ajt5601q7grnftqubvhaj2vlik45p9ck9e@4ax.com...
> Hi,
>
> If the black-tipped ceramics indicate NPO., what is signified by the
> orange-tipped and yellow-tipped varieties?
>
> p
> --
>
> The BBC: Licensed at public expense to spread lies.

Gay manufacturing engineers?

2476. Re: tube based power supply

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-25 18:47:16 UTC
From: averyfineman@aol.com
Message-ID: <20040325134716.00150.00000006@mb-m11.aol.com>
Source record: 27313

In article <BC87F0A6.2CC2%outhouse@midcoast.com>, Uwe <outhouse@midcoast.com>
writes:

>I am looking for info regarding a simple power supply with a full wave
>rectifier (I got a 6X5).
>Mainly I need to know the 'to be expected output voltage' (capacitor
>filter)for any input. I don't have info on that.
>Do the formulas for solid state rectifiers apply??

Not quite. The voltage drop across vacuum diodes is
considerably higher and varies with different rectifier diodes,
typically 40 to as much as 100 Volts. You can find some
representative curves of DC output voltages versus AC input
for capacitor-input circuits in older texts of 40 to 50 years
ago. Some old vacuum tube data manuals give 'typical'
voltage drop values.

You can get an approximation for the peak DC output by
taking 1.4 times the AC RMS input, subtracting about 50
volts from that to begin a rectifier circuit for a 50 to 100 mA
HV supply. From there on you can pin down more exact
values with rectifier tube data.

A slight advantage of vacuum tubes in capacitor-input rectifier
circuits was that the very high initial turn-on surge isn't there;
a vacuum tube diode literally turns on slowly as the filament
warms up. In cheaper tube designs that was offset by the
higher heat dissipation of tube rectifiers creating a local hot
spot much higher than with semiconductor rectifier diodes.
[typical heat dissipation of a 5Y3 common dual-diode in 100
Watt units was 15 to 20 Watts all by itself]

Len Anderson
retired (from regular hours) electronic engineer person

2477. Re: best architecture for a homebrewed single-station FM broadcast dx receiver?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-25 21:36:29 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <c3vjct$sr6$1@xuxa.iecc.com>
Source record: 27315
Cross-posted to: rec.radio.broadcasting,sci.electronics,rec.radio.amateur.homebrew

For about the last 15 years I have been listening to NPR at 89.5 MHz while riding my bike for an hour or two on nice days. There are several locations where many radios don't receive and lose the station and sometimes capture another close station. I've been buying used portables at garage sales for $10.00 or less and comparing their performance. So far I haven't found any of the Walkmans or Sports radios that are acceptable and to date the best has been a Sony ICF-34, much better than my Grundig Yacht Boy 400, but I can't risk it to try my Sony 2010. I've built and/or modified many radios and often thought about trying to make a better 89.5 radio but I don't think there's anyway I can beat the commercial jobs especially when I can get them for $10.00 or less. Generally I prefer not to use headphones and instead fasten the portable to my handlebars so I can hear the radio and local sounds. The radios take a pretty good beating but few have failed from the vibration or minor crashes.
In the past I've lived in somewhat remote locations where I couldn't get the stations I wanted and the best solution was a good antenna with directivity and gain as high up as you can get it! But I can't do that on my bike.
However if you come up with a good home brew solution please let me know.
73
Hank WD5JFR
"Alan Horowitz" <alanh_27@yahoo.com> wrote in message
news:c3prjd$b6f$1@xuxa.iecc.com...
> a city I visit frequently -or more precisely, it's exurban outskirts -
> has only one mellow-Jazz FM-broadcast station, the only one for many
> hundreds of miles.
>
> thus I have decided to build my own single-station hi-performance
> receiver to get the one station.
>
> I know enough to know that ideally, the bulk of the gain,
> directionality, selectivity should be at the antenna itself. Or even
> more to the point, tower height. At least ideally. And
> hi-performance single FM channel yagi's are easily spec'd from a
> number of antenna houses. So that issue is not being placed on this
> table.
>
> The rest of the gain budget is.
>
> Let the discussions begin. For example, what approach do the known
> "name" receivers (Kloss Model One, GE Super Radio) use? can a
> homebrewer do better?
> Which commercial house builds the best resonant chambers for the 108

> Mhz frequency? Can be be done easily at home? how about the
> demodulation and audio portions?
>

2478. Re: tube based power supply

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-25 21:41:03 UTC
From: N2EY@AOL.COM
Message-ID: <c2356669.0403251341.79603eca@posting.google.com>
Source record: 27314

Uwe <outhouse@midcoast.com> wrote in message news:<BC87F0A6.2CC2%outhouse@midcoast.com>...
> I am looking for info regarding a simple power supply with a full wave
> rectifier (I got a 6X5).
> Mainly I need to know the 'to be expected output voltage' (capacitor
> filter)for any input. I don't have info on that.

Check out the tube data sheets, available on several websites. If you need urls, I can dig them up. The RCA HB-3 books are online for sure.

> Do the formulas for solid state rectifiers apply??

Not directly, because tube rectifiers tend to have more drop than silicon. Different types have different drop, too, and it depends on the current load. An important concern in setups where the current draw varies (such as CW transmitters) is the voltage regulation of the supply from minimum to maximum load. Different types of rectifier tube have different regulation performance.

As a limiting case, with a full wave center tap rectifier using a transformer giving Vt volts on either side of center tap, the *maximum* voltage you will get is:

1.4 * Vt (capacitor input filter)
0.9 * Vt (choke input filter)

In real-life applications, the output voltage will be less.

The 6X5 is good up to 70 mA, but has relatively high voltage drop and relatively poor regulation. The 5Y3 is better, the 5V4 better still, and the 5U4 even better. The ultimate in tube rectifiers are the mercury vapor types, but that's a subject for another post.

What transformer do you have available, and what is the application?

btw, I have found that an input capacitor of 40uf is fine with the 5Y3 and larger rectifiers.

73 de Jim, N2EY

2479. Re: ceramic cap markings

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-25 22:01:31 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <1066lm3bvjpk029@corp.supernews.com>
Source record: 27316
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On a "dog bone" capacitor, orange = N150 (-150 ppm/degree C nominal temco) and yellow = N220. These are handy for compensating for the small temperature drift of a good toroidal VFO inductor wound on type 6 powdered iron, by using NPO for most of the tank capacitance, and N150 or N220 for the rest.

Roy Lewallen, W7EL

Paul Burridge wrote:
> Hi,
>
> If the black-tipped ceramics indicate NPO., what is signified by the
> orange-tipped and yellow-tipped varieties?
>
> p

2480. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-25 23:52:32 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403251552.40a2190@posting.google.com>
Source record: 27317
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Go to Agilent home page, search for 16334A.

I also have a homebrew design that works fine, resolution to as little
as 0.01pF, but haven't had a chance to move it from the breadboard
stage to a more finished implementation. It will be tweezers that
connect to a readout box through a single coaxial cable (RG-174-type).
There can be interchangeable "heads" -- tweezers, spring clips, etc.
If/when I get enough round tuits to finish it up, I'll post/publish
something on it.

Cheers,
Tom

Rex <notreally@hotmail.invalid> wrote in message
news:<3p8460dhllatbid0uhj0829e1bnhtirecv@4ax.com>...
> On 23 Mar 2004 23:50:18 -0800, k7itm@aol.com (Tom Bruhns) wrote:
>
> >with my capacitance tweezers
>
> That sounds interesting. I have used regular tweezers to slip sm caps
> into a fixture I made. This goes pretty fast except when I accidentally
> twang a part into some far and unknown location.
>
> Did you make these youself? Can you give a quick description.
>
> I can think how I could make low capacitance tweezers, but not how to
> flexibly connect them to a capacitance meter and get consistant
> readings.

2481. varicaps in parallel

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 02:20:23 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <Y3M8c.9823$gZ3.2977@bignews3.bellsouth.net>
Source record: 27318

Some time ago, someone asked if they could increase the range of a vco by adding another varacap diode in parallel with the existing one. The answer given was that it wouldn't change the tuning range, since the min-max capacitance ratio didn't change. The answer sounded technically correct, but also counter to gut feel. As it turns out, it is only partly correct.

Consider using conventional tuning capacitors. Hammarlund used to make a line of double bearing variable caps in a range of max capacitance ratings. The principle difference between the family members were the number of plates. The 25pf variable would have had about the same min-max capacitance ratio as the 50pf variable. Yet ham lore had it that the 14Opf (well 140mmf in those days) would give a 2:1 frequency tuning range, and a 350pf unit a 3:1 frequency tuning range. In practice this did work out.

The reason is that it is the TOTAL capacitance across the inductor that resonates it to a given frequency. This includes the distributed capacitance in the coil, any stray wiring capacitance, and capacitance found in any parts (such as tube grid to cathode or fet gate to source) connected to the tuned circuit. If the inductor is fixed in value a 4:1 capacitance ratio is needed to give a 2:1 frequency range in a tuned circuit, 9:1 for a 3:1 frequency range (ie: capacitance ratio is the square of the frequency ratio).

Now consider a varicap tuned circuit using diodes with a 5:1 capacitance ratio (say 10-50pf). Our inductor has 5pf of distributed capacitance, and there is 10pf of stray wiring and other capacitance. We would thus have a 25-65pf tuning range or a ratio of 2.6:1 (not the diodes 5:1!)

If we were to add another varicap in parallel the diode tuning range would be 20-100pf, still 5:1. We now need a smaller inductor, so our distributed capacitance drops to maybe 3pf. The stray capacitance remains at 10pf. Now our tuning range is 33-133pf, a ratio of 4:1. Our original tuning ratio was 1.6:1, with the extra diode it would be 2:1.

So the original answer that adding another diode wouldn't double the tuning range is correct, but it would make some improvement.

2482. Unbuilt Heathkits!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 02:46:25 UTC
From: BW <bwellman00@comcast.net>
Message-ID: <pNOdnZ6NH-riBP7dRVn-jw@comcast.com>
Source record: 27319

I have posted three unbuilt Heathkits on Ebay. If you are interested, check them out at

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=3086559566&category=48707

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=2233819902&category=132

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=2233821988&category=132

The bidding ends on Sunday evening. I hope they go to a good, loving home of someone that appreciates the piece of American radio history they will posess.

73,
KG4KLR

2483. .SURPLUS ANTENNA WIRE: For Sale on eBay

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 03:46:18 UTC
From: rfpexec@yahoo.com
Message-ID: <676011a0.0403251946.6f460092@posting.google.com>
Source record: 27320

Hi,

I have listed 10 lots of Surplus 3/16 19-strand Antenna Wire on
eBay.com

Click on this link to see the pictures and listings:
http://search.ebay.com/search/search.dll?query=surplus+antenna+wire&ht=1&sosortproperty=1&
from=R10&BasicSearch=

If the link does not work for you, go to ebay.com and do a search for:
surplus antenna wire

Thanks,

Bill

...

2484. PA Tube Specs HELP!!!!!!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 09:01:21 UTC
From: "Finn S. Mikkelsen" <stampe@city.dk>
Message-ID: <4063f157$0$202$edfadb0f@dread16.news.tele.dk>
Source record: 27321
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Hi There

I've come across a PA TUBE, of wich i need the specs and hopefully i can find them quick with your help....

It's an American Model RCA 813A PA Tube.... Do you have the specs or du you have a URL from wich i could find that info, i would be very gratefull....

TIA

Vy 73 de OZ5Z/Finn
++++

2485. Re: PA Tube Specs HELP!!!!!!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 09:39:17 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <2vt760tl43jh6rsf0q1q2v2ngobk65o7qc@4ax.com>
Source record: 27322
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

On Fri, 26 Mar 2004 10:01:21 +0100, "Finn S. Mikkelsen"
<stampe@city.dk> wrote:

>Hi There
>
>I've come across a PA TUBE, of wich i need the specs and hopefully i can
>find them quick with your help....
>
>It's an American Model RCA 813A PA Tube.... Do you have the specs or du you
>have a URL from wich i could find that info, i would be very gratefull....

Hey! Classic toob. :-)
--

The BBC: Licensed at public expense to spread lies.

2486. Paging Reg Edwards...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 09:40:16 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <siu76055enn10dvu6kfnmtgndq3s8ek6n5@4ax.com>
Source record: 27323

Reg,

Did you not get my e-mail?

Paul
--

The BBC: Licensed at public expense to spread lies.

2487. Re: PA Tube Specs HELP!!!!!!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 10:09:16 UTC
From: "Finn S. Mikkelsen" <stampe@city.dk>
Message-ID: <40640142$0$256$edfadb0f@dread16.news.tele.dk>
Source record: 27324
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> skrev i en meddelelse
news:2vt760tl43jh6rsf0q1q2v2ngobk65o7qc@4ax.com...
> On Fri, 26 Mar 2004 10:01:21 +0100, "Finn S. Mikkelsen"
> Hey! Classic toob. :-)

Nice to know, but have you got any specs?? Or reference URL's ???

/Finn
> --
>
> The BBC: Licensed at public expense to spread lies.

2488. Re: PA Tube Specs HELP!!!!!!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 10:22:15 UTC
From: "Finn S. Mikkelsen" <stampe@city.dk>
Message-ID: <4064044e$0$211$edfadb0f@dread16.news.tele.dk>
Source record: 27325
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Hi....

Found the specs.... Thanks for the help...

400 W phone and 500 watt cw...

Anybody know of a dealership, where i could buy one or have an estimate of a price... Want to sell mine and need to know the current price...

Vy 73 de OZ5Z/Finn
++++
"Finn S. Mikkelsen" <stampe@city.dk> skrev i en meddelelse news:4063f157$0$202$edfadb0f@dread16.news.tele.dk...
> Hi There
>
> I've come across a PA TUBE, of wich i need the specs and hopefully i can
> find them quick with your help....
>
> It's an American Model RCA 813A PA Tube.... Do you have the specs or du you
> have a URL from wich i could find that info, i would be very gratefull....
>
> TIA
>
> Vy 73 de OZ5Z/Finn
> ++++
>
>
>

2489. Re: PA Tube Specs HELP!!!!!!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 11:53:53 UTC
From: George <sp2brz@pit.gda.pl>
Message-ID: <c415kb$9mc$1@korweta.task.gda.pl>
Source record: 27326
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Uďż˝ytkownik Finn S. Mikkelsen napisaďż˝:

> It's an American Model RCA 813A PA Tube.... Do you have the specs or
du you
> have a URL from wich i could find that info, i would be very
gratefull....
813 = Russian GU13, look there:
http://www.russiantubes.com/prop.php?t=8&p=175
Good luck,
George SP2BRZ.

2490. Re: Paging Reg Edwards...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 12:51:27 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c4190f$jp7$1@titan.btinternet.com>
Source record: 27327

Paul, no I didn't.
I have written to you direct.
Reg.

2491. Re: PA Tube Specs HELP!!!!!!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 13:48:48 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <4xW8c.22138$tY6.645456@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27328
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

"Finn S. Mikkelsen" <stampe@city.dk> wrote in message
news:4064044e$0$211$edfadb0f@dread16.news.tele.dk...
> Hi....
>
> Found the specs.... Thanks for the help...
>
> 400 W phone and 500 watt cw...
>
> Anybody know of a dealership, where i could buy one or have an estimate of
a
> price... Want to sell mine and need to know the current price...

There are quite a few on eBay, going for less than USD15 from the looks of
it. Go to ebay.com and search for "813 tube." You may as well keep it as a
souvenir.

"PM"

2492. Re: Unbuilt Heathkits!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 14:10:06 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <OKednUSXmJ6dpPndRVn-hA@comcast.com>
Source record: 27329

I will unbuild your Heathkits, then we can all make a lot of money.

in fairness, i sold an unfinished Heath audio spec analyzer for about $700
when EBay was first getting rolling. I used the money to buy a fine bottle
of Bordeaux.

"BW" <bwellman00@comcast.net> wrote in message
news:pNOdnZ6NH-riBP7dRVn-jw@comcast.com...
> I have posted three unbuilt Heathkits on Ebay. If you are interested,
check
> them out at
>
>
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=3086559566&category=48707
>
> http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=2233819902&category=132
>
> http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=2233821988&category=132
>
> The bidding ends on Sunday evening. I hope they go to a good, loving home
> of someone that appreciates the piece of American radio history they will
> posess.
>
> 73,
> KG4KLR
>
>
>

2493. Link pasted from alt.binaries.schematics.electronic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 14:27:24 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <joydnQPFz8KRoPndRVn-uA@comcast.com>
Source record: 27330

here's a link to a very oddly performing oscope offered on EBay:

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=3805158534&category=58282

how do they manage to get the trace to run into the bezel?

2494. Re: Paging Reg Edwards...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 15:12:58 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <i0i860d6n14jl8ejlnm0lhn6r4otsokcqu@4ax.com>
Source record: 27331

On Fri, 26 Mar 2004 12:51:27 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@ZZZbtinternet.com> wrote:

>Paul, no I didn't.
>I have written to you direct.

Nothing received but the usual spam here I'm afraid, Reg. :-(
No matter. I just believe I've identified a bug in Solnoid3 that you
might care to look into and sort out, should the mood take you. :-)
I can post the details here if you prefer.

Paul
--

The BBC: Licensed at public expense to spread lies.

2495. Re: FS Ad: Electronic Components including TIL311 Hex Displays - LEDs - TTL Chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 17:10:21 UTC
From: jrparts@excite.com
Message-ID: <ed45b0c5.0403260910.1c1cf66c@posting.google.com>
Source record: 27332
Cross-posted to: rec.ham-radio.swap,rec.radio.amateur.homebrew,uk.radio.amateur

Most of the components listed below are still available.
Some of the quantities have changed.

jrparts@excite.com (Parts & More) wrote:
> All prices are in US Funds.
>
> QTY. Part # Unit Price Description
> ---- --------- ---------- -----------
> OPTO.
>
> 54 TIL311 $7.00 ea. The TI TIL-311 is a Hexadecimal Dot
> Matrix Display with integral TTL driver
> electronics to accept, store & display
> 4-bit binary data, Epoxy package
> (Note: This part wholesales at about $16.50 each)
>
> 8 TIL311A $7.00 ea. The TI TIL-311A is a Hexadecimal Dot
> Matrix Display with integral TTL driver
> circuit to accept, store & display
> 4-bit binary data, Plastic package
>
> 11 DIS1417 $7.00 ea. The TI DIS-1417 is a Hexadecimal Dot
> Matrix Display with integral TTL driver
> circuit to accept, store & display
> 4-bit binary data, Epoxy package
>
> For a copy of the TIL311 Datasheet see:
> http://www-s.ti.com/sc/ds/til311.pdf and it is mirrored at
> http://umwnt1.physics.lsa.umich.edu/mttc/images/til311.pdf
>
> 275 Green LED $0.10 ea. Rectangular 5mm x 2mm face/lens
> $17.50 per bag of 250 ($0.07 each) and
>
> 7,250 Red LED $0.10 ea. T1 3/4, 5mm Diameter or 0.2" Diameter
> Sharp P/N: GL5PR4 (5mA at 1.9V)
> $17.50 per bag of 250 ($0.07 each) and
> $100 per box of 2000 ($0.05 each)
>
> 106 MAN6440 $0.95 ea. Dual Digit, Green 7 Segment display,
> 0.56" tall character, Common Cathode
> $15 per tube of 20 MAN- 6440 ($0.75 ea.)
>

> 85 FND6740 $0.95 ea. Dual Digit, Red 7 Segment display,
> 0.56" tall character, Common Cathode
> $15 per tube of 20 FND-6740 ($0.75 ea.)
>
>
> TTL CHIPS, DIP Package
>
> 525 7407N $0.18 ea. $4.00 per tube of 25 ($0.16 each)
> Hex Non-Inverted Buffer with
> Open-Collector outputs
>
> 605 74ALS20AN $0.19 ea. $4.00 per tube of 25 ($0.16 each)
> Dual 4-Input Positive NAND Gates
>
> 240 74ALS27AN $0.19 ea. $4.00 per tube of 25 ($0.16 each)
> Triple 3-Input Positive NOR Gates
>
> 1,325 74LS74AN $0.25 ea. $5.00 per tube of 25 ($0.20 each)
> Dual D-Type Positive Edge-triggered
> Flip-Flops with Preset and Clear.
>
> 100 74ALS74AN $0.25 ea. $5.00 per tube of 25 ($0.20 each)
> Dual D-Type Positive Edge-triggered
> Flip-Flops with Preset and Clear.
>
>
> RESISTORS
>
> 55,900 100 Ohm, 5%, 1/4 Watt Carbon film resistor, $1 per 100,
> $15 per box of 5000 or
> $100 for 50,000 pieces.
>
> 3,400 220 Ohm, 5%, 1/4 Watt Carbon film resistor, $1 per 100,
> $12 per box of 3400 or
>
> 3,400 680 Ohm, 5%, 1/4 Watt Carbon film resistor, $1 per 100,
> $12 per box of 3400 or
>
> A pack of 100 resistors is $4 inclusive shipping to anywhere
> in the US and Canada
>
> e-mail: jrparts@excite.com
>
> Minimum purchase $4 including postage.
>
> No shipping is included in the above prices. To quote a
> total including shipping, I require your full ZIP code or
> postal code in addition to a list of what you are interested
> in. Please specify the country for international orders
> outside of North America. The shipping you will be quoted

> is the cost of the postage stamp (plus insurance if requested).
>
> The only part that I will ship for a total of $4 (by regular
> mail) to anywhere in the US and Canada is a pack of 100
> resistors.
>
> All components are new. All semi-conductors are stored in
> anti-static tubes/bags or on anti-static foam if you purchase
> less than a tube/bag.
>
> Offers on the lot are welcome. Keep in mind that I am looking
> for a price below wholesale, but more than the commercial buyers
> of surplus electronic parts are offering.

2496. Re: Paging Reg Edwards...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 17:15:56 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c41ogccfo1@sparta.btinternet.com>
Source record: 27333

Paul,

I am very reluctant to discuss this sort of thing on a newsgroup. It is likely to develop into a multi-post thread with sub-threads, aggravated by do-gooders and mischief-makers who imagine they know more about the program and coils than either you or I. Misunderstandings and aggro galore. The end result being inconclusive and a general loss of confidence in everything. And I venture to say, all this palaver when a bug in the source code does not exist - all being due to using a program outside its range of useability or some similar misunderstanding because I can't write the introduction to a program in the form of a book.

As I said in my e-mail which you havn't yet received, try sending me another test message as follows -

(1) Do not use my e-mail address as may be found in newsgroup messages.

(2) My correct e-mail address is g4fgq.regp@btinternet.com

(3) Ensure my address is correct in your address book.

(4) In the "To" line enter "Reg Edwards" without the inverted commas, and nothing else.

(5) In the "Subject" line use all capital letters and identify yourself.

This may help to distinguish your message from the 300 spam messages I receive every day. My service provider, the worst ever, doesn't help either.

Yours, Reg Edwards.

2497. Rare 102 year old edison book

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 19:43:58 UTC
From: Keith <salmo@nf.sympatico.ca>
Message-ID: <2K%8c.31$Np3.1648@ursa-nb00s0.nbnet.nb.ca>
Source record: 27334

Rare First Edition -Printed in 1902 - Telegraphy Self-Taught by Theodore A. Edison.

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=4200083729

2498. Re: Rare 102 year old edison book

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 21:22:22 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <ia19c.45770$PY1.854218@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27335

"Keith" <salmo@nf.sympatico.ca> wrote in message
news:2K%8c.31$Np3.1648@ursa-nb00s0.nbnet.nb.ca...
> Rare First Edition -Printed in 1902 - Telegraphy Self-Taught by Theodore
A.
> Edison.
>
> http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=4200083729

Let's see. Push key down briefly for dot, three times longer for dash. A =
._ , B = _..., etc.

What's on page 2?

And no photo? Not even a scan? A picture is worth a thousand words, and
that's a lotta dits and dahs.

"PM"

2499. I NEED YOUR HELP

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 21:37:05 UTC
From: "Gary C. Cash" <cash@in-tch.com>
Message-ID: <c427nomjl1@news.tamerica.net>
Source record: 27336
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy,rec.radio.amateur.space,tnn.radio.a

TO ALL RADIO AMATEURS:

I, ALONG WITH A FRIEND OF MINE, W7ARO (Ed Bodenberger), ARE TRYING TO
COMPILE A LIST OF AMATEUR RADIO OPERATORS AND THEIR CALLSIGNS FOR HISTORICAL
PURPOSES. ALL OF THE FOLLOWING NAMES ARE THOSE OF SILENT KEYS FOR WHICH WE
HAVE NO CALLSIGN AVAILABLE AND ALL ARE FROM MONTANA. IF YOU HAVE AT SOMETIME
WORKED ANY OF THESE INDIVIDUALS AND HAVE RECORD OF A CALLSIGN YOU RESPONSE
WOULD BE GREATLY APPRECIATED.

TOM GIBSON
HAROLD PETERSON
ED BINGLER
RON WRIGHT
BILL MONEYSMITH
PHIL HAGMAN
OSCAR RICE

73's
GARY
WQ7S
cash@in-tch.com

2500. Re: PA Tube Specs HELP!!!!!!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 22:04:34 UTC
From: Ken Fowler <ko6no@yahoo.com>
Message-ID: <YdCdnUbihvpuNfnd4p2dnA@comcast.com>
Source record: 27337
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur

On 26-Mar-2004, "Finn S. Mikkelsen" <stampe@city.dk> wrote:

> Anybody know of a dealership, where i could buy one or have an estimate of a
> price... Want to sell mine and need to know the current price...

As someone else said, ebay is an indicator of what buyers will pay for used items. For a price on
new tubes, try RF Parts.

2501. Re: I NEED YOUR HELP

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 22:54:41 UTC
From: K3HVG <jeepp@adelphia.net>
Message-ID: <keOdnaZWPtwNLvndRVn-hA@adelphia.com>
Source record: 27338
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy,rec.radio.amateur.space,tnn.radio.a

I'm not certain, maybe just a coincidence, but there's a Tom Gibson I know/met who's has some ties to Montana. He may have worked up there for some time. This fellow was also a maritime operator and is currently (I hope!) an officer on the museum ship John Brown (Liberty Ship in Baltimore). Last time I saw Tom was aboard last year. Might this be the same person?

Gary C. Cash wrote:
> TO ALL RADIO AMATEURS:
>
> I, ALONG WITH A FRIEND OF MINE, W7ARO (Ed Bodenberger), ARE TRYING TO
> COMPILE A LIST OF AMATEUR RADIO OPERATORS AND THEIR CALLSIGNS FOR HISTORICAL
> PURPOSES. ALL OF THE FOLLOWING NAMES ARE THOSE OF SILENT KEYS FOR WHICH WE
> HAVE NO CALLSIGN AVAILABLE AND ALL ARE FROM MONTANA. IF YOU HAVE AT SOMETIME
> WORKED ANY OF THESE INDIVIDUALS AND HAVE RECORD OF A CALLSIGN YOU RESPONSE
> WOULD BE GREATLY APPRECIATED.
>
> TOM GIBSON
> HAROLD PETERSON
> ED BINGLER
> RON WRIGHT
> BILL MONEYSMITH
> PHIL HAGMAN
> OSCAR RICE
>
> 73's
> GARY
> WQ7S
> cash@in-tch.com
>
>
>
>

2502. Re: Paging Reg Edwards...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-26 23:09:47 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <0jd960tog8476ob4859q3jt7ou0p6d9d71@4ax.com>
Source record: 27339

On Fri, 26 Mar 2004 17:15:56 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@ZZZbtinternet.com> wrote:

>Paul,
>
>I am very reluctant to discuss this sort of thing on a newsgroup. It is
>likely to develop into a multi-post thread with sub-threads, aggravated by
>do-gooders and mischief-makers who imagine they know more about the program
>and coils than either you or I. Misunderstandings and aggro galore. The end
>result being inconclusive and a general loss of confidence in everything.
>And I venture to say, all this palaver when a bug in the source code does
>not exist - all being due to using a program outside its range of
>useability or some similar misunderstanding because I can't write the
>introduction to a program in the form of a book.

Fair enough, Reg. I suspect I already know what the problem - if such
it is - may be if you use the C language as I do for this type of
thing. In any event, discretion is assured; no problem.

>As I said in my e-mail which you havn't yet received, try sending me another
>test message as follows -

Okay, Reg. I'll send you a test message first (coming right up) in
accordance with your instructions and set out the circumstances in
full if we can establish contact.
--

The BBC: Licensed at public expense to spread lies.

2503. Re: Wire Wrap Wire (WWW?)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-27 01:27:40 UTC
From: James W <change-to-jw22-at-trlp-dot-com@trlp.com>
Message-ID: <1069m4dkpe1j022@corp.supernews.com>
Source record: 27340

RS calls it "wrapping wire" Part No 278-501 is for the Red Color

http://www.radioshack.com/product.asp?catalog%5Fname=CTLG&product%5Fid=278-501

Brokebob wrote:
> One color is fine with me. The two local stores claim that it is not available
> anymore.
> brokebob@aol.com (broke=not working, retired=not working, retired=broke)

2504. Re: PA Tube Specs HELP!!!!!!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-27 03:51:21 UTC
From: Roger Halstead <Delete-Invallid.groups@tm.net>
Message-ID: <m8u960p17ob3vmsget1ltgjma97uo07kmu@4ax.com>
Source record: 27341
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

On Fri, 26 Mar 2004 12:53:53 +0100, George <sp2brz@pit.gda.pl> wrote:

>U?ytkownik Finn S. Mikkelsen napisa?:
>
> > It's an American Model RCA 813A PA Tube.... Do you have the specs or
>du you
> > have a URL from wich i could find that info, i would be very
>gratefull....
>813 = Russian GU13, look there:
>http://www.russiantubes.com/prop.php?t=8&p=175I

I think they are listing ratings quite a bit less than the US 813.
The plate dissipation is over a 100 watts and they list the output
power as 100 watts. (0.1 KW). Course they may be running class A. I
think the ones I've seen were rated at close to 3000 volts on the
plate and on the order of 250 to 500 watts out depending on class and
duty cycle. I used to run the legal limit with a pair in grounded
grid. (Yup, tetrode in GG <G>). You could darn near read a newspaper
from the light off the plats.

One of the locals just picked up a pair for $10 or $15 each. OTOH that
is about the cheapest I've seen them.

As others have mentioned I'd watch e-bay and see what they are going
for.

Roger Halstead (K8RI & ARRL life member)
(N833R, S/N CD-2 Worlds oldest Debonair)
www.rogerhalstead.com

>Good luck,
>George SP2BRZ.

2505. Re: Link pasted from alt.binaries.schematics.electronic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-27 05:19:17 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <p989c.9663$wg1.5654@edtnps84>
Source record: 27342

Behold, John Walton signalled from keyed 4-1000A filament:

> here's a link to a very oddly performing oscope offered on EBay:
>
> http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=3805158534&category=58282
>
> how do they manage to get the trace to run into the bezel?

Fake trace to sell busted scope?

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

2506. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-27 11:40:18 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <07DNmLAigWZAFwXY@ddwyer.demon.co.uk>
Source record: 27343
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

In
>>
>> That sounds interesting. I have used regular tweezers to slip sm caps
>> into a fixture I made. This goes pretty fast except when I accidentally
>> twang a part into some far and unknown location.
>>
>> Did you make these youself? Can you give a quick description.
>>
>> I can think how I could make low capacitance tweezers, but not how to
>> flexibly connect them to a capacitance meter and get consistant
>> readings.
Wayne Kerr used to make a VHF admittance bridge which serves well for
measuring chips, and they can be bought for less than ï¿½100 (813? bridge)
in UK
leaded low value ceramic and silvered mica have their Tc and loss
modified by the effect of the encapsulation material.
It therefore follows that chips npo chip will be better.
--
ddwyer

2507. What's the value of this inductor? <sigh>

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-27 14:22:16 UTC
From: Paul Burridge <pb@osiris1.notthisbit.co.uk>
Message-ID: <173b6010nti9jt7229in9aeace8p9r6ph3@4ax.com>
Source record: 27344

Hi guys,

I have some surplus axial inductors marked as follows:

uH27 -K
GEL

I would have thought this implied 0.27uH or 270nH? GEL is presumably the maker. However, there's no resonance at 17.6Mhz with 300pF in parallel as might be expected of an inductor of that value. There *is* however, a resonance at 50.6Mhz., which implies that the inductors are actually 33nH. I'm confused. Anyone have any idea as to how to determine the value absolutely? Are makers' marking to be trusted at all?
--

The BBC: Licensed at public expense to spread lies.

2508. Re: PA Tube Specs HELP!!!!!!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-27 16:57:27 UTC
From: George <sp2brz@NOSPAM.pit.gda.pl>
Message-ID: <c44bpu$13v5$1@news.atman.pl>
Source record: 27345
Cross-posted to: rec.radio.amateur,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Roger Halstead wrote:

> I think they are listing ratings quite a bit less than the US 813.
It is only catalogue value. In my practice a Russian tube is much
"stronger" than an American one because uses the massive graphite anode
vs. tinplate.
Regards,
George SP2BRZ.

2509. Re: tube based power supply

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-27 17:23:18 UTC
From: Peter John Lawton <peter_john.lawton@virgin.net>
Message-ID: <4065B885.56A5@virgin.net>
Source record: 27346

Avery Fineman wrote:

> A slight advantage of vacuum tubes in capacitor-input rectifier
> circuits was that the very high initial turn-on surge isn't there;
> a vacuum tube diode literally turns on slowly as the filament
> warms up. In cheaper tube designs that was offset by the
> higher heat dissipation of tube rectifiers creating a local hot
> spot much higher than with semiconductor rectifier diodes.
> [typical heat dissipation of a 5Y3 common dual-diode in 100
> Watt units was 15 to 20 Watts all by itself]

I seem to remember the 5Y3 as directly heated which means it warms up before the rest of the valves in the set so producing high HT value intitially. Need to take this into account with electrolytics.

Peter

> Len Anderson
> retired (from regular hours) electronic engineer person

2510. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-27 17:31:06 UTC
From: John Woodgate <jmw@jmwa.demon.contraspam.yuk>
Message-ID: <Mp6GcNCapbZAFwg7@jmwa.demon.co.uk>
Source record: 27347
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

I read in sci.electronics.design that ddwyer <dd@ddwyer.demon.co.uk>
wrote (in <07DNmLAigWZAFwXY@ddwyer.demon.co.uk>) about 'Extracting the
5th Harmonic', on Sat, 27 Mar 2004:

>Wayne Kerr used to make a VHF admittance bridge which serves well for
>measuring chips, and they can be bought for less than ï¿½100 (813? bridge)

You might well be able to extend its frequency range downwards, too.
IIRC, it needs some very small 1 uF capacitors, which simply weren't
available when it was manufactured.

There is an associated transistor test set which is a walking disaster.
--
Regards, John Woodgate, OOO - Own Opinions Only.
The good news is that nothing is compulsory.
The bad news is that everything is prohibited.
http://www.jmwa.demon.co.uk Also see http://www.isce.org.uk

2511. Re: What's the value of this inductor? <sigh>

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-27 18:20:33 UTC
From: Bob <balbert@access1.net>
Message-ID: <0bSdnf2zVNoFW_jdRVn2vQ@ecrii.com>
Source record: 27348

I would have guessed 27 microhenries with a 20% tolerance.

Bob

2512. Re: Tank circuits: achieving maximum Q

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-27 19:42:12 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c44lejsb1@hercules.btinternet.com>
Source record: 27349

Paul,

I updated program SOLNOID2 to 3 because somebody had difficulty with defining the length of a coil as related to the number of turns when there are only a very few turns on it. Its a more complicated little problem than you might think. But the length of a coil, 1, the number of turns, 1, 2, 3 etc., and the winding pitch are all insisted on by the program.

So to clarify the point I rewrote the operating instructions. The program itself remained unchanged.

==========

You have been led up the garden path by the old wives. The L/C ratio has very little to do with the Q of a resonant circuit. Q is controlled independently by the losses in L and C. Since the loss in L predominates Q = omega*L/R.

The ratio L/C, everything else remaining unchanged, affects only the parallel impedance of the circuit. A high L/C ratio gives a high parallel impedance. You get a higher voltage gain in an amplifier with a high L/C ratio when the load is a parallel tuned circuit.

The parallel impedance is given by L/C/R = Q*Omega*L = Q/Omega/C.

Very often L and C are chosen from what you have in the bottom of the junk box.

Reg, G4FGQ

==========

"Paul Burridge" <pb@osiris1.notthisbit.co.uk> wrote in message news:sm5s50d3csqppe1fepmqvn153vnqkf1fvn@4ax.com...
> On Sun, 21 Mar 2004 18:54:19 +0000 (UTC), "Reg Edwards"
> <g4fgq.regp@ZZZbtinternet.com> wrote:
>
> >Paul, in approaching the problem from your viewpoint havn't you set yourself
> >the task of winding an inductor to have a particular value of Q ?
> >
> >If you intend to use a solenoid then Q can be increased only by increasing
> >its physical size without changing its proportions too much.
> >
> >Utimately you will need to know what is the Q of a particular size coil,
> >number of turns, wire gauge, etc. It will be reduced by its proximity to

> >other components and circuit board by some indeterminate amount. I think
> >you should stop and check whether you have room for the coil in the
> >equipment space available. ;o)
> >
> >Program SOLNOID2 may be of assistance in this onerous task.
> >
> >Download in a few seconds from website below and run immediately.
>
> Reg, SOLNOID2 has been withdrawn from your site IIRC. I *had* been
> using it to great effect, but you presumably made some improvements,
> implemented them, and renamed it SOLNOID3 which is what I now use.
> Great program!
> I'm still none the wiser as to whether it's better to have big-L ||
> small C or vice versa, though. :-/
> BTW, Reg - can you write a program to work out how I'm going to afford
> my Council Tax this year? Thanks! :-)
> --
>
> The BBC: Licensed at public expense to spread lies.

2513. Re: What's the value of this inductor? <sigh>

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-27 20:10:36 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <106bntfpbci67d1@corp.supernews.com>
Source record: 27350

Paul Burridge wrote:

> Hi guys,
>
> I have some surplus axial inductors marked as follows:
>
> uH27 -K
> GEL
>
> I would have thought this implied 0.27uH or 270nH? GEL is presumably
> the maker. However, there's no resonance at 17.6Mhz with 300pF in
> parallel as might be expected of an inductor of that value. There *is*
> however, a resonance at 50.6Mhz., which implies that the inductors are
> actually 33nH. I'm confused. Anyone have any idea as to how to
> determine the value absolutely? Are makers' marking to be trusted at
> all?

50MHz is pretty high -- are you sure it's not 27nH with stray
inductance? Did you measure more than one to check for tolerance as the
OP brings up?

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

2514. Re: I NEED YOUR HELP

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-27 21:02:07 UTC
From: "J. Yazel" <jyazel@netset.com>
Message-ID: <srqb6093v1d0lg7t4othdl09ud1fq6076d@4ax.com>
Source record: 27351
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy,rec.radio.amateur.space,tnn.radio.a

On Fri, 26 Mar 2004 14:37:05 -0700, "Gary C. Cash" <cash@in-tch.com> wrote:

>TO ALL RADIO AMATEURS:
>
>I, ALONG WITH A FRIEND OF MINE, W7ARO (Ed Bodenberger), ARE TRYING TO
>COMPILE A LIST OF AMATEUR RADIO OPERATORS AND THEIR CALLSIGNS FOR HISTORICAL
>PURPOSES. ALL OF THE FOLLOWING NAMES ARE THOSE OF SILENT KEYS FOR WHICH WE
>HAVE NO CALLSIGN AVAILABLE AND ALL ARE FROM MONTANA. IF YOU HAVE AT SOMETIME
>WORKED ANY OF THESE INDIVIDUALS AND HAVE RECORD OF A CALLSIGN YOU RESPONSE
>WOULD BE GREATLY APPRECIATED.
>
>TOM GIBSON
>HAROLD PETERSON
>ED BINGLER
>RON WRIGHT
>BILL MONEYSMITH
>PHIL HAGMAN
>OSCAR RICE
>
>73's
>GARY
>WQ7S
>cash@in-tch.com
> ==

Hi Gary,

I can't help you yet, but in the meantime, please don't use
all capital letters. It is considered to be shouting.

Thanks and 73s.

Jack W8RAG

2515. Re: tube based power supply

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-27 21:20:04 UTC
From: averyfineman@aol.com
Message-ID: <20040327162004.08081.00000055@mb-m18.aol.com>
Source record: 27352

In article <4065B885.56A5@virgin.net>, Peter John Lawton
<peter_john.lawton@virgin.net> writes:

>> A slight advantage of vacuum tubes in capacitor-input rectifier
>> circuits was that the very high initial turn-on surge isn't there;
>> a vacuum tube diode literally turns on slowly as the filament
>> warms up. In cheaper tube designs that was offset by the
>> higher heat dissipation of tube rectifiers creating a local hot
>> spot much higher than with semiconductor rectifier diodes.
>> [typical heat dissipation of a 5Y3 common dual-diode in 100
>> Watt units was 15 to 20 Watts all by itself]
>
>I seem to remember the 5Y3 as directly heated which means it warms up
>before the rest of the valves in the set so producing high HT value
>intitially. Need to take this into account with electrolytics.

By comparison to semiconductor diode rectifiers, any tube/valve
diode type with hard vacuum is slooooooow to turn on. A solid-
state diode starts conducting as soon as forward conduction
voltage is achieved. That causes an enormous (relative) surge in
charging current for the input filter capacitor which, before turn-on,
had no charge at all. Given no load resistance at this point in
time, all of that charging current is flowing in that input filter
capacitor. If the primary power is applied at or near the peak of
AC voltage, the only thing limiting the current surge value is the
transformer total inductance and winding resistance, diode
internal resistance, equivalent series resistance (ESR) of the
input filter capacitor, and wiring resistance (negligible by
comparison). That can be one #$%^&!!! large current pulse.
For any sort of longevity, the solid-state rectifier diodes need to
be selected for their "safe" forward current surge ratings.

For a hard vacuum (as opposed to gas, like mercury-vapor types)
diode, even directly-heated, the initial diode "resistance" goes from
near infinity to near full conduction conditions in many cycles of
the AC input voltage. There is nowhere near the slug of current
at initial turn-on as with solid-state diodes. Tube diode rectifiers
can be classified as "gentle" towards input filter capacitors, so
much so that this surge current was seldom mentioned in older
texts. The conditions you highlight are a slightly different one...

In a tube rectifier, yes, a directly-heated cathode will apply the
full peak voltage quicker than the rest of a radio using indirectly-
heated cathode tubes. The initial load resistance is very high
and the input filter capacitor will thus reach the equal of the peak

AC input voltage. That's the major reason of having a Working Voltage rating of minimum 1.5 times the AC RMS input voltage (allowance for 10% over-nominal line voltage). Once the rest of the tubes warmed up, the load resistance dropped, and now the steady-state condition of the entire supply circuit could be assumed...and the DC output voltage dropped to design levels.

The major cause of failure in millions of 5-tube BC receivers other than tube filament burn-out, was the cheapness of the input filter capacitor. To improve profits of a very economical-to-buy unit, designers brought the working voltages of the (generally) cardboard tube cased electrolytic filter capacitors down to the minimum value. Few of those millions of BC receivers were designed for good heat dissipation...the total filament string dissipation was 17 1/4 Watts plus another 5 W loss in the half-wave diode tube rectifier voltage drop. The actual useable power (the "B+") was 15 W. That would be at least 38 Watts of heat dissipated in a small plastic enclosure. Those waxed cardboard tube cased electrolytics could only dissipate any internal heating (from ESR) through their wire leads.

More robust tube equipment used aluminum-can-cased electrolytics and large areas of aluminum chassis metal to help distribute the internal heating and dissipate it better. Designers used greater safety margins and increased the working voltage ratings of electrolytic and some other capacitors. With higher sales values of such specialized products, they didn't have to skimp on the parts in order to stay market competitive.

In more recent simple power supplies, you will still find some cases of input filter capacitor failures but the incidence of diode rectifier failures has also risen due to designers selecting diodes with lower surge current ratings (not necessarily due to economic reasons...more a case of not paying attention to it). The focus of failure reasons has changed over the years but it is still a rather more complex set of causes involved and not just in circuit design.

One thing I've observed over quite a while of pushing electrons around is that "old" tube-based equipment design talked overly much about voltage levels and neglected current flow things. [I used to be guilty of that but grew out of it due to smoking...of the equipment, not me...:-)] In more "modern" electronics in general, BOTH voltage and current have to be considered equally and basic circuit considerations can't get by with simple rules of thumb for tube circuits.

Len Anderson
retired (from regular hours) electronic engineer person

2516. Re: What's the value of this inductor? <sigh>

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-28 00:33:35 UTC
From: John Jardine <john@jjdesigns.fsnet.co.uk>
Message-ID: <c45627$85j$1@newsg1.svr.pol.co.uk>
Source record: 27353

Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
news:173b6010nti9jt7229in9aeace8p9r6ph3@4ax.com...
> Hi guys,
>
> I have some surplus axial inductors marked as follows:
>
> uH27 -K
> GEL
>
> I would have thought this implied 0.27uH or 270nH? GEL is presumably
> the maker. However, there's no resonance at 17.6Mhz with 300pF in
> parallel as might be expected of an inductor of that value. There *is*
> however, a resonance at 50.6Mhz., which implies that the inductors are
> actually 33nH. I'm confused. Anyone have any idea as to how to
> determine the value absolutely? Are makers' marking to be trusted at
> all?
> --
>
> The BBC: Licensed at public expense to spread lies.

0.27uH is 5ohms at 5MHz.

Set to 5MHz and wind up your 50ohm signal generator to max output (say a
100mV or so). Measure it's voltage using the scope.
Short the inductor across the sig genny terminals and measure the voltage
across the inductor.
Ignore all irrelavencies such as phase angles, stray capacitances, Q factor,
series resistance,skin effects, self resonances etc. Just treat the inductor
as if it's a straight forward potential divider resistance in series with
the 50 ohms of the genny.

Eg. Sig genny open circuit output at 5megs is 100 mV peak-peak
Inductor connected and voltage measured is now 10mV peak-peak.
Therefore 1/10th of the available voltage is across the inductor and 9/10
lost across the genny internal 50ohms.
So inductor looks like 5 ohms therefore,
5ohms = 2 x Pi x 5megs x L?
=270nH. Simple !
Using this method it's easy to get down to the odd few nH.
Exact same method as used by a nice 'inductance meter' design that turned up
in Radcom about 12 years ago

regards
john

2517. Re: What's the value of this inductor? <sigh>

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-28 00:56:05 UTC
From: John Jardine <john@jjdesigns.fsnet.co.uk>
Message-ID: <c457cduvs1@newsg2.svr.pol.co.uk>
Source record: 27354

John Jardine <john@jjdesigns.fsnet.co.uk> wrote in message
news:c45627$85j$1@newsg1.svr.pol.co.uk...
>
> Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
> news:173b6010nti9jt7229in9aeace8p9r6ph3@4ax.com...
> > Hi guys,
> >
> > I have some surplus axial inductors marked as follows:
> >
> > uH27 -K
> > GEL

[clip]
> Therefore 1/10th of the available voltage is across the inductor and 9/10
> lost across the genny internal 50ohms.
> So inductor looks like 5 ohms therefore,
[clip]

Bollocks.
Screwed myself by rushing for easy numbers

0.27uH is actually 8.5ohms at 5MHz

For the 10mv example L would actually be (10mV / (100mv-10mv)/50) =5.55
ohms, equiv' to 176nH.

Sorry!

2518. Re: 1N414B

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-28 01:10:26 UTC
From: paul405 <paul405@ntlworld.com>
Message-ID: <cWp9c.248$54.121@newsfe1-win>
Source record: 27355

HI

TRY A 1N914 (OR ANY SMALL SIGNAL DIODE

DE PAUL

"Prof. Peter Konlechner" <peter.konlechner@aon.at> wrote in message
news:40474ea6$0$23362$91cee783@newsreader01.highway.telekom.at...
> hello all:
>
> could anybody name to me equivalent diodes for 1N414 B which are not
> available in Vienna.
> Many thanks,
> Peter
>
>

2519. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-28 03:37:59 UTC
From: Peter John Lawton <peter_john.lawton@virgin.net>
Message-ID: <40664897.6074@virgin.net>
Source record: 27356

Avery Fineman wrote:
>
> In article <40583945.4745@virgin.net>, Peter John Lawton
> <peter_john.lawton@virgin.net> writes:
>
> >> The above will hold true at any fundamental frequency provided the
> >> rise and fall times are equal and each equal to 0.02 times the
> >> repetition period. Those numbers will change given faster or slower
> >> rise/fall times. All db calculated as 20 x Log (voltage). Width is
> >> determined at the baseline, not the 50% amplitude point.
> >>
> >> Len Anderson
> >> retired (from regular hours) electronic engineer person
> >
> >I wonder what happens to these numbers as the rise/fall time tends to
> >zero?
>
> The harmonic content will increase...but also show dips depending
> on the percentage width relative to the period. I could present those
> (takes only minutes to run the program and transcribe the results)
> but that is academic only. The rise and fall times will NOT be zero
> due to the repetition frequency being high (repetition time short).
>
> Consider that a 3 MHz waveform has a period of 333 1/3 nSec and
> that Paul is using a TTL family inverter to make the square wave.
> Even with a Schmitt trigger inverter the t_r and t_f are going to be
> finite, possibly 15 nSec with a fast device (and some capacitive
> loading or semi-resonant whatever to mess with on- and off-times).
>
> 15 nSec is 4.5% of the repetition period, quite finite...more than I
> showed on the small table given previously.
>
> I'm sure someone out there wants to argue minutae on numbers but
> what is being discussed is a squarish waveform with a repetition
> frequency in the low HF range. Periods are valued in nanoSeconds
> and the on/off times of squaring devices are ALSO in nanoSeconds.
> There's just NOT going to be any sort of "zero" on/off times with
> practical logic devices used by hobbyists.

I just wondered from a theoretical point of view what the program would
say about the harmonic content as you decreased the values you put into
it for t_r and t_f.

> What is not intuitive to me (and to others) is that harmonic energy
> of a rectangular waveform drops drastically by the 5th harmonic

> and is certainly lower than "obvious" numbers bandied about.

This is connected with my question. I am pondering why the energy
available for higher harmonics is less than for the fundamental and also
how your program works out this energy.

> But, also mentioned before by others is that shortening the rect-
> angular waveshape DOES increase the 5th harmonic, as evident
> by the approximate 12 db increase at 40 to 35 percent of the
> repetition period.

Its like pushing the baby on the swing in the park, you only need to
give it the occasional push or pull in the right direction. A 5f
resonator gets has to go for 2.5 cycles in between refuelling from a
square-wave (1:1) of frequency f.
With a mark/space ratio of 2:3 it looks to me as though the 'pull' on
the 5f resonator as the rectangular wave drops will take out all the
energy that was put in on the preceding 'push' - so no 5th harmonic. On
the other hand, 1.5:3.5 (30%) should be just as good for 5th as 1:1 (but
no better).
All that's assuming a zero t_r and t_f. In practice it must be that the
energy transfer to a resonator depends on these times. It seems that the
energy transfer is not so great to a faster resonator. Pursuing the
swing analogy, your arm has to move faster than the swing if you're
going to add to the swings energy.

> An equivalent shortening happens in vacuum tube multipliers
> through biasing (self, fixed, or both) and that can be adjustable
> along with the drive level. It's not quite the same with bipolars
> since the overdrive effects are more saturation than in the self-
> bias conditions of tubes. It's close, though.
>
> From all indications of the Fourier series results, there's a definite
> reason why so few multipliers went beyond tripling. The amount
> of energy (relative to fundamental and taking into account the
> finite rise and fall times) of 4th and higher harmonics just isn't as
> much as intuition would have everyone believe!

What do you mean by intuition here?
My intuition suggests to me that as the rise and fall times get shorter,
the energy available for the harmonics approaches that for the
fundamental. In other words, as a square wave approaches perfection it
gains the ability to stimulate all odd harmonic resonators equally - but
surely that can't be right. Possibly the energy transfer to a f and
(say) 5f resonator approaches the same value but the 5f resonator loses
5 energy at five times the rate of the f one, assuming equal Q.

Peter

> Len Anderson
> retired (from regular hours) electronic engineer person

2520. Re: 1N414B

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-28 05:02:02 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <B9Kdne5C4tM30_vdRVn-gw@ctc.net>
Source record: 27357

> TRY A 1N914 (OR ANY SMALL SIGNAL DIODE
>
> DE PAUL

>
> "Prof. Peter Konlechner" <peter.konlechner@aon.at> wrote in message
> news:40474ea6$0$23362$91cee783@newsreader01.highway.telekom.at...
> > hello all:
> >
> > could anybody name to me equivalent diodes for 1N414 B which are not
> > available in Vienna.
> > Many thanks,
> > Peter

The subistution book I have lists a replacement that has a 200 volt PIV and 200 ma current. If this is anywhere near correct it may be a little too much for a 1N914 to handle. The replacement is a RCA SK series . You may try a 1N4003 to 1N4007 if your voltage is over 100 volts.

2521. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-28 05:51:44 UTC
From: averyfineman@aol.com
Message-ID: <20040328005144.03943.00000030@mb-m29.aol.com>
Source record: 27358

In article <40664897.6074@virgin.net>, Peter John Lawton
<peter_john.lawton@virgin.net> writes:

>Avery Fineman wrote:
>>
>> In article <40583945.4745@virgin.net>, Peter John Lawton
>> <peter_john.lawton@virgin.net> writes:
>>
>> >> The above will hold true at any fundamental frequency provided the
>> >> rise and fall times are equal and each equal to 0.02 times the
>> >> repetition period. Those numbers will change given faster or slower
>> >> rise/fall times. All db calculated as 20 x Log (voltage). Width is
>> >> determined at the baseline, not the 50% amplitude point.
>> >>
>> >> Len Anderson
>> >> retired (from regular hours) electronic engineer person
>> >
>> >I wonder what happens to these numbers as the rise/fall time tends to
>> >zero?
>>
>> The harmonic content will increase...but also show dips depending
>> on the percentage width relative to the period. I could present those
>> (takes only minutes to run the program and transcribe the results)
>> but that is academic only. The rise and fall times will NOT be zero
>> due to the repetition frequency being high (repetition time short).
>>
>> Consider that a 3 MHz waveform has a period of 333 1/3 nSec and
>> that Paul is using a TTL family inverter to make the square wave.
>> Even with a Schmitt trigger inverter the t_r and t_f are going to be
>> finite, possibly 15 nSec with a fast device (and some capacitive
>> loading or semi-resonant whatever to mess with on- and off-times).
>>
>> 15 nSec is 4.5% of the repetition period, quite finite...more than I
>> showed on the small table given previously.
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>> I'm sure someone out there wants to argue minutae on numbers but
>> what is being discussed is a squarish waveform with a repetition
>> frequency in the low HF range. Periods are valued in nanoSeconds
>> and the on/off times of squaring devices are ALSO in nanoSeconds.
>> There's just NOT going to be any sort of "zero" on/off times with
>> practical logic devices used by hobbyists.
>
>I just wondered from a theoretical point of view what the program would
>say about the harmonic content as you decreased the values you put into

>it for t_r and t_f.

The harmonic values will change, approaching that of an ideal
square wave. That's a truism. With zero rise and fall it IS the
same as an ideal square wave.

There's NO accurate little formula, saying, or myth that will
predict any particular harmonic value. That's the reason for using
nice, very quick number-crunching computer programs.

>> What is not intuitive to me (and to others) is that harmonic energy
>> of a rectangular waveform drops drastically by the 5th harmonic
>> and is certainly lower than "obvious" numbers bandied about.
>
>This is connected with my question. I am pondering why the energy
>available for higher harmonics is less than for the fundamental and also
>how your program works out this energy.

My program was developed while at RCA Corporation, specifically in
the time period of winter 1973-1974 using the core of three ideal
waveforms: rectangular, rising triangle, falling triangle. They relate
to a singular waveform using a time-delay formula multiplier so that
the rising triangle butts up to (in time) to the start of the rectangular
waveform and the falling triangle starts at the end of the rectangular
waveform. Entry is rise-time (the rising triangle), fall-time (the falling
triangle), and 50% amplitude pulse width which is the rectangular
waveform length and the length of the rising and falling triangles
adjusted for their inputted times. [draw it out to see it better]
Each basic waveform generates its own Fourier coefficient set. All
sets are simply added algebraically. Mathematically okay to do that.

A quick form of proof of that is to use a simple frequency-to-time
transform that works at each specified point in time along the
repetition period of the waveform. The original was a time-to-
frequency transform, mathematically different than the opposite.
If a reconstruction of the frequency-to-time results in the original
entry specifications, then it is called accurate enough. I didn't
derive the reconstruction transform since it was already in a book.
Neither did I derive any of the basic ideal waveforms which were
already in the ITT Blue Bible. The delay multiplier used to set
rise, fall, and 50% width was another book value, simplified to
faster calculation simplicity because the original was a math
problem thing with more terms than needed.

As to WHY of the energy distribution, that's up to any person who
has the textbook formulas and math smarts to fool around with.
I can't sum that up in one message. I doubt anyone can. I do
know this: Using the formulas and the program, then setting up a
test with careful adjustments of a pulse generator and using a
well-calibrated spectrum analyzer, the numbers agree within the
tolerances of the analyzer calibration. To me, and lots of others,
that is all the proof needed. Beyond that, its too much time and

nobody paying me to do this...

>Its like pushing the baby on the swing in the park, you only need to
>give it the occasional push or pull in the right direction. A 5f
>resonator gets has to go for 2.5 cycles in between refuelling from a
>square-wave (1:1) of frequency f.

Use any analogue you want. I don't agree with the above, but
feel free and I not going further on that...

>What do you mean by intuition here?
>My intuition suggests to me that as the rise and fall times get shorter,
>the energy available for the harmonics approaches that for the
>fundamental. In other words, as a square wave approaches perfection it

For any ideal rectangular shape, the harmonic energies have a
(SinX / X) locus. That's explained in textbooks also. Harmonics
of a repetitive waveform Fourier transform will NEVER have more
energy than the fundamental. That's also basic book stuff.

If the rise and/or fall times are finite, the harmonics will drop their
energy levels compared to the zero rise and fall time ideals. As the
rise and fall times get longer and longer the harmonic energy gets
less and less. By the time one gets to a sinusoid waveshape,
there are NO harmonics in any Fourier transform, its all
fundamental frequency (1 / repetition-period).

Recess.

Len Anderson
retired (from regular hours) electronic engineer person

2522. Re: When You Hear The Heavy Accent & The Poor Phone Connection... HANG UP!!! ------ BwEcqjRWwReks

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-28 10:57:16 UTC
From: Rv! <no@spam.here.thanks>
Message-ID: <1080471436.14689.0@eunomia.uk.clara.net>
Source record: 27359

Wow, A troll I agree with. Bloody miracle!

Rv!

2523. Re: Paging Reg Edwards...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-28 11:20:40 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <c4dd60lrkqlobea1m6q9mr0sat4pko12ht@4ax.com>
Source record: 27360

I assume you got my message with the problem outlined in detail, Reg?
No confirmation received by e-mail so am posting this via the
newsgroup in case your e-mail's still up the shoot. BTW, hard disk
failure on my main computer means I'll only have a couple of times a
day for the time being to check for mail and news posts. :-(

p.

2524. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-28 13:40:45 UTC
From: Peter John Lawton <peter_john.lawton@virgin.net>
Message-ID: <4066D5DD.77BD@virgin.net>
Source record: 27361

Avery Fineman wrote:
>
> In article <40664897.6074@virgin.net>, Peter John Lawton
> <peter_john.lawton@virgin.net> writes:

> >I am pondering why the energy
> >available for higher harmonics is less than for the fundamental and also
> >how your program works out this energy.
>
> My program was developed while at RCA Corporation, specifically in
> the time period of winter 1973-1974 using the core of three ideal
> waveforms: rectangular, rising triangle, falling triangle. They relate
> to a singular waveform using a time-delay formula multiplier so that
> the rising triangle butts up to (in time) to the start of the rectangular
> waveform and the falling triangle starts at the end of the rectangular
> waveform. Entry is rise-time (the rising triangle), fall-time (the falling
> triangle), and 50% amplitude pulse width which is the rectangular
> waveform length and the length of the rising and falling triangles
> adjusted for their inputted times. [draw it out to see it better]
> Each basic waveform generates its own Fourier coefficient set. All
> sets are simply added algebraically. Mathematically okay to do that.
>
> A quick form of proof of that is to use a simple frequency-to-time
> transform that works at each specified point in time along the
> repetition period of the waveform. The original was a time-to-
> frequency transform, mathematically different than the opposite.
> If a reconstruction of the frequency-to-time results in the original
> entry specifications, then it is called accurate enough. I didn't
> derive the reconstruction transform since it was already in a book.
> Neither did I derive any of the basic ideal waveforms which were
> already in the ITT Blue Bible. The delay multiplier used to set
> rise, fall, and 50% width was another book value, simplified to
> faster calculation simplicity because the original was a math
> problem thing with more terms than needed.

Thanks, that's clear.

> >Its like pushing the baby on the swing in the park, you only need to
> >give it the occasional push or pull in the right direction. A 5f
> >resonator gets has to go for 2.5 cycles in between refuelling from a
> >square-wave (1:1) of frequency f.
>
> Use any analogue you want. I don't agree with the above, but
> feel free and I not going further on that...

OK. I'll just say that on reflection I realise that it's not an analogy
- it's a bona-fide case of extracting a harmonic from a repetitive pulse
waveform.

> >What do you mean by intuition here?
> >My intuition suggests to me that as the rise and fall times get shorter,
> >the energy available for the harmonics approaches that for the
> >fundamental. In other words, as a square wave approaches perfection it
>
> For any ideal rectangular shape, the harmonic energies have a
> (SinX / X) locus. That's explained in textbooks also. Harmonics
> of a repetitive waveform Fourier transform will NEVER have more
> energy than the fundamental. That's also basic book stuff.
>
> If the rise and/or fall times are finite, the harmonics will drop their
> energy levels compared to the zero rise and fall time ideals. As the
> rise and fall times get longer and longer the harmonic energy gets
> less and less. By the time one gets to a sinusoid waveshape,
> there are NO harmonics in any Fourier transform, its all
> fundamental frequency (1 / repetition-period).

I'm talking intuition not Fourier.
BTW your earlier comment on shortage of energy at higher harmonics may
be exacerbated by the lower Q of LC resonators at higher frequencies.

> Recess.
OK

Peter
> Len Anderson
> retired (from regular hours) electronic engineer person

2525. Do relay ratings apply for RF?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-28 13:52:17 UTC
From: nick <nick@francolini.com>
Message-ID: <pan.2004.03.28.13.52.16.131108@francolini.com>
Source record: 27362

If a (let's say 12v) relay is rated for 10 amps @ 110 volts,
it will take 1100 watts. Will it take 1000 watts of RF?

I would think not, but I don't know why.

Tnx
Nick
n1pzy

2526. Re: Do relay ratings apply for RF?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-28 15:19:48 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <o2C9c.56890$PY1.1043816@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27363

"nick" <nick@francolini.com> wrote in message
news:pan.2004.03.28.13.52.16.131108@francolini.com...
> If a (let's say 12v) relay is rated for 10 amps @ 110 volts,
> it will take 1100 watts. Will it take 1000 watts of RF?
>
> I would think not, but I don't know why.

There are two parameters specified, but you are reducing them to one. The first is the current, the second is the voltage. With a non-reactive 50-ohm load, the rf current at 1000 watts is about 4.5 amps, and the rf voltage is 70.7 V. These formulae are in every edition of the ARRL Handbook. See also the Handbook discussion of skin effect. At higher frequencies, ac tends to travel near the surface of a conductor. If the relay contacts are silver plated, this may not be a problem. The contacts in the old Dow-Key coax relays weren't very large; it doesn't take a fat relay to switch non-reactive 50-ohm loads. If you want to switch high-impedance or badly mismatched antennas, you may exceed the capability of the relay. Another consideration is whether you will actually be hot-switching the rf. If the contacts are closed before rf is applied, there is less likelihood of arcing and damaging the contacts.

Relays designed for rf use are mechanically constructed to minimize impedance variation through the contacts, to maintain the non-reactive 50-ohm impedance of the system. At HF, a slight impedance 'bump' is not a big deal. For amateur HF use, this relay will probably do the job.

"PM"

2527. Re: Do relay ratings apply for RF?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-28 17:44:35 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <w7WdnQeIVZb_nPrdRVn-uA@ctc.net>
Source record: 27364

"nick" <nick@francolini.com> wrote in message
news:pan.2004.03.28.13.52.16.131108@francolini.com...
> If a (let's say 12v) relay is rated for 10 amps @ 110 volts,
> it will take 1100 watts. Will it take 1000 watts of RF?
>
> I would think not, but I don't know why.
>

At a low impedance point in the line they could be ok. If you are going to use it for switching in and out an amplifier after the rig probably no problem. If you are depending on it for some isolation such as a low level preamp then it will need to be sjpecified for how much isolation it has. If used as an antenna switch you need to check the voltage rating so it will not arc over in a high impedance point. The contact spacing and internal wire spacing may give a problem in some situations. It all depends on the relay.

2528. Re: What's the value of this inductor? <sigh>

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-28 18:05:50 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <e7kc605jtd40sjjfl7k1trgubqmda4g238@4ax.com>
Source record: 27365

On Sat, 27 Mar 2004 14:22:16 +0000 Paul Burridge
<pb@osiris1.notthisbit.co.uk> wrote:

>Hi guys,
>
>I have some surplus axial inductors marked as follows:
>
>uH27 -K
>GEL
>
>I would have thought this implied 0.27uH or 270nH? GEL is presumably
>the maker. However, there's no resonance at 17.6Mhz with 300pF in
>parallel as might be expected of an inductor of that value. There *is*
>however, a resonance at 50.6Mhz., which implies that the inductors are
>actually 33nH. I'm confused.

I have a VERY nice HP impedance meter here. Send me one of those and
I'd be glad to check it for you. I can give you L at any frequency you
want from 20 Hz to 1 MHz.

Hmmm.... I see I'm a long way from the UK.

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA

2529. Re: What's the value of this inductor? <sigh>

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-28 19:35:04 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <dl9e605i1lsar3mmhjs5k322u458t58njq@4ax.com>
Source record: 27366

On Sat, 27 Mar 2004 12:10:36 -0800, Tim Wescott
<tim@wescottnospamdesign.com> wrote:

>50MHz is pretty high -- are you sure it's not 27nH with stray
>inductance? Did you measure more than one to check for tolerance as the
>OP brings up?

I'm not sure of anything! These small inductors are notoriously
difficult to measure accurately. Even lab-grade kit can differ in
measured values by as much as 100% or more and the risk of parasitic
resonances is an additional problem. :-(

2530. Re: What's the value of this inductor? <sigh>

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-28 19:35:04 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <ct9e6050he006d0jekpchbdka99h3m2o05@4ax.com>
Source record: 27367

On Sun, 28 Mar 2004 00:56:05 -0000, "John Jardine"
<john@jjdesigns.fsnet.co.uk> wrote:

>
>John Jardine <john@jjdesigns.fsnet.co.uk> wrote in message
>news:c45627$85j$1@newsg1.svr.pol.co.uk...
>>
>> Paul Burridge <pb@osiris1.notthisbit.co.uk> wrote in message
>> news:173b6010nti9jt7229in9aeace8p9r6ph3@4ax.com...
>> > Hi guys,
>> >
>> > I have some surplus axial inductors marked as follows:
>> >
>> > uH27 -K
>> > GEL
>
>[clip]
>> Therefore 1/10th of the available voltage is across the inductor and 9/10
>> lost across the genny internal 50ohms.
>> So inductor looks like 5 ohms therefore,
>[clip]
>
>Bollocks.
>Screwed myself by rushing for easy numbers
>
>0.27uH is actually 8.5ohms at 5MHz
>
>For the 10mv example L would actually be (10mV / (100mv-10mv)/50) =5.55
>ohms, equiv' to 176nH.
>
>Sorry!

Okay, thanks John (and others). I'll give this ingenious solution a
bash and see what turns out. Been struck by a virus on my main
computer so can't get net access as frequently as I would wish so may
have to report back 2morrow....

2531. Re: Extracting the 5th Harmonic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-28 21:34:04 UTC
From: averyfineman@aol.com
Message-ID: <20040328163404.04942.00000082@mb-m01.aol.com>
Source record: 27368

In article <4066D5DD.77BD@virgin.net>, Peter John Lawton
<peter_john.lawton@virgin.net> writes:

>I'm talking intuition not Fourier.

"Intuition" is a subjective term but generally applies to "seeing"
a direction of some change after one has worked with a subject
for a while. Thirty years ago I had access to an RCA Spectra
70 mainframe and time on-line to do a lot of work with shapes
and their harmonics. The PC on this computer desk here has
MORE computing power and more mass storage and better
input-output than a half room full of mainframe back then.

>BTW your earlier comment on shortage of energy at higher harmonics may
>be exacerbated by the lower Q of LC resonators at higher frequencies.

IN a particular circuit, yes. But, to get into a new area, one
should start with the basic conditions. For a repetitive wave-
form, the Fourier Coefficient formulas are fine to establish the
energy distribution over frequency...in an ideal system. After
that, the individual conditions of a non-ideal, realistic
application can be applied.

Whether or not there are losses of higher frequency energy
depends also on the type and value of an inductor...small ones
might actually have highest Q at the desired frequency and
that changes the relative power distribution at circuit output.
Intuition in this case raises a little mental flag to check Qs of
actual, available parts to see if they will work better...or not.
The same intuition would also flag me to check out the f_t,
the transition frequency of the bipolar expected to be used;
Too low an f_sub_t would mean a greater loss of higher
harmonics at circuit output. Maybe I could select a combo
of the two so that things evened out? Okay, that and about
a dozen-plus things need to be checked in the planning
stages and "intuition" may or may not help. That depends on
one's past experience in cranking on specific things.

"Intuition" can also lead one astray. Ever hear someone say
"You can't do that!" in response to explanation of some new
thing that another has already done successfully? :-)

Len Anderson
retired (from regular hours) electronic engineer person

2532. Re: Do relay ratings apply for RF?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-28 21:34:05 UTC
From: averyfineman@aol.com
Message-ID: <20040328163405.04942.00000083@mb-m01.aol.com>
Source record: 27369

In article <pan.2004.03.28.13.52.16.131108@francolini.com>, "nick"
<nick@francolini.com> writes:

>If a (let's say 12v) relay is rated for 10 amps @ 110 volts,
>it will take 1100 watts. Will it take 1000 watts of RF?
>
>I would think not, but I don't know why.

Relay CONTACT ratings have little to with relay COIL ratings.

Contact ratings assume a specific environment such as AC
primary power circuits, 28 VDC aircraft distribution, etc. That
is for the overwhelming majority of relay applications. In the
case of contacts rated for 115 or 230 VAC applications, those
will have open-contact spacings larger than lower-voltage DC;
spacings are generally designed to withstand about 3 times
the AC RMS voltage specified in ratings. Generally, but
not always.

To switch RF in a coaxial line system you have to allow for
the VSWR having a high value...choose at your own
convenience for expected conditions. The reason for that is
because, at a high VSWR, the relay contacts may be at a
maximum voltage point or a maximum current point.
Depending on the VSWR, either maximum may exceed the
contact ratings values. Location of either maximum depends
on frequency, length of transmission line, velocity of
propagation of the line used, antenna characteristics, and
the distance from the discontinuity (typically the antenna
feedpoint).

There are many tables and nomographs in ham literature to
determine the maximum voltage or maximum current with a
given SWR for a given characteristic impedance of a line.
A realistic worst-case value should be selected to avoid
having to replace a relay often due to arc-over or contact
sticking due to maxima. If an RF system is perfect (1:1
VSWR, line Z exact and unchanging) then compute the
required voltage and current from ordinary Ohm's Law.

I have yet to see such a perfect system but I know others
claim them as such... :-)

Len Anderson
retired (from regular hours) electronic engineer person

2533. Re: Do relay ratings apply for RF?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-28 23:58:19 UTC
From: n2ey@aol.comSPAMNO
Message-ID: <20040328185819.17713.00000087@mb-m28.aol.com>
Source record: 27370

In article <pan.2004.03.28.13.52.16.131108@francolini.com>, "nick"
<nick@francolini.com> writes:

>If a (let's say 12v) relay is rated for 10 amps @ 110 volts,
>it will take 1100 watts.

It will take 1100 watts at 110 volts. But if you lower the voltage to, say, 50 volts, and the contacts are still rated at 10 amps, it can only handle 500 watts. Etc.

>Will it take 1000 watts of RF?
>
>I would think not, but I don't know why.

Depends entirely on the RF characteristics - impedance, SWR, etc.

The trick is to exceed neither the voltage nor current ratings of the contacts. In a 50 ohm RF application with low SWR (less than 2:1), that relay is probably limited by its contact voltage rating, not the current rating. Which works out to about 200 watts.

73 de Jim, N2EY

2534. HBR-16

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-29 00:21:04 UTC
From: Brian Hill <releif@last.net>
Message-ID: <106er063a2l4k1a@corp.supernews.com>
Source record: 27371

Hi guys. I want to build the HBR -16. that was in a early 60s QST. I think?
Any info on this would be greatly appreciated.

73 Brian
--
Never under estimate the stimulation of eccentricity.

Brian's Radio Universe
http://webpages.charter.net/brianehill/

2535. Re: What's the value of this inductor? <sigh>

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-29 01:25:57 UTC
From: Nick Kennedy <wa5bdu@yahoo.com>
Message-ID: <106eumsfhqpgf39@corp.supernews.com>
Source record: 27372

OK, but remember that the voltage drop across the inductor plus that across the source resistance don't add directly to the source voltage. With your example of 10 mV across L and 100 mV open circuit voltage, the voltage across the 50 ohm source resistance is 99.5 mV. That's because they're 90 degrees out of phase and add in a right triangle fashion.

Maybe you considered that, and that's why you chose a small value of drop across the inductor. When that's the case, the hypotenuse and x-side of the triangle are pretty close to equal. But users of this method need to understand this simplification and the implied restrictions.

I've used something similar to measure the inductance of chokes too large for my meter, such as transformer windings and power supply chokes. You can put a known resistor in series with the choke, put 60 Hz AC across it, and measure the two drops. Then calculate the inductance using a method similar to what you've described. But keep the sum of squares relationship in mind. (Supply voltage squared equals drop across resistance squared plus drop across inductance squared.) If the inductor has significant resistance, it should be added to the value of the series resistor.

Regards,

Nick, WA5BDU
in Arkansas

"John Jardine" <john@jjdesigns.fsnet.co.uk> wrote in message
news:c45627$85j$1@newsg1.svr.pol.co.uk...
>
>
> 0.27uH is 5ohms at 5MHz.
>
> Set to 5MHz and wind up your 50ohm signal generator to max output (say a
> 100mV or so). Measure it's voltage using the scope.
> Short the inductor across the sig genny terminals and measure the voltage
> across the inductor.
> Ignore all irrelavencies such as phase angles, stray capacitances, Q
factor,
> series resistance,skin effects, self resonances etc. Just treat the
inductor
> as if it's a straight forward potential divider resistance in series with
> the 50 ohms of the genny.
>
> Eg. Sig genny open circuit output at 5megs is 100 mV peak-peak
> Inductor connected and voltage measured is now 10mV peak-peak.
> Therefore 1/10th of the available voltage is across the inductor and 9/10
> lost across the genny internal 50ohms.

> So inductor looks like 5 ohms therefore,
> 5ohms = 2 x Pi x 5megs x L?
> =270nH. Simple !
> Using this method it's easy to get down to the odd few nH.
> Exact same method as used by a nice 'inductance meter' design that turned
up
> in Radcom about 12 years ago
>
> regards
> john

2536. Re: HBR-16

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-29 02:44:45 UTC
From: xxxxx@xxx.com
Message-ID: <x4M9c.4111$yN6.284@newsread2.news.atl.earthlink.net>
Source record: 27373

The HBR web site:

http://www.qsl.net/k5bcq/HBR/hbr.html

I've built three HBR's. It's a nice receiver.

73,
Darrell, WA5VGO

2537. Re: HBR-16

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-29 03:06:48 UTC
From: n2ey@aol.comSPAMNO
Message-ID: <20040328220648.23344.00000067@mb-m14.aol.com>
Source record: 27374

In article <106er063a2l4k1a@corp.supernews.com>, "Brian Hill" <releif@last.net> writes:

> I want to build the HBR -16. that was in a early 60s QST. I think?
>Any info on this would be greatly appreciated.

Two resources are an absolute must:

K5BCQ's excellent HBR website (your favorite search engine will find it by searching "HBR K5BCQ"

There is an email reflector devoted to the HBR - instructions at the website, IIRC

73 de Jim, N2EY

2538. Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-29 05:47:23 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BC8D229F.31A8%outhouse@midcoast.com>
Source record: 27375

With the help of some folks here I did troubleshoot my AC-1 tube transmitter (using a 6V6) and got it working somehow. Since I passed my code test and had my first QSO using the transmitter and boy was that exciting.

But questions remain.

I monitor the output signal on my scope and notice that right after key down the waveform contract just a bit and the tone changes pitch. I guess this is called chirp. I normally use B+ 200V.
If I increase the voltage lets say to 300V this effect becomes much more pronounced.
I still use an external bench supply capable of much higher currents and I don't think it is a power supply weakness. In fact putting a VOM on the supply line shows no sag in my supply voltage.

How can I minimize this and especially keep it from becoming more severe at higher outputs.

Also, the circuit diagram for the tranmitter did not state the coil diameter of the pi network. The pi network still has me scratching my head. Coils with slight variations in diameter give dramatically different results.

Also changing the air cap with one of an identical range can have a vast effect, which surprised me. Is this the "real world components" versus the theory???

Uwe

2539. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-29 12:03:02 UTC
From: fmmck@aol.com
Message-ID: <20040329070302.18346.00000269@mb-m07.aol.com>
Source record: 27376

<< I monitor the output signal on my scope and notice that right after key down the waveform contract just a bit and the tone changes pitch. >>

Uwe-

I can think of two reasons for the "chirp".

You did not mention your receiver. It is possible that the strong signal from your nearby transmitter causes the receiver to change pitch.

I assume your transmitter is crystal controlled, since that is similar to the 6V6 homebrew transmitter I started with back in 1955. By increasing voltage, the crystal current increases. There is an effect due to heating of the crystal that might cause a chirp.

In the case of my old transmitter, I found that I could get more power output by changing the 6V6 to a 6L6, which has the same base diagram. However, one thing that happened along the way was that crystal current increased to the point that one of my crystals fractured and stopped working.

Looking back, I realize that the increase in power by changing tubes and increasing voltage, may not have made a significant difference. If you double your power, the received signal only goes up half an S-Unit. Improving your antenna can make a bigger difference!

I don't know about the waveform contraction. I doubt it is from overload of the scope, but it might be due to the tube being a little "soft" due to low cathode emission in the 6V6.

73, Fred, K4DII

2540. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-29 14:01:35 UTC
From: troglodite@aol.com
Message-ID: <20040329090135.16880.00000310@mb-m28.aol.com>
Source record: 27377

>
>With the help of some folks here I did troubleshoot my AC-1 tube transmitter
>(using a 6V6) and got it working somehow. Since I passed my code test and
>had my first QSO using the transmitter and boy was that exciting.
>

Congratulations! Though it's been many years, I still remember when I made my first contact with a transmitter very similar to yours. (It was 1954)

As for the chirp, this is partly the nature of single tube transmitters. You can minimize it with careful power supply design, and just the right amount of feedback on your oscillator, but a small amount will remain.

The feedback is controlled by the ratio of the capacitors marked C7 and C9 in the original Ameco schematic. They form a "tap" on the cathode RF choke. Increasing C7 slightly or decreasing C9 slightly will increase the feedback. Different crystals will also react differently.

73,

Doug Moore KB9TMY

2541. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-29 14:06:58 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <64W9c.62922$PY1.1151746@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27378

"Uwe" <outhouse@midcoast.com> wrote in message
news:BC8D229F.31A8%outhouse@midcoast.com...

> I monitor the output signal on my scope and notice that right after key
down
> the waveform contract just a bit and the tone changes pitch. I guess this
is
> called chirp. I normally use B+ 200V.
> If I increase the voltage lets say to 300V this effect becomes much more
> pronounced.
> I still use an external bench supply capable of much higher currents and
I
> don't think it is a power supply weakness. In fact putting a VOM on the
> supply line shows no sag in my supply voltage.

I think 200 V is enough. Someone here probably knows what the AC-1 design voltage was, but I'm sure it wasn't 300 V, and may be have more like 150 V. While the 6V6 can handle higher voltages, as a keyed crystal oscillator, you don't want to overdo it. You could fracture a crystal, too.

There's quite a bit of AC-1 lore online. Use http://www.google.com/search?q=ameco+ac-1 to find it. I even found a copy of the original AC-1 manual, but it doesn't show circuit voltages.

Congrats on getting your ticket and making your first QSO. Now it's time to put this antique away and build some safe, cool, solid-state gear!

73,

"PM"

2542. Re: Do relay ratings apply for RF?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-29 14:17:57 UTC
From: Tom S <nobody@home.com>
Message-ID: <c499dl$223$1@avnika.corp.mot.com>
Source record: 27379

Are these specs for hot switching? I would think that if you can figure out a way to switch the relay THEN apply power, everything would be happy and the contacts will last much longer.

Tom

"N2EY" <n2ey@aol.comSPAMNO> wrote in message news:20040328185819.17713.00000087@mb-m28.aol.com...
> In article <pan.2004.03.28.13.52.16.131108@francolini.com>, "nick"
> <nick@francolini.com> writes:
>
> >If a (let's say 12v) relay is rated for 10 amps @ 110 volts,
> >it will take 1100 watts.
>
> It will take 1100 watts at 110 volts. But if you lower the voltage to, say, 50
> volts, and the contacts are still rated at 10 amps, it can only handle 500
> watts. Etc.
>
> >Will it take 1000 watts of RF?
> >
> >I would think not, but I don't know why.
>
> Depends entirely on the RF characteristics - impedance, SWR, etc.
>
> The trick is to exceed neither the voltage nor current ratings of the contacts.
> In a 50 ohm RF application with low SWR (less than 2:1), that relay is probably
> limited by its contact voltage rating, not the current rating. Which works out
> to about 200 watts.
>
> 73 de Jim, N2EY
>

2543. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-29 16:24:28 UTC
From: troglodite@aol.com
Message-ID: <20040329112428.07406.00000257@mb-m18.aol.com>
Source record: 27380

>
>Congrats on getting your ticket and making your first QSO. Now it's time to
>put this antique away and build some safe, cool, solid-state gear!
>

I disagree somewhat. There is a lot to be learned from simple gear, tube or otherwise. Tube gear is more forgiving of the mistakes we inevitably make while learning. It will also bite you if you are not careful, so you learn respect. He should try the classic 6CG7 807 transmitter next - a bit more power and a lot less chirp.

It can be a lot of fun making contacts with this kind of simple equipment, and it improves your code proficiency to the point you might even decide code is fun.

Doug Moore KB9TMY

2544. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-29 16:26:41 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <106gji4qe7le653@corp.supernews.com>
Source record: 27381

Uwe wrote:

> With the help of some folks here I did troubleshoot my AC-1 tube transmitter
> (using a 6V6) and got it working somehow. Since I passed my code test and
> had my first QSO using the transmitter and boy was that exciting.
>
> But questions remain.
>
> I monitor the output signal on my scope and notice that right after key down
> the waveform contract just a bit and the tone changes pitch. I guess this is
> called chirp. I normally use B+ 200V.
> If I increase the voltage lets say to 300V this effect becomes much more
> pronounced.
> I still use an external bench supply capable of much higher currents and I
> don't think it is a power supply weakness. In fact putting a VOM on the
> supply line shows no sag in my supply voltage.
>
> How can I minimize this and especially keep it from becoming more severe at
> higher outputs.
>
>
> Also, the circuit diagram for the tranmitter did not state the coil diameter
> of the pi network. The pi network still has me scratching my head. Coils
> with slight variations in diameter give dramatically different results.
>
> Also changing the air cap with one of an identical range can have a vast
> effect, which surprised me. Is this the "real world components" versus the
> theory???
>
> Uwe
>

I don't have the schematic, but if the screen voltage comes from the
usual dropping resistor & bypass cap then it is probably dropping a
little bit under load. This will cause the plate current & output power
to fall a bit, and change the operating characteristics enough to chirp
a little bit.

As mentioned by another poster, this is the nature of a single-tube
transmitter (or single-anything power oscillator, for that matter). No
matter what you do the amplifier characteristics will be different for
different RF outputs, so the frequency _will_ change. You can minimize
it but you can't make it go away.

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

2545. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-29 17:11:16 UTC
From: N2EY@AOL.COM
Message-ID: <c2356669.0403290911.4e655446@posting.google.com>
Source record: 27382

Uwe <outhouse@midcoast.com> wrote in message news:<BC8D229F.31A8%outhouse@midcoast.com>...
> With the help of some folks here I did troubleshoot my AC-1 tube transmitter
> (using a 6V6) and got it working somehow. Since I passed my code test and
> had my first QSO using the transmitter and boy was that exciting.

Congatulations and well done!
>
> But questions remain.
>
> I monitor the output signal on my scope and notice that right after key down
> the waveform contract just a bit and the tone changes pitch. I guess this is
> called chirp.

That's correct. You won't see it much on a 'scope but you can hear it.

> I normally use B+ 200V.
> If I increase the voltage lets say to 300V this effect becomes much more
> pronounced.
> I still use an external bench supply capable of much higher currents and I
> don't think it is a power supply weakness. In fact putting a VOM on the
> supply line shows no sag in my supply voltage.
>
> How can I minimize this and especially keep it from becoming more severe at
> higher outputs.

Several things to check:

1) If the receiver you are using to monitor the signal is overloaded
by the strong local signal, it can make the signal sound like it is
chirping or clicking even if no such chirps or clicks actually exist.
This is particularly true if the receiver isn't really meant for CW
use. What are you using to listen to the transmitter's signal?

2) Besides the power supply, chirp in that sort of rig can be caused
by:

a) the crystal - try a different one if you can

b) the feedback capacitors (the one from the grid to cathode, and the
one from cathode to ground). These control the feedback in the
oscillator, and if there is too much or too little, chirp can result.

c) the 6V6GT tube - try a different one if you can

d) output tuning - maximum output is often not the best setting for
chirp.

> Also, the circuit diagram for the tranmitter did not state the coil diameter
> of the pi network.

It's 1-1/4 inches.

> The pi network still has me scratching my head. Coils
> with slight variations in diameter give dramatically different results.

That's to be expected.

A common formula for the inductance of a solenoidal air-core coil is:

L = (a * a * n * n)/ ((9 * a) + (10 * b))

where

L = inductance in uH
a = radius of coil winding in inches
b = length of coil winding in inches
n = number of turns

>
> Also changing the air cap with one of an identical range can have a vast
> effect, which surprised me. Is this the "real world components" versus the
> theory???

Perhaps - but how do you know the caps are the same value?

73 es hope to CU on 40

Jim, N2EY
>
> Uwe

2546. QUESTION: Homebrew Spread spectrum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-29 21:56:52 UTC
From: Timothy@tholtom.freeserve.co.uk
Message-ID: <fd697e2e.0403291356.32a08f26@posting.google.com>
Source record: 27384

Can anyone out there tell me a good source of practical information (schematics and the like) for building SS transmitters and receivers. I'm particularly interested in how I'd design the part of the receiver that acquires then tracks the synchronisation signal from the transmitter (correlation etc)

I did an initial scout around on the net but the only stuff I could come up with was TAPR but there's seemed to have been cancelled.

I'm into experimenting, and not afraid of math (an electronic engineer from a long time ago...)

Can anyone help me here...

Tim

2547. QUESTION: Homebrew Spread spectrum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-29 21:56:58 UTC
From: Timothy@tholtom.freeserve.co.uk
Message-ID: <fd697e2e.0403291356.1ee907ee@posting.google.com>
Source record: 27383

Can anyone out there tell me a good source of practical information (schematics and the like) for building SS transmitters and receivers. I'm particularly interested in how I'd design the part of the receiver that acquires then tracks the synchronisation signal from the transmitter (correlation etc)

I did an initial scout around on the net but the only stuff I could come up with was TAPR but there's seemed to have been cancelled.

I'm into experimenting, and not afraid of math (an electronic engineer from a long time ago...)

Can anyone help me here...

Tim

2548. Re: HBR-16

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-29 22:27:50 UTC
From: Brian Hill <releif@last.net>
Message-ID: <106h8nec0lo5v9c@corp.supernews.com>
Source record: 27385

Thank Guys. I found Kees great website. I'm sure this will be a year long project. I want it to look as good as it works. What kind of dial and drive do you guys think is the best. I like that 2 speed drive on Norm Deemer's (WA5HPJ) HBR-16. I'll be back in a bit, I'm sure.

73 Brian
--
Never under estimate the stimulation of eccentricity.

Brian's Radio Universe
http://webpages.charter.net/brianehill/

"N2EY" <n2ey@aol.comSPAMNO> wrote in message
news:20040328220648.23344.00000067@mb-m14.aol.com...
> In article <106er063a2l4k1a@corp.supernews.com>, "Brian Hill"
<releif@last.net>
> writes:
>
> > I want to build the HBR -16. that was in a early 60s QST. I think?
> >Any info on this would be greatly appreciated.
>
> Two resources are an absolute must:
>
> K5BCQ's excellent HBR website (your favorite search engine will find it by
> searching "HBR K5BCQ"
>
> There is an email reflector devoted to the HBR - instructions at the
website,
> IIRC
>
> 73 de Jim, N2EY

2549. Omni Antenna question please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-29 22:29:35 UTC
From: Bob <nubob5001@yahoo.com>
Message-ID: <qC1ac.10073$R37.9874@read1.cgocable.net>
Source record: 27387

Hi

I was given a Omni antenna from a ham who claims the best thing since sliced cheese. I want to use it for receive at first and when licenses come in for transmit. I would like to transmit on as many frequencies as practical and possible as I have a good tuner.
This is an omni, aluminum, telescopic and it 19 feet long. It has 4 ground planes about 8 feet long.
As I was cleaning it up, I noticed a coil at the base of the antenna connecting ground to center. Right at the female connector within the base of the antenna. There is a coil that has approx 20 windings and connects to ground. The center also feeds to the piping that stretches the full 19 feet. The coil is pretty rough shape.
My question is in regards to this coil. Is it necessary? What function will it serve? I can rebuild it if need be but is that necessary? And is 19 feet a good length for utilizing as many useable frequencies as possible?
Any advice?
Thanks
Bob

2550. Re: QUESTION: Homebrew Spread spectrum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-29 22:44:33 UTC
From: mikea@mikea.ath.cx
Message-ID: <c4a8sh$291$20@puck.litech.org>
Source record: 27386

Timothy C Holtom <Timothy@tholtom.freeserve.co.uk> wrote:
> Can anyone out there tell me a good source of practical information
> (schematics and the like) for building SS transmitters and receivers.
> I'm particularly interested in how I'd design the part of the receiver
> that acquires then tracks the synchronisation signal from the
> transmitter (correlation etc)

> I did an initial scout around on the net but the only stuff I could
> come up with was TAPR but there's seemed to have been cancelled.

> I'm into experimenting, and not afraid of math (an electronic engineer
> from a long time ago...)

> Can anyone help me here...

I have Dixon's text on spread spectrum techniques, but that's perhaps
Too Much Information. The TAPR has a book out on spread spectrum in
ham radio, which may be more to the point. Have a quick look at
<http://www.tapr.org/tapr/html/Fpub.ss.html>.

And of course a google on `"Spread spectrum" book` will give lots and
lots of hits on textbooks.

But as for synchronization, you have to know roughly where in the
FH or PN sequence the transmitter is, and then adjust your receiver
clock to sync up, and then do early-late tracking to keep the RX clock
synced up with the TX clock.

If I were doing it, I'd always start at the beginning of the FH or
PN sequence for each transmission, and build my receiver to expect
the TX to do that. Otherwise it starts looking too much like crypto
for me to want to deal with it.

--
Mike Andrews
mikea@mikea.ath.cx
Tired old sysadmin

2551. Re: HBR-16

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-29 23:43:30 UTC
From: Ron <xxxxx@xxxxx.com>
Message-ID: <Cw2ac.4496$NL4.1680@newsread3.news.atl.earthlink.net>
Source record: 27388

The Eddystone 898 is, without any question in my mind, the ultimate tuning dial. It is also the most difficult to work with (it's output shaft is elevated rather high) and the most expensive.

Darrell, WA5VGO

2552. Re: Omni Antenna question please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-30 01:01:45 UTC
From: CC <Admin@127.0.0.1>
Message-ID: <4068C8E2.2010400@127.0.0.1>
Source record: 27389

Hi Bob,

You need to ask the 'Ham' two things,
What type of antenna is this and for what frequency?
What is his call sign?

Just a guess, but it sounds like a 10 meter 5/8 ground plane.

Chris

Bob wrote:
> Hi
>
> I was given a Omni antenna from a ham who claims the best thing since sliced
> cheese. I want to use it for receive at first and when licenses come in for
> transmit. I would like to transmit on as many frequencies as practical and
> possible as I have a good tuner.
> This is an omni, aluminum, telescopic and it 19 feet long. It has 4 ground
> planes about 8 feet long.
> As I was cleaning it up, I noticed a coil at the base of the antenna
> connecting ground to center. Right at the female connector within the base
> of the antenna. There is a coil that has approx 20 windings and connects to
> ground. The center also feeds to the piping that stretches the full 19 feet.
> The coil is pretty rough shape.
> My question is in regards to this coil. Is it necessary? What function will
> it serve? I can rebuild it if need be but is that necessary? And is 19 feet
> a good length for utilizing as many useable frequencies as possible?
> Any advice?
> Thanks
> Bob
>
>
>
>

2553. Re: Omni Antenna question please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-30 01:22:34 UTC
From: Bob <nubob5001@yahoo.com>
Message-ID: <%24ac.18659$n37.1247602@read2.cgocable.net>
Source record: 27390

Yes, I think it was originally a omni three or four band antenna with traps
all the way up. He removed the traps and used it as a single whip.

What about that coil? It is a copper winding of about 1/16" copper wire that
is about 1" diameter.
Is that coil required or should the connection be a straight through
connection with no coil tapping to the ground?
Thanks

"CC" <Admin@127.0.0.1> wrote in message news:4068C8E2.2010400@127.0.0.1...
> Hi Bob,
>
> You need to ask the 'Ham' two things,
> What type of antenna is this and for what frequency?
> What is his call sign?
>
> Just a guess, but it sounds like a 10 meter 5/8 ground plane.
>
> Chris
>
>
> Bob wrote:
> > Hi
> >
> > I was given a Omni antenna from a ham who claims the best thing since
sliced
> > cheese. I want to use it for receive at first and when licenses come in
for
> > transmit. I would like to transmit on as many frequencies as practical
and
> > possible as I have a good tuner.
> > This is an omni, aluminum, telescopic and it 19 feet long. It has 4
ground
> > planes about 8 feet long.
> > As I was cleaning it up, I noticed a coil at the base of the antenna
> > connecting ground to center. Right at the female connector within the
base
> > of the antenna. There is a coil that has approx 20 windings and connects
to
> > ground. The center also feeds to the piping that stretches the full 19
feet.
> > The coil is pretty rough shape.
> > My question is in regards to this coil. Is it necessary? What function
will
> > it serve? I can rebuild it if need be but is that necessary? And is 19

feet
> > a good length for utilizing as many useable frequencies as possible?
> > Any advice?
> > Thanks
> > Bob
> >
> >
> >
> >
>

2554. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-30 01:58:47 UTC
From: n2ey@aol.comSPAMNO
Message-ID: <20040329205847.00150.00000064@mb-m11.aol.com>
Source record: 27392

In article <64W9c.62922$PY1.1151746@bgtnsc05-news.ops.worldnet.att.net>,
"Paul_Morphy" <nopaul_morphy2@coolgoose.com> writes:

>"Uwe" <outhouse@midcoast.com> wrote in message
>news:BC8D229F.31A8%outhouse@midcoast.com...
>
>> I monitor the output signal on my scope and notice that right after key
>down
>> the waveform contract just a bit and the tone changes pitch. I guess this
>is
>> called chirp. I normally use B+ 200V.
>> If I increase the voltage lets say to 300V this effect becomes much more
>> pronounced.
>> I still use an external bench supply capable of much higher currents and
>I
>> don't think it is a power supply weakness. In fact putting a VOM on the
>> supply line shows no sag in my supply voltage.
>
>I think 200 V is enough.

Not really. The original design uses about 300-325 volts.

>Someone here probably knows what the AC-1 design
>voltage was, but I'm sure it wasn't 300 V, and may be have more like 150 V.

Check the power transformer - it gave at least 300 volts with the 6X5
rectifier specified.

The AC-1 was spec'd at 15 watts input, which means about 40 mA at 350 volts!

>While the 6V6 can handle higher voltages, as a keyed crystal oscillator, you
>don't want to overdo it. You could fracture a crystal, too.

I ran a similar transmitter as a Novice. 350 volts on the plate of a 6V6GT,
grid-plate circuit. Xtals were fine, both on 80 and 40 meters. Those were
FT-243s, though. Smaller xtals need a bit more care.

A 6AG7 is a lot easier on the xtal than a 6V6.
>
>There's quite a bit of AC-1 lore online. Use
>http://www.google.com/search?q=ameco+ac-1 to find it. I even found a copy of
>the original AC-1 manual, but it doesn't show circuit voltages.
>
>Congrats on getting your ticket and making your first QSO.

YES!

> Now it's time to
>put this antique away and build some safe, cool, solid-state gear!
>
Why? If it does the job, what's the problem?

As another poster commented, the next step is a classic 6AG7/807 MOPA design (or similar tubes - lots of choices, like the 6BG6, 6DQ6, 1625, etc). With a few more parts than the AC-1, you can get 40-50 watts output. And learn a lot in the process.

73 de Jim, N2EY

2555. Re: HBR-16

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-30 01:58:48 UTC
From: n2ey@aol.comSPAMNO
Message-ID: <20040329205848.00150.00000065@mb-m11.aol.com>
Source record: 27391

In article <106h8nec0lo5v9c@corp.supernews.com>, "Brian Hill" <releif@last.net>
writes:

>What kind of dial and drive
>do you guys think is the best.

If you're building the classic HBR-16 and you don't want to modify the front end layout, then *the* dial to use is the Eddystone 898. Also keep an eye out for the Millen 39016 coupler (special type that has no backlash and tolerates misalignment) and of course a suitable tuning capacitor.

While 898s have drawn amazing prices on eBay in the past, (well over $100) recent sales have been quite a bit lower. There are two of them on auction right now, and two closed last week. (insert standard disclaimer here).

73 de Jim, N2EY

2556. Re: HBR-16

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-30 03:45:40 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <qE5ac.30443$fl6.13889@bignews1.bellsouth.net>
Source record: 27393

xxxxx@xxx.com wrote:
> The HBR web site:
>
> http://www.qsl.net/k5bcq/HBR/hbr.html
>
>
> I've built three HBR's. It's a nice receiver.
>
> 73,
> Darrell, WA5VGO
This is something I thought of building several times, but with extensive modifications. I just don't care for the classic superhet with the first oscillator a vfo. This requires calibration of each band, and also tracking adjustments. I prefer the variable first IF and a crystal controled first oscillator. (Like the drake 2B). My idea of a receiver project would be to add an additional rf/mixer front end to the HBR with a first if of 3.5-4.1 (and 6.9-7.5). The second IF would be 1.7khz (so it's an 80/40 band image front end). The final IF would be 85khz (guess where those IF cans came from). Being a compactron nut, the front end would use a 6AR11 rf amp/mixer, and the 85khz IF would use another 6AR11. A 6AV11 for the product detector and bfo, 6AF11 for the AF stage and agc amp. Other tubes for the rest of the rig TBD. Also thought of using toriods in the front end and bandswitching them by mounting them in a standard turret tuner chassis ripped out of an old TV set. (I've got some real old junk in my junk box!).

I have several ARC-5 rx three gang variable
caps, these have a real nice vernier drive on them. Just attach a larger dial, or a drive pulley for a slide rule dial and you have something as nice as the Eddystone.

(I sold an Eddystone I had in the junkbox a few years ago on ebay, it fetched about $130 IIRC. Nice dial, but a RPITA to cut out the front panel and mount correctly.)

2557. Re: QUESTION: Homebrew Spread spectrum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-30 04:52:22 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403292052.50fc1d5e@posting.google.com>
Source record: 27394

Timothy@tholtom.freeserve.co.uk (Timothy C Holtom) wrote in message news:<fd697e2e.0403291356.32a08f26@posting.google.com>...
> Can anyone out there tell me a good source of practical information
> (schematics and the like) for building SS transmitters and receivers.
> I'm particularly interested in how I'd design the part of the receiver
> that acquires then tracks the synchronisation signal from the
> transmitter (correlation etc)
>
> I did an initial scout around on the net but the only stuff I could
> come up with was TAPR but there's seemed to have been cancelled.
>
> I'm into experimenting, and not afraid of math (an electronic engineer
> from a long time ago...)
>
>
> Can anyone help me here...
>
>
> Tim

W7WKR was doing some experimenting in that area a few years ago (w/FCC permission), and likely would share some info. I don't have his email address handy, but perhaps you can find it with a search.

Since very accurate time is available, it should be possible to get close in the sequence. A typical way to lock onto pseudorandom things is through correlation. But how do you optimize things when there's fading and very weak signals to begin with?

Cheers,
Tom

2558. Re: HBR-16

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-30 04:56:35 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <106hvg3nk3rl5ef@corp.supernews.com>
Source record: 27395

Ken Scharf wrote:

> xxxxx@xxx.com wrote:
>
>> The HBR web site:
>>
>> http://www.qsl.net/k5bcq/HBR/hbr.html
>>
>>
>> I've built three HBR's. It's a nice receiver.
>>
>> 73,
>> Darrell, WA5VGO
>
> This is something I thought of building several times, but with
> extensive modifications. I just don't care for the classic superhet
> with the first oscillator a vfo. This requires calibration of each
> band, and also tracking adjustments. I prefer the variable first IF
> and a crystal controled first oscillator. (Like the drake 2B). My
> idea of a receiver project would be to add an additional rf/mixer
> front end to the HBR with a first if of 3.5-4.1 (and 6.9-7.5). The
> second IF would be 1.7khz (so it's an 80/40 band image front end).
> The final IF would be 85khz (guess where those IF cans came from).
> Being a compactron nut, the front end would use a 6AR11 rf amp/mixer,
> and the 85khz IF would use another 6AR11. A 6AV11 for the product
> detector and bfo, 6AF11 for the AF stage and agc amp. Other tubes for
> the rest of the rig TBD. Also thought of using toriods in the front end
> and bandswitching them by mounting them in a standard turret tuner
> chassis ripped out of an old TV set. (I've got some real old junk in my
> junk box!).
>
> I have several ARC-5 rx three gang variable
> caps, these have a real nice vernier drive on them. Just attach a
> larger dial, or a drive pulley for a slide rule dial and you have
> something as nice as the Eddystone.
>
> (I sold an Eddystone I had in the junkbox a few years ago on ebay, it
> fetched about $130 IIRC. Nice dial, but a RPITA to cut out the front
> panel and mount correctly.)

That introduces problems because that wide 1st IF encourages
intermodulation unless you really ride the gain budget. The Galaxy V
avoids this by using single-conversion with a 9MHz IF. It uses a single
5-5.5MHz VFO that's premixed with the crystal oscillator output for all
bands except for 20 and 80 (and 20 tunes backwards, in traditional 9MHz

IF fashion).

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

2559. Re: QUESTION: Homebrew Spread spectrum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-30 05:07:02 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <106i03l2g9b94cc@corp.supernews.com>
Source record: 27396

Timothy C Holtom wrote:

> Can anyone out there tell me a good source of practical information
> (schematics and the like) for building SS transmitters and receivers.
> I'm particularly interested in how I'd design the part of the receiver
> that acquires then tracks the synchronisation signal from the
> transmitter (correlation etc)
>
> I did an initial scout around on the net but the only stuff I could
> come up with was TAPR but there's seemed to have been cancelled.
>
> I'm into experimenting, and not afraid of math (an electronic engineer
> from a long time ago...)
>
>
> Can anyone help me here...
>
>
> Tim

The '88 ARRL handbook had a spread-spectrum project. You'll need to
find a buddy to implement one, too.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

2560. Re: HBR-16

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-30 05:38:36 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c4b14s$o6g$1@freenet9.carleton.ca>
Source record: 27248

Tim Wescott (tim@wescottnospamdesign.com) writes:
> Ken Scharf wrote:
>
>> xxxxx@xxx.com wrote:
>>
>>> The HBR web site:
>>>
>>> http://www.qsl.net/k5bcq/HBR/hbr.html
>>>
>>>
>>> I've built three HBR's. It's a nice receiver.
>>>
>>> 73,
>>> Darrell, WA5VGO
>>
>> This is something I thought of building several times, but with
>> extensive modifications. I just don't care for the classic superhet
>> with the first oscillator a vfo. This requires calibration of each
>> band, and also tracking adjustments. I prefer the variable first IF
>> and a crystal controled first oscillator. (Like the drake 2B). My
>> idea of a receiver project would be to add an additional rf/mixer
>> front end to the HBR with a first if of 3.5-4.1 (and 6.9-7.5). The
>> second IF would be 1.7khz (so it's an 80/40 band image front end).
>> The final IF would be 85khz (guess where those IF cans came from).
>> Being a compactron nut, the front end would use a 6AR11 rf amp/mixer,
>> and the 85khz IF would use another 6AR11. A 6AV11 for the product
>> detector and bfo, 6AF11 for the AF stage and agc amp. Other tubes for
>> the rest of the rig TBD. Also thought of using toriods in the front end
>> and bandswitching them by mounting them in a standard turret tuner
>> chassis ripped out of an old TV set. (I've got some real old junk in my
>> junk box!).
>>
>> I have several ARC-5 rx three gang variable
>> caps, these have a real nice vernier drive on them. Just attach a
>> larger dial, or a drive pulley for a slide rule dial and you have
>> something as nice as the Eddystone.
>>
>> (I sold an Eddystone I had in the junkbox a few years ago on ebay, it
>> fetched about $130 IIRC. Nice dial, but a RPITA to cut out the front
>> panel and mount correctly.)
>
> That introduces problems because that wide 1st IF encourages
> intermodulation unless you really ride the gain budget. The Galaxy V
> avoids this by using single-conversion with a 9MHz IF. It uses a single

> 5-5.5MHz VFO that's premixed with the crystal oscillator output for all
> bands except for 20 and 80 (and 20 tunes backwards, in traditional 9MHz
> IF fashion).
>
And your point brings up that once you start modifying something, it's
not the original.

I've seen some of the HBR articles, and followup letters, and the author
did make comment about people "making receivers just like mine, but with
a few changes...". He made the point that he had put effort into making
receivers that not only worked, but could be duplicated, and once someone
started messing with them it tempted problems. One reason they were
popular (though I have no idea how that translates to actual figures)
was that the author had put so much effort into it all, and if I'm
remembering, there were extras like chassis layout patterns that
could be had for a nominal fee.

To some extent, I question building one today. Not only is there
the issue of getting the specific parts, but receiver design has
changed a lot. Are they double conversion? I can't remember, but if
so, they used a fairly broad section at the first IF, before dropping
to the final IF and it's selectivity. There was good reason forty
or so years ago to use such a design, but that hasn't been true for
a long time.

Putting a converter ahead of a tuneable receiver had reason years ago,
but that too has changed.

And if one is going to shift the conversion scheme around to make
it a converter into a tuneable receiver, one might as well start
with any of the numerous designs that did just that.

Of course, there can be reasons of nostalgia for building one,
in which case the tracking down the parts becomes part of the
process, rather than an impediment to building a receiver.

Michael VE2BVW

2561. Re: Omni Antenna question please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-30 07:40:09 UTC
From: Tom Sevart <n2uhc.spam@yahoo.com>
Message-ID: <c4b0ua$2g5bck$1@ID-52518.news.uni-berlin.de>
Source record: 27247

"Bob" <nubob5001@yahoo.com> wrote in message
news:%24ac.18659$n37.1247602@read2.cgocable.net...

> What about that coil? It is a copper winding of about 1/16" copper wire
that
> is about 1" diameter.
> Is that coil required or should the connection be a straight through
> connection with no coil tapping to the ground?

Well it mainly depends on what frequency you want to use it on. Removing
the coil will electrically shorten it, thereby raising the frequency. You
should ask the guy you got it from what frequencies he used it for, or else
use an antenna analyzer to see where it is resonant.

--
Tom Sevart N2UHC
Frontenac, KS
http://www.geocities.com/n2uhc

2562. Re: Do relay ratings apply for RF?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-30 15:01:08 UTC
From: nick <nick@francolini.com>
Message-ID: <pan.2004.03.30.15.01.04.952721@francolini.com>
Source record: 27249

On Mon, 29 Mar 2004 08:17:57 -0600, Tom S wrote:

> Are these specs for hot switching?

No, these would be for switching bands by selecting coil taps at
the base of a vertical.

> I would think that if you can figure out
> a way to switch the relay THEN apply power, everything would be happy and
> the contacts will last much longer.

I agree, but I have a tendancy to destroy equipment :o

>
> Tom
>
>
> "N2EY" <n2ey@aol.comSPAMNO> wrote in message
> news:20040328185819.17713.00000087@mb-m28.aol.com...
>> In article <pan.2004.03.28.13.52.16.131108@francolini.com>, "nick"
>> <nick@francolini.com> writes:
>>
>> >If a (let's say 12v) relay is rated for 10 amps @ 110 volts,
>> >it will take 1100 watts.
>>
>> It will take 1100 watts at 110 volts. But if you lower the voltage to,
> say, 50
>> volts, and the contacts are still rated at 10 amps, it can only handle 500
>> watts. Etc.
>>
>> >Will it take 1000 watts of RF?
>> >
>> >I would think not, but I don't know why.
>>
>> Depends entirely on the RF characteristics - impedance, SWR, etc.
>>
>> The trick is to exceed neither the voltage nor current ratings of the
> contacts.
>> In a 50 ohm RF application with low SWR (less than 2:1), that relay is
> probably
>> limited by its contact voltage rating, not the current rating. Which works
> out
>> to about 200 watts.
>>
>> 73 de Jim, N2EY
>>

2563. Re: QUESTION: Homebrew Spread spectrum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-30 15:58:45 UTC
From: mikea@mikea.ath.cx
Message-ID: <c4c5flhnj1@puck.litech.org>
Source record: 27250

Tom Bruhns <k7itm@aol.com> wrote:

> W7WKR was doing some experimenting in that area a few years ago (w/FCC
> permission), and likely would share some info. I don't have his email
> address handy, but perhaps you can find it with a search.

> Since very accurate time is available, it should be possible to get
> close in the sequence. A typical way to lock onto pseudorandom things
> is through correlation. But how do you optimize things when there's
> fading and very weak signals to begin with?

Well, the nice thing about spread spectrum is that it effectively integrates all that under-the-noise signal and produces something with a lot more amplitude. And yes, the autocorrelation properties of the PN sequences are very important in synchronization: the output of the correlator is something close to 1/n for out-of-sync and 1 for in-sync.

The difficulty is knowing roughly where in a long sequence to start the search, and that's why the military GPS receivers use the C/A (Coarse Acquisition) signals to get the Precise Positioning Service parts of the receivers in the ball park. Once they've done that, it's the same old game: slew the clock and look for a jump in the output of the correlator.

--
Mike Andrews
mikea@mikea.ath.cx
Tired old sysadmin, math jock very much interested in SS

2564. Re: Rare 102 year old edison book

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-30 17:07:56 UTC
From: Keith <salmo@nf.sympatico.ca>
Message-ID: <MPhac.4900$Np3.177044@ursa-nb00s0.nbnet.nb.ca>
Source record: 27251

--- -.- .-.-.- .. .-- .. .-.. .-.. ... -.-. .- -. .. - .-.. .- - . .-.
.-.-.-

The thousand word picture will come later :O)

-.. . -.- . .. - .... .--- --- .---- .- .

2565. Minimum 68,000uf @ 75wv Electrolytics req

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-30 17:25:19 UTC
From: Philip de Cadenet <Philstheboss@thebbc.fslife.co.uk>
Message-ID: <t0MmtPO$1aaAFwsI@philstheboss.freeserve.co.uk>
Source record: 27252

I've searched in vain for the above value cap's.

Would accept a couple in series or parallel to get to the above minimum.

I require two in total.

Would anyone have something similar of good quality that they would be
willing to sell?

Tnx
--
Philip de Cadenet G4ZOW
Transmitters 'R' Us
http://www.transmittersrus.com

2566. Re: HBR-16

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-30 17:43:42 UTC
From: N2EY@AOL.COM
Message-ID: <c2356669.0403300943.1454361e@posting.google.com>
Source record: 27253

Ken Scharf <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:<qE5ac.30443$fl6.13889@bignews1.bellsouth.net>...

> This is something I thought of building several times, but with
> extensive modifications. I just don't care for the classic superhet
> with the first oscillator a vfo. This requires calibration of each
> band, and also tracking adjustments.

All of those things can be dealt with. To me the big problem with the
basic HBR design is the stability of the tunable HFO.

> I prefer the variable first IF
> and a crystal controled first oscillator. (Like the drake 2B).

Me, too. There are some pictures on the HBR site of a receiver I built
about 30 years ago using that principle. It worked very well, and cost
me almost nothing to build.

> My
> idea of a receiver project would be to add an additional rf/mixer
> front end to the HBR with a first if of 3.5-4.1 (and 6.9-7.5). The
> second IF would be 1.7khz (so it's an 80/40 band image front end).

In the 1965 ARRL Handbook there is a receiver described (the HB-65)
which is almost exactly what you are describing, except it used the
100 kHz Miller IFTs. The 85 kHz cans are probably much easier to come
by these days.

> The final IF would be 85khz (guess where those IF cans came from).

Swords into plowshares...

> Being a compactron nut, the front end would use a 6AR11 rf amp/mixer,
> and the 85khz IF would use another 6AR11. A 6AV11 for the product
> detector and bfo, 6AF11 for the AF stage and agc amp.

Nothing wrong with Compactrons, but you are begging for trouble with
that scheme because the layout and section-to-section stray
capacitances will make it difficult to isolate the various stages. The
skirt selectivity of the IF amp will be compromised as well. The
layout will also be a compromise.

> Other tubes for
> the rest of the rig TBD. Also thought of using toriods in the front end
> and bandswitching them by mounting them in a standard turret tuner
> chassis ripped out of an old TV set. (I've got some real old junk in my
> junk box!).

The basic idea is very sound if the Compactrons are used differently.

> I have several ARC-5 rx three gang variable
> caps, these have a real nice vernier drive on them. Just attach a
> larger dial, or a drive pulley for a slide rule dial and you have
> something as nice as the Eddystone.

Yep! Note, however, that except for the 6-9.1 MHz version they have plate shapes that won't yield a linear dial on the ham bands. The 6-9.1 MHz version is almost pure straight line capacitance, and is only 62 pf per section or so.

For the ultimate, though, use the capacitor from an ARC-5 tx, BC-221 or LM freq meter. Nice gear drives and an even bigger dial than the rx versions. Only one section though, but good for "unit oscillator" construction of the HFO. (Only needs to cover the range 5.2-5.7 MHz)

With such a design, it would be a good idea to use a Pullen mixer and no RF stage in the 80/40 bandimage section (at least). There's also the problem of secondary images - you need a lot of selectivity in the front end and 1.7 MHz IF section to avoid signals 170 kHz from the desired one seeping into the second IF. The 2B used a 455 kHz first-fixed-IF for this reason. IM performance is compromised by the fact that the selectivity is so far from the antenna.

Some alternatives to consider:

1) Get some xtals in the 1700 kHz range and build a filter or filters so that the 85 kHz IF is not needed. Perhaps a variable-bandwidth filter using a multigang variable capacitor could made, using 4 crystals and a three-gang capacitor. This approach solves the secondary image problem, too.

2) Have a single tuning range of 3.5 - 4.1 MHz and the fixed IF at 455 kHz or thereabouts. Would require dual conversion on 40 but would also allow use of standard 455 kHz IF filters. Or make your own from FT-241A crystals (which is what I did way back when).

3) Use the filters and heterodyne xtals from a junked transceiver as the basis of a homebrew rx. Hangar-queen/basket case HW-100s, -101s, and SB-line units show up on ePay and at 'fests for quite low prices - far below what the filters and xtals would cost separately. Other types of transceiver can also be good parts sources (Tempo One comes to mind - nice VFO mechanism in them, and the IF is 9 MHz IIRC). KJ4KV turned an early-version FT-101 into a pretty interesting receiver this way.

Besides the HBR website, the HBR reflector offers receiver ideas that range far beyond the classic W6TC HBR series designs.
>
> (I sold an Eddystone I had in the junkbox a few years ago on ebay, it
> fetched about $130 IIRC. Nice dial, but a RPITA to cut out the front
> panel and mount correctly.)

I haven't used an 898 yet but with the template (which I have) it shouldn't be too difficult except for that huge rectangular hole in the panel.

So many great hollowstate rx ideas!

73 de Jim, N2EY

2567. Re: HBR-16

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-30 18:01:29 UTC
From: N2EY@AOL.COM
Message-ID: <c2356669.0403301001.5984c34b@posting.google.com>
Source record: 27254

et472@FreeNet.Carleton.CA (Michael Black) wrote in message
news:<c4b14s$o6g$1@freenet9.carleton.ca>...
> Tim Wescott (tim@wescottnospamdesign.com) writes:
> > Ken Scharf wrote:
> >
> >> xxxxx@xxx.com wrote:
> >>
> >>> The HBR web site:
> >>>
> >>> http://www.qsl.net/k5bcq/HBR/hbr.html
> >>>
> >>>
> >>> I've built three HBR's. It's a nice receiver.
> >>>
> >>> 73,
> >>> Darrell, WA5VGO
> >>
> >> This is something I thought of building several times, but with
> >> extensive modifications. I just don't care for the classic superhet
> >> with the first oscillator a vfo. This requires calibration of each
> >> band, and also tracking adjustments. I prefer the variable first IF
> >> and a crystal controled first oscillator. (Like the drake 2B). My
> >> idea of a receiver project would be to add an additional rf/mixer
> >> front end to the HBR with a first if of 3.5-4.1 (and 6.9-7.5). The
> >> second IF would be 1.7khz (so it's an 80/40 band image front end).
> >> The final IF would be 85khz (guess where those IF cans came from).
> >> Being a compactron nut, the front end would use a 6AR11 rf amp/mixer,
> >> and the 85khz IF would use another 6AR11. A 6AV11 for the product
> >> detector and bfo, 6AF11 for the AF stage and agc amp. Other tubes for
> >> the rest of the rig TBD. Also thought of using toriods in the front end
> >> and bandswitching them by mounting them in a standard turret tuner
> >> chassis ripped out of an old TV set. (I've got some real old junk in my
> >> junk box!).
> >>
> >> I have several ARC-5 rx three gang variable
> >> caps, these have a real nice vernier drive on them. Just attach a
> >> larger dial, or a drive pulley for a slide rule dial and you have
> >> something as nice as the Eddystone.
> >>
> >> (I sold an Eddystone I had in the junkbox a few years ago on ebay, it
> >> fetched about $130 IIRC. Nice dial, but a RPITA to cut out the front
> >> panel and mount correctly.)
> >
> > That introduces problems because that wide 1st IF encourages

> > intermodulation unless you really ride the gain budget. The Galaxy V
> > avoids this by using single-conversion with a 9MHz IF. It uses a single
> > 5-5.5MHz VFO that's premixed with the crystal oscillator output for all
> > bands except for 20 and 80 (and 20 tunes backwards, in traditional 9MHz
> > IF fashion).
> >
> And your point brings up that once you start modifying something, it's
> not the original.

Agreed! However, there's something to be said for both the exact copy
and modification approaches.
>
> I've seen some of the HBR articles, and followup letters, and the author
> did make comment about people "making receivers just like mine, but with
> a few changes...". He made the point that he had put effort into making
> receivers that not only worked, but could be duplicated, and once someone
> started messing with them it tempted problems.

But OTOH some of the mods turned out to be very worthwhile, such as
the 898 dial on the HBR-16 and the product detector mods. There were
also some problems that were only shaken out by the construction of
many copies.

> One reason they were
> popular (though I have no idea how that translates to actual figures)
> was that the author had put so much effort into it all, and if I'm
> remembering, there were extras like chassis layout patterns that
> could be had for a nominal fee.

Yep, a whole packet of photos, layout templates and other stuff could
be had.

Another point was that the HBR series were designed around
then-current-production parts obtainable by mail order. A builder
could get every needed part that way, if necessary, and some did just
that.

> To some extent, I question building one today. Not only is there
> the issue of getting the specific parts, but receiver design has
> changed a lot.

Agreed in part. But within their limitations they are a sound design.
And if you can get the parts, they are "duplicatable" with limited
tools and test equipment.

> Are they double conversion? I can't remember, but if
> so, they used a fairly broad section at the first IF, before dropping
> to the final IF and it's selectivity.

They used a first IF around 1700 kHz (for decent image rejection on
all of HF with only one RF stage) and a second IF at 100 kHz.

The first IF isn't as broad as you might think, particularly in
versions that used two IFTs. Certainly it's much narrower than the
tunable-first-IF designs that followed.

> There was good reason forty
> or so years ago to use such a design, but that hasn't been true for
> a long time.

The 1957 QST article "What's Wrong With Our Present Receivers" pretty
much makes the case for the use of single-conversion and xtal filters
in the low-HF range. The 1965 "Miser's Dream" receiver demonstrated
the principle, but was not a wire-for-wire "duplicate me" article. And
the filters weren't cheap - 1959 price for the Hycon Eastern 2215 kHz
filters was $44 *each*.
>
> Putting a converter ahead of a tuneable receiver had reason years ago,
> but that too has changed.
>
> And if one is going to shift the conversion scheme around to make
> it a converter into a tuneable receiver, one might as well start
> with any of the numerous designs that did just that.

The HB-67, in the ARRL Handbook of 1967, for example.

> Of course, there can be reasons of nostalgia for building one,
> in which case the tracking down the parts becomes part of the
> process, rather than an impediment to building a receiver.
>
I approach the challenge the other way: Look at the readily-available
parts and see what can be built with them. Of course, "readily
available" varies with the builder!

But there's nothing like getting on the air with a 100% homebrew
station. Even kitbuilt isn't quite the same.

73 de Jim, N2EY

2568. Re: I NEED YOUR HELP

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-30 18:19:09 UTC
From: bunnydawg <r.heenan@sympatico.ca>
Message-ID: <X5jac.47295$1A6.879529@news20.bellglobal.com>
Source record: 27255
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy,rec.radio.amateur.space,tnn.radio.a

Gary are you related to Bill Turner by chance ?
Yep all capital letters is considered yelling and quite rude.
Robert
VE3 something or other
"J. Yazel" <jyazel@netset.com> wrote in message
news:srqb6093v1d0lg7t4othdl09ud1fq6076d@4ax.com...
> On Fri, 26 Mar 2004 14:37:05 -0700, "Gary C. Cash" <cash@in-tch.com>
wrote:
>
> >TO ALL RADIO AMATEURS:
> >
> >I, ALONG WITH A FRIEND OF MINE, W7ARO (Ed Bodenberger), ARE TRYING TO
> >COMPILE A LIST OF AMATEUR RADIO OPERATORS AND THEIR CALLSIGNS FOR
HISTORICAL
> >PURPOSES. ALL OF THE FOLLOWING NAMES ARE THOSE OF SILENT KEYS FOR WHICH
WE
> >HAVE NO CALLSIGN AVAILABLE AND ALL ARE FROM MONTANA. IF YOU HAVE AT
SOMETIME
> >WORKED ANY OF THESE INDIVIDUALS AND HAVE RECORD OF A CALLSIGN YOU
RESPONSE
> >WOULD BE GREATLY APPRECIATED.
> >
> >TOM GIBSON
> >HAROLD PETERSON
> >ED BINGLER
> >RON WRIGHT
> >BILL MONEYSMITH
> >PHIL HAGMAN
> >OSCAR RICE
> >
> >73's
> >GARY
> >WQ7S
> >cash@in-tch.com
> > ==========
>
> Hi Gary,
>
> I can't help you yet, but in the meantime, please don't use
> all capital letters. It is considered to be shouting.
>

> Thanks and 73s.
>
> Jack W8RAG
>
>

2569. Re: What's the value of this inductor? <sigh>

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-30 21:32:47 UTC
From: John Jardine <john@jjdesigns.fsnet.co.uk>
Message-ID: <c4coiv$5oo$1@news5.svr.pol.co.uk>
Source record: 27256

Nick Kennedy <wa5bdu@yahoo.com> wrote in message
news:106eumsfhqpgf39@corp.supernews.com...
> OK, but remember that the voltage drop across the inductor plus that
across
> the source resistance don't add directly to the source voltage. With your
> example of 10 mV across L and 100 mV open circuit voltage, the voltage
> across the 50 ohm source resistance is 99.5 mV. That's because they're 90
> degrees out of phase and add in a right triangle fashion.
>
> Maybe you considered that, and that's why you chose a small value of drop
> across the inductor. When that's the case, the hypotenuse and x-side of
the
> triangle are pretty close to equal. But users of this method need to
> understand this simplification and the implied restrictions.
>
> I've used something similar to measure the inductance of chokes too large
> for my meter, such as transformer windings and power supply chokes. You
can
> put a known resistor in series with the choke, put 60 Hz AC across it, and
> measure the two drops. Then calculate the inductance using a method
similar
> to what you've described. But keep the sum of squares relationship in
mind.
> (Supply voltage squared equals drop across resistance squared plus drop
> across inductance squared.) If the inductor has significant resistance,
it
> should be added to the value of the series resistor.
>
> Regards,
>
> Nick, WA5BDU
> in Arkansas
>
> "John Jardine" <john@jjdesigns.fsnet.co.uk> wrote in message
> news:c45627$85j$1@newsg1.svr.pol.co.uk...
[clip]

Yes. This is true. Keep the O/C S/C ratio as wide as you're happy with.
Fortunately this is usually easy to do and the method allows a quick and
(slightly) dirty measurement without the extraneous baggage that
accompanies other methods. I built an (accurate) test unit using this method
that goes down to a FSD of 300nH and though I have a digital LCR bridge the
homebrew item is *always* used to give final conformation and confidence in
an L's value. Measuring an inductor somewhere near it's operating frequency

is essential.
You clearly understood where I was coming in from on this topic. The usual reaction is some kind of patronising look and words like "you can't do that, don't you know anything of electronics?" :-)
regards
john

2570. Re: Link pasted from alt.binaries.schematics.electronic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-30 23:42:28 UTC
From: Bongothegreen@bling.com
Message-ID: <c4d0li$8hr$1@newsg1.svr.pol.co.uk>
Source record: 27257

cute how the trace, overlaps the screen.

2571. Re: HBR-16

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 01:05:41 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <Rqoac.29468$gZ3.25364@bignews3.bellsouth.net>
Source record: 27258

N2EY wrote:
> Ken Scharf <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:<qE5ac.30443$fl6.13889@bignews1.bellsouth.net>...
>
>
>>This is something I thought of building several times, but with
>>extensive modifications. I just don't care for the classic superhet
>>with the first oscillator a vfo. This requires calibration of each
>>band, and also tracking adjustments.
>
>
> All of those things can be dealt with. To me the big problem with the
> basic HBR design is the stability of the tunable HFO.
>
>
>>I prefer the variable first IF
>>and a crystal controled first oscillator. (Like the drake 2B).
>
>
> Me, too. There are some pictures on the HBR site of a receiver I built
> about 30 years ago using that principle. It worked very well, and cost
> me almost nothing to build.
>
>
>>My
>>idea of a receiver project would be to add an additional rf/mixer
>>front end to the HBR with a first if of 3.5-4.1 (and 6.9-7.5). The
>>second IF would be 1.7khz (so it's an 80/40 band image front end).
>
>
> In the 1965 ARRL Handbook there is a receiver described (the HB-65)
> which is almost exactly what you are describing, except it used the
> 100 kHz Miller IFTs. The 85 kHz cans are probably much easier to come
> by these days.
>
>
>>The final IF would be 85khz (guess where those IF cans came from).
>
>
> Swords into plowshares...
>
>
>>Being a compactron nut, the front end would use a 6AR11 rf amp/mixer,
>>and the 85khz IF would use another 6AR11. A 6AV11 for the product

>>detector and bfo, 6AF11 for the AF stage and agc amp.
>
>
> Nothing wrong with Compactrons, but you are begging for trouble with
> that scheme because the layout and section-to-section stray
> capacitances will make it difficult to isolate the various stages. The
> skirt selectivity of the IF amp will be compromised as well. The
> layout will also be a compromise.
>
>
>>Other tubes for
>>the rest of the rig TBD. Also thought of using toriods in the front end
>>and bandswitching them by mounting them in a standard turret tuner
>>chassis ripped out of an old TV set. (I've got some real old junk in my
>>junk box!).
>
>
> The basic idea is very sound if the Compactrons are used differently.
>
>
>>I have several ARC-5 rx three gang variable
>>caps, these have a real nice vernier drive on them. Just attach a
>>larger dial, or a drive pulley for a slide rule dial and you have
>>something as nice as the Eddystone.
>
>
> Yep! Note, however, that except for the 6-9.1 MHz version they have
> plate shapes that won't yield a linear dial on the ham bands. The
> 6-9.1 MHz version is almost pure straight line capacitance, and is
> only 62 pf per section or so.
I would think you want a 'stright line frequency' where the capacitance
changes as the square of the rotation. IE: at half open position the
capacitance is down to 1/4 of the value available at full mesh.
>
> For the ultimate, though, use the capacitor from an ARC-5 tx, BC-221
> or LM freq meter. Nice gear drives and an even bigger dial than the rx
> versions. Only one section though, but good for "unit oscillator"
> construction of the HFO. (Only needs to cover the range 5.2-5.7 MHz)
>
I have a few of those ARC-5 tx caps in my junk box, and at least one
with the dial drive. It binds just a bit though as if the drive shaft
is slightly bent. Just enough to be noticed while turning it with a
good sized knob attached.
> With such a design, it would be a good idea to use a Pullen mixer and
> no RF stage in the 80/40 bandimage section (at least). There's also
> the problem of secondary images - you need a lot of selectivity in the
> front end and 1.7 MHz IF section to avoid signals 170 kHz from the
> desired one seeping into the second IF. The 2B used a 455 kHz
> first-fixed-IF for this reason. IM performance is compromised by the
> fact that the selectivity is so far from the antenna.

With a good 'roofing' filter ahead of the final mixer you should be able to knock down the images from the 1.7mhz if before reaching the 85khz one. I have three 1.7mhz double tuned cans available, with all three in series top coupled with gimick caps I should be able to achieve enough selectivity to avoid secondary image problems. The use of a 455khz IF is also a good idea, and I have a few Collins mech. filters that could be used there as well (a 2.0khz bw out of an R390, a 2.7khz that looks like an S line filter, and a large unit of 1.8khz bw that came out of an if adaptor for an HRO-50 or 60).

With proper layout and shielding I don't see a problem using the 6AR11 in the two stage IF. Hell, they were designed for use at 47mhz in a dual stage TV if where cross coupling would be even more of a problem! The 6AR11 is an excellent semi-remote cutoff amplifier with good overload and cross mod specs equal to the pentodes used in the HBR.

> Some alternatives to consider:
>
> 1) Get some xtals in the 1700 kHz range and build a filter or filters
> so that the 85 kHz IF is not needed. Perhaps a variable-bandwidth
> filter using a multigang variable capacitor could made, using 4
> crystals and a three-gang capacitor. This approach solves the
> secondary image problem, too.
>
> 2) Have a single tuning range of 3.5 - 4.1 MHz and the fixed IF at 455
> kHz or thereabouts. Would require dual conversion on 40 but would also
> allow use of standard 455 kHz IF filters. Or make your own from
> FT-241A crystals (which is what I did way back when).
>
> 3) Use the filters and heterodyne xtals from a junked transceiver as
> the basis of a homebrew rx. Hangar-queen/basket case HW-100s, -101s,
> and SB-line units show up on ePay and at 'fests for quite low prices -
> far below what the filters and xtals would cost separately. Other
> types of transceiver can also be good parts sources (Tempo One comes
> to mind - nice VFO mechanism in them, and the IF is 9 MHz IIRC). KJ4KV
> turned an early-version FT-101 into a pretty interesting receiver this
> way.
>

As for a new design with todays parts, well I have several ideas here begging to be tried. I have quite a few 'Samples' from Analog Devices including many DDS chips. The 400mhz DDS parts would make a great HFO for a single conversion receiver with an IF at 9mhz (again more junkbox filters, including about 1/2 dozen 9mhz 3.2khz 8 pole units out of Gonset Sidewinder rigs purchased at Dayton years ago). Thought I'd use three IF stages with a filter between EACH stage and a final one before the detector. Probably use MC1350's or ancient CA3028's as the IF amps. The front end would use a quad DFET (Siliconix) switching mixer that was in the handbook for several years driven at twice the required HFO frequency (to get push-pull drive using a D Flipflop). Bowing to the junkbox, the front end would be a double or triple tuned filter using

toriods bandswitched using a standard coil tuner chassis as the switch. (The toriods fit nicely in the tuner strips). An 8051 series micro drives the DDS, frequency display on 7 segment LEDs (I have enough of these to choke an alligator) and a rotary encoder drives the micro to select frequency.

Maybe I'm crazy, but I still wonder about puting in a second conversion down to 85khz to use those ARC5 IF cans! Anything wrong with a hybrid radio using the latest IC's and microprocessors along with 60's compactrons! (Just what kind of bandwidth will a properly aligned 85khz if strip using arc5 cans give?)

The above radio would probably end up being a transceiver (cause the extra circuity isn't much) but the finals would end up being 1 or 2 1625 bottles 'cause I have at least a dozen of 'em in the junk box. (Also some IRF531 mosfets which might make a good linear final for about 25 watts a pair....though maybe not to 30mhz....).

I've rambled enough....
73's

> Besides the HBR website, the HBR reflector offers receiver ideas that
> range far beyond the classic W6TC HBR series designs.
>
>>(I sold an Eddystone I had in the junkbox a few years ago on ebay, it
>>fetched about $130 IIRC. Nice dial, but a RPITA to cut out the front
>>panel and mount correctly.)
>
>
> I haven't used an 898 yet but with the template (which I have) it
> shouldn't be too difficult except for that huge rectangular hole in
> the panel.
>
> So many great hollowstate rx ideas!
>
Indeed!

2572. Re: QUESTION: Homebrew Spread spectrum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 02:24:27 UTC
From: Jim Pennell <Nospam@killspam.com>
Message-ID: <vZpac.8196$Dv2.5624@newsread2.news.pas.earthlink.net>
Source record: 27259

A company I used to work for manufactured a frequency hopper spread spectrum unit.

It was a 'slow' hopper, with Ack/noack for packets so it would retransmit a missed data packet which covered the case when a particular channel was occupied.

The acquisition method would also work for a pretty fast frequency hopper too. It used a master unit that sent a sync signal burst every time it jumped to a new channel. The remote that was looking for the master would jump in a duplicate pattern, but at a slower jump rate until it heard the sync signal from the master. the remote would then start hopping at the correct rate, and follow the master as it hopped.

Acquisition might be a bit slow, but it did work nicely, and it allowed other remotes to be turned on at any time and acquire the network.

==========

I have never tinkered with an amateur radio version, but it seems to me that the ARRL has a book on spread spectrum and there are some FCC mandated requirements for the PN code, or the hopping pattern for freq hoppers, to allow the FCC to be able to listen in.

The FCC also limited which frequency ranges Spread Spectrum can be used on, so I'd do a bit of digging before trying to build hardware......

Jim Pennell
N6BIU

2573. Convert 0 to 5 Volts DC to 0 to 10 volts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 04:31:24 UTC
From: Scott <scott2rp789@netscape.net>
Message-ID: <406a4b22_3@news1.prserv.net>
Source record: 27260

I have a circuit that puts out 0 - 5 volts to drive a meter. However the meter I want to use accepts 0 - 10 volts. The response is linear, so if I could just double the voltage, I could make this work. Any simple devices or circuit that can accomplish this? Thanks, Scott.

2574. Re: QUESTION: Homebrew Spread spectrum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 04:32:20 UTC
From: marsgal42@hotmail.com
Message-ID: <d42b5a72.0403302032.150f70f8@posting.google.com>
Source record: 27261

Timothy@tholtom.freeserve.co.uk (Timothy C Holtom) wrote in message
news:<fd697e2e.0403291356.32a08f26@posting.google.com>...
> Can anyone out there tell me a good source of practical information
> (schematics and the like) for building SS transmitters and receivers.
> I'm particularly interested in how I'd design the part of the receiver
> that acquires then tracks the synchronisation signal from the
> transmitter (correlation etc)

How to synchronize to direct-sequence spread spectrum
should be obvious (think Costas Loop).

A sliding-window correlator is a common approach, other-
wise. Three correlators in parallel. One runs a little
ahead, one is on time, the third runs a little behind.
The LO free-runs (deliberately) a little slow or fast.
When the locally-generated PN sequence lines up with
the received sequence, the outputs from the early/late
correlators track the LO, while the on-time correlator
provides the output.

Look in back issues of Wireless World from 1993 for a
fully worked-out example.

Laura Halliday VE7LDH "Que les nuages soient notre
Grid: CN89mg pied a terre..."
ICBM: 49 16.05 N 122 56.92 W - Hospital/Shafte

2575. Re: Minimum 68,000uf @ 75wv Electrolytics req

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 07:49:32 UTC
From: Philip de Cadenet <Philstheboss@thebbc.fslife.co.uk>
Message-ID: <06QAu8CMgnaAFwfS@philstheboss.freeserve.co.uk>
Source record: 27262

Hi Roger,

>I checked, the only 68,000mFd caps are only 50 volts.
>
>Looked it up
>
>Panasonic has two choices....
>ECEP1JP563HA 56,000 at 63 volts working 79 V surge
>ECEP1KP333HA 33,000mFd @ 80V working 100 V surge
>
>Not quite what you wanted... But I didn't find many listings fro
>these. Digikey lists only 15,000mFd at 80 Volts....

I was aware Panasonic had some good sized cap's.

I think I'll contact a distributor and see what their 'cardiac' prices
are like.

Thank you for that.
--
Philip de Cadenet G4ZOW
Transmitters 'R' Us
http://www.transmittersrus.com

2576. Paging Ian White (G3 SEK)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 11:17:05 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <62al60pj1niq9digk04eeb9gg72hdi7t2d@4ax.com>
Source record: 27263

Hi Ian,

Is your e-mail address as shown in the newsgroups valid? I've not
heard anything since mailing you the other day.
Just need a bit of info on that NA you built.

Regards,

Paul

2577. Re: Paging Ian White (G3 SEK)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 12:19:55 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <NCcvt2NrdraAFAL2@ifwtech.co.uk>
Source record: 27264

Paul Burridge wrote:
>
>Is your e-mail address as shown in the newsgroups valid? I've not
>heard anything since mailing you the other day.

No tricks or traps here... and no e-mail from Paul either.

>Just need a bit of info on that NA you built.
>
Followed-up by email.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

2578. Re: Minimum 68,000uf @ 75wv Electrolytics req

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 12:57:35 UTC
From: Hans Summers <hans.summers@tudor.com>
Message-ID: <c4ef7v$2i3sec$1@ID-61331.news.uni-berlin.de>
Source record: 27265

>
> Would accept a couple in series or parallel to get to the above minimum.
>
> I require two in total.
>
> Would anyone have something similar of good quality that they would be
> willing to sell?
>

Farnell sell 47,000 uF @ 100V, part number 3878156 see
http://www.Farnell.com ... not cheap at £58.94 + VAT each. They also sell
15,000 uF @ 100V in various styles.

73 Hans G0UPL
http://www.HansSummers.com

2579. Re: QUESTION: Homebrew Spread spectrum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 13:12:02 UTC
From: ablight@alphalink.com.au
Message-ID: <1fc7b362.0403310512.75ffb61f@posting.google.com>
Source record: 27266

Timothy@tholtom.freeserve.co.uk (Timothy C Holtom) wrote in message
news:<fd697e2e.0403291356.32a08f26@posting.google.com>...
> Can anyone out there tell me a good source of practical information
> (schematics and the like) for building SS transmitters and receivers.
> I'm particularly interested in how I'd design the part of the receiver
> that acquires then tracks the synchronisation signal from the
> transmitter (correlation etc)
>
> I did an initial scout around on the net but the only stuff I could
> come up with was TAPR but there's seemed to have been cancelled.
>
> I'm into experimenting, and not afraid of math (an electronic engineer
> from a long time ago...)
>
>
> Can anyone help me here...
>
>
> Tim

Hi Tim,
this wont be the answer you want but the usual method is to horribly
overdrive your ssb transmitter/linear and that way you are all over
the band! (a joke, OK?)

Miss Smarty Pants (aka Laura Halliday) in her usual inimatble(sp)
style has answered as well, I dont have a PHD so havent a clue what
she is talking about. But she says it should be obvious, maybe you can
figure it out and tell the rest of us uneducated slobs...

73 de VK3BFA Andrew

2580. Re: HBR-16

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 13:29:05 UTC
From: N2EY@AOL.COM
Message-ID: <c2356669.0403310529.448a6bbd@posting.google.com>
Source record: 27267

Ken Scharf <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:<Rqoac.29468$gZ3.25364@bignews3.bellsouth.net>...
> N2EY wrote:
> > Ken Scharf <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:<qE5ac.30443$fl6.13889@bignews1.bellsouth.net>...
> >
> >>I have several ARC-5 rx three gang variable
> >>caps, these have a real nice vernier drive on them. Just attach a
> >>larger dial, or a drive pulley for a slide rule dial and you have
> >>something as nice as the Eddystone.
> >
> >
> > Yep! Note, however, that except for the 6-9.1 MHz version they have
> > plate shapes that won't yield a linear dial on the ham bands. The
> > 6-9.1 MHz version is almost pure straight line capacitance, and is
> > only 62 pf per section or so.

> I would think you want a 'stright line frequency' where the capacitance
> changes as the square of the rotation. IE: at half open position the
> capacitance is down to 1/4 of the value available at full mesh.

That only works with a tuning range of about 2:1. The type of ham band
rx being described has a much more limited tuning range, and needs an
almost-linear capacitance curve to get a linear dial.
> >
> > For the ultimate, though, use the capacitor from an ARC-5 tx, BC-221
> > or LM freq meter. Nice gear drives and an even bigger dial than the rx
> > versions. Only one section though, but good for "unit oscillator"
> > construction of the HFO. (Only needs to cover the range 5.2-5.7 MHz)
> >
> I have a few of those ARC-5 tx caps in my junk box, and at least one
> with the dial drive. It binds just a bit though as if the drive shaft
> is slightly bent. Just enough to be noticed while turning it with a
> good sized knob attached.

Somebody hammered on the shaft to get the knob off, or it was dropped.
Ruined unless you machine a new shaft. *sigh*

> > With such a design, it would be a good idea to use a Pullen mixer and
> > no RF stage in the 80/40 bandimage section (at least). There's also
> > the problem of secondary images - you need a lot of selectivity in the
> > front end and 1.7 MHz IF section to avoid signals 170 kHz from the
> > desired one seeping into the second IF. The 2B used a 455 kHz
> > first-fixed-IF for this reason. IM performance is compromised by the
> > fact that the selectivity is so far from the antenna.

> With a good 'roofing' filter ahead of the final mixer you should be able
> to knock down the images from the 1.7mhz if before reaching the 85khz
> one.

Exactly!

> I have three 1.7mhz double tuned cans available, with all three in
> series top coupled with gimick caps I should be able to achieve enough
> selectivity to avoid secondary image problems. The use of a 455khz IF
> is also a good idea, and I have a few Collins mech. filters that could
> be used there as well (a 2.0khz bw out of an R390, a 2.7khz that looks
> like an S line filter, and a large unit of 1.8khz bw that came out of an
> if adaptor for an HRO-50 or 60).

NICE!
>
> With proper layout and shielding I don't see a problem using the 6AR11
> in the two stage IF. Hell, they were designed for use at 47mhz in a
> dual stage TV if where cross coupling would be even more of a problem!

Not really. The TV applications were broadband and low gain compared
to what you're trying to do at HF. And the manufacturers could do a
whole bunch of not-obvious tricks and PC board prototypes to get what
they wanted.

> The 6AR11 is an excellent semi-remote cutoff amplifier with good
> overload and cross mod specs equal to the pentodes used in the HBR.

I agree 100% - it's just that cascading them at 85 kHz may prove
troublesome.

OTOH, in a 455 kHz design where the selectivity comes from the xtal
filters, you may be OK.

> > Some alternatives to consider:
> >
> > 1) Get some xtals in the 1700 kHz range and build a filter or filters
> > so that the 85 kHz IF is not needed. Perhaps a variable-bandwidth
> > filter using a multigang variable capacitor could made, using 4
> > crystals and a three-gang capacitor. This approach solves the
> > secondary image problem, too.
> >
> > 2) Have a single tuning range of 3.5 - 4.1 MHz and the fixed IF at 455
> > kHz or thereabouts. Would require dual conversion on 40 but would also
> > allow use of standard 455 kHz IF filters. Or make your own from
> > FT-241A crystals (which is what I did way back when).
> >
> > 3) Use the filters and heterodyne xtals from a junked transceiver as
> > the basis of a homebrew rx. Hangar-queen/basket case HW-100s, -101s,
> > and SB-line units show up on ePay and at 'fests for quite low prices -
> > far below what the filters and xtals would cost separately. Other
> > types of transceiver can also be good parts sources (Tempo One comes
> > to mind - nice VFO mechanism in them, and the IF is 9 MHz IIRC). KJ4KV
> > turned an early-version FT-101 into a pretty interesting receiver this

> > way.
> >
> As for a new design with todays parts, well I have several ideas here
> begging to be tried. I have quite a few 'Samples' from Analog Devices
> including many DDS chips. The 400mhz DDS parts would make a great HFO
> for a single conversion receiver with an IF at 9mhz (again more junkbox
> filters, including about 1/2 dozen 9mhz 3.2khz 8 pole units out of
> Gonset Sidewinder rigs purchased at Dayton years ago).

The big question with DDS is the spectral purity of the output. Even
weak artifacts can cause all kinds of birdies and other troubles in
today's RF environment. This is one reason so many folks find the old
designs so appealing - they are "clean" except for the obvious things
like images.

> Thought I'd use
> three IF stages with a filter between EACH stage and a final one before
> the detector.

Very good idea. The best filter goes first, then "cleanup" filters.

> Probably use MC1350's or ancient CA3028's as the IF amps.
> The front end would use a quad DFET (Siliconix) switching mixer that
> was in the handbook for several years driven at twice the required HFO
> frequency (to get push-pull drive using a D Flipflop). Bowing to the
> junkbox, the front end would be a double or triple tuned filter using
> toriods bandswitched using a standard coil tuner chassis as the switch.
> (The toriods fit nicely in the tuner strips). An 8051 series micro
> drives the DDS, frequency display on 7 segment LEDs (I have enough of
> these to choke an alligator) and a rotary encoder drives the micro to
> select frequency.

And the LEDs glow!
>
> Maybe I'm crazy, but I still wonder about puting in a second conversion
> down to 85khz to use those ARC5 IF cans! Anything wrong with a hybrid
> radio using the latest IC's and microprocessors along with 60's
> compactrons! (Just what kind of bandwidth will a properly aligned 85khz
> if strip using arc5 cans give?)

The original design gave a decent SSB passband if the rods were pulled
up. But the shape factor isn't the best and the selectivity winds up
so far from the antenna....

> The above radio would probably end up being a transceiver (cause the
> extra circuity isn't much) but the finals would end up being 1 or 2 1625
> bottles 'cause I have at least a dozen of 'em in the junk box.

Great bottles but the sockets are a pain. Unless you hack up an ARC-5
tx.

The biggest headache I've encountered in transceiver design is finding
a heterodyne combination that works in both directions and uses

available components. All of the classic ones are compromises in one way or another, either on rx or tx.

73 de Jim, N2EY

2581. Shielding data lines to RF circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 14:02:16 UTC
From: Richard Hosking <richardh@iinet.net.au>
Message-ID: <406ad05b$0$16580$5a62ac22@freenews.iinet.net.au>
Source record: 27269
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Dear all
I want to design a DDS board which has attenuators on the output to provide a low level output (<-100dBm)
I have a venerable HP8640B which can give a calibrated output to -137dBm
To achieve this HP have gone to extraordinary lengths to shield the oscillator attenuator/output amp circuits and any control lines - I note there are at least two stages of bypassing/low pass filtering with an intermediate shielded section

My question is: how do I get data and power lines into my DDS chip (in a shielded enclosure) and prevent RF leakage out which will limit the useful minimum level out from the DDS board?
I presume I will have to use a buffer of some sort for the data lines and extensive bypassing on the power lines. I want reasoanbly quick update speeds for my DDS, which is a serial port, which will mean data rates in the MHz region.

Thanks

Richard

2582. WTB Roller Inductor

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 14:05:21 UTC
From: John <john-1@w3zdf.org>
Message-ID: <BeAac.145743$1p.1853363@attbi_s54>
Source record: 27268

Want to buy: 3 kw + roller inductor with non-wire coil,
prefer copper ribbon, with enough coil to cover 75 meters.

tnx john

2583. Re: Shielding data lines to RF circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 14:39:55 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <%KAac.8073$He5.161931@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27270
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"Richard Hosking" <richardh@iinet.net.au> wrote in message
news:406ad05b$0$16580$5a62ac22@freenews.iinet.net.au...

> My question is: how do I get data and power lines into my DDS chip (in a
> shielded enclosure) and prevent RF leakage out which will limit the
> useful minimum level out from the DDS board?
> I presume I will have to use a buffer of some sort for the data lines
> and extensive bypassing on the power lines. I want reasoanbly quick
> update speeds for my DDS, which is a serial port, which will mean data
> rates in the MHz region.

Brute-force filtering of the dc, and optoisolators for the data?

"PM"

2584. Re: Minimum 68,000uf @ 75wv Electrolytics req

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 14:45:48 UTC
From: Philip de Cadenet <Philstheboss@thebbc.fslife.co.uk>
Message-ID: <FxE8shFcmtaAFw5p@philstheboss.freeserve.co.uk>
Source record: 27271

Hello Hans,

>> Would accept a couple in series or parallel to get to the above minimum.
>>
>> I require two in total.
>>
>> Would anyone have something similar of good quality that they would be
>> willing to sell?
>>
>
>Farnell sell 47,000 uF @ 100V, part number 3878156 see
>http://www.Farnell.com ... not cheap at ï¿½58.94 + VAT each. They also sell
>15,000 uF @ 100V in various styles.

Yes, I'd checked Farnell but knew beforehand they were not going to be
cheap.

If I cannot find someone with surplus to requirement stock then it's
probably a case of chasing the surplus houses.

Tnx
--
Philip de Cadenet G4ZOW
Transmitters 'R' Us
http://www.transmittersrus.com

2585. Re: Shielding data lines to RF circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 15:36:39 UTC
From: Fred Bartoli <fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo>
Message-ID: <406ae631$0$9050$626a14ce@news.free.fr>
Source record: 27272
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"Richard Hosking" <richardh@iinet.net.au> a crit dans le message news:
406ad05b$0$16580$5a62ac22@freenews.iinet.net.au...
> Dear all
> I want to design a DDS board which has attenuators on the output to
> provide a low level output (<-100dBm)
> I have a venerable HP8640B which can give a calibrated output to -137dBm
> To achieve this HP have gone to extraordinary lengths to shield the
> oscillator attenuator/output amp circuits and any control lines - I note
> there are at least two stages of bypassing/low pass filtering with an
> intermediate shielded section
>
> My question is: how do I get data and power lines into my DDS chip (in a
> shielded enclosure) and prevent RF leakage out which will limit the
> useful minimum level out from the DDS board?
> I presume I will have to use a buffer of some sort for the data lines
> and extensive bypassing on the power lines. I want reasoanbly quick
> update speeds for my DDS, which is a serial port, which will mean data
> rates in the MHz region.
>

Richard,

I don't have direct experience about this but I'm developping a VNA with pretty tight specs so I had to think about things like this.

Here are some of my reflexions, and also some ideas provided by other people :

Low output level is not the same thing as low leakages : it depends on where leakages couples.
What you don't want is leakages coupled to the output port, but you may have some leakages that will be stopped by your main enclosure (OK, not mW though) and still maintain low level at the output port. Whether this can be tolerated or not depends on the rest of your equipment.

Besides the DC/command lines, to achieve accurate low level output will require good internal shielding between the DDS section and the attenuator : 1dB accuracy at -100dBm means leakages coupled to the output has to be under -120dBm and 0.1dB lower this to -140dBm.
At this level, ground plane management can be "difficult". Depending on your frequency range it might also help to provide separation between the DDS and the attenuator with a small xformer.
You'll have to think to current paths for both cases, high frequency and low frequency, if your frequency span doesn't allow an xformer, because currents

spreads differently, depending on freq.
I've used fasthenry (a freeware prog) with great success to model this kind of things in another application.

If you really need very, very good shielding (radiated power inside the enclosure) it might be easier/better to "double shield" the beast and to add a lowpass section between the 2 shields.
Again, think to current paths and that common mode is your enemy ("ground" potential that's shifted by return currents).

For the DDS command lines, optos might help, but maybe not as much as expected if you want a high speed link.
If you really want high speed and isolation I'd go for an optic fiber. Not very expensive and coupled with a double shielded box, you'll have vanishingly low leakages.

Just think to neglect nothing and you're OK.

Thanks,
Fred.

2586. Can Kenwood TS-930s IF output be connected directly to scope?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 15:58:22 UTC
From: nick <nick@francolini.com>
Message-ID: <pan.2004.03.31.15.58.21.929366@francolini.com>
Source record: 27273

I want to use my Tek 475a scope as a station monitor. Can I connect
it directly to the "IF out" connection (used for the Kenwood station
monitor scope)?

Tnx
Nick
n1pzy

2587. Re: Can Kenwood TS-930s IF output be connected directly to scope?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 16:23:07 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <106ls36aslgia98@corp.supernews.com>
Source record: 27274

nick wrote:

> I want to use my Tek 475a scope as a station monitor. Can I connect
> it directly to the "IF out" connection (used for the Kenwood station
> monitor scope)?
>
> Tnx
> Nick
> n1pzy

Electrically yes. I'm not sure if a scope can be configured to act like
a station monitor, so you may not be happy with what you see.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

2588. Re: Convert 0 to 5 Volts DC to 0 to 10 volts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 16:25:37 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <106ls7t1i0vo303@corp.supernews.com>
Source record: 27275

Scott wrote:

> I have a circuit that puts out 0 - 5 volts to drive a meter. However the
> meter I want to use accepts 0 - 10 volts. The response is linear, so if
> I could just double the voltage, I could make this work. Any simple
> devices or circuit that can accomplish this? Thanks, Scott.

A different meter. Sorry, I couldn't resist.

If you have a 12V supply handy you could use an op-amp to amplify the
0-5V by 2. You'd need one op-amp, a bypass cap or two, and two
equal-value resistors. This is an easy circuit and should be in any
ARRL Handbook after 1970 or so. Even one of those "Engineers
Mini-Notebooks" from Rat-Shack should do, if there's one on op-amps.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

2589. Re: Paging Ian White (G3 SEK)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 17:05:08 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <vful60thlaisfimqt2fffem5k6kl09udj1@4ax.com>
Source record: 27276

On Wed, 31 Mar 2004 13:19:55 +0100, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> wrote:

>Paul Burridge wrote:
>>
>>Is your e-mail address as shown in the newsgroups valid? I've not
>>heard anything since mailing you the other day.
>
>No tricks or traps here... and no e-mail from Paul either.
>
>>Just need a bit of info on that NA you built.
>>
>Followed-up by email.

and what is the trick to receive an answer? Suppose you receive so
many that you can't send a reply?

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

2590. Re: Convert 0 to 5 Volts DC to 0 to 10 volts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 17:31:18 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403310931.550b1fb3@posting.google.com>
Source record: 27277

Scott <scott2rp789@netscape.net> wrote in message news:<406a4b22_3@news1.prserv.net>...
> I have a circuit that puts out 0 - 5 volts to drive a meter. However the
> meter I want to use accepts 0 - 10 volts. The response is linear, so if
> I could just double the voltage, I could make this work. Any simple
> devices or circuit that can accomplish this? Thanks, Scott.

An easy way to double the voltage is to use an op amp circuit. If you use an op amp with rail-to-rail input and output, or at least including the negative rail, you can get by with a single power supply. You'd just feed power to the op amp (e.g., 12V or 15V to the +power pin, and ground/common to the -power pin), connect the input signal to the (+) op amp input, and connect two equal-value resistors (say 100kohms each), one from ground/common to the (-) input, and one from (-) input to output. Meter to output terminal. To find an appropriate op amp, try searches on web sites like National Semiconductor, Maxim, Analog Devices, Texas Instruments, Linear Technology, ... You get the picture...a awful lot of companies make such parts. Just pick one that suits your needs rail-to-rail operation and power supply voltage...likely everything else will be OK...stay with low speed ones for low power and lack of problems with circuit layout.

But why not make it even simpler? Take the meter apart, and locate the series resistor. Replace it with a resistor of half the value. Then you'll have a 0-5V meter, and no power-draining op amp circuit will be required.

Cheers,
Tom

2591. Re: Convert 0 to 5 Volts DC to 0 to 10 volts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 19:26:11 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c4f60j$6go$1@freenet9.carleton.ca>
Source record: 27278

Tom Bruhns (k7itm@aol.com) writes:
>
> But why not make it even simpler? Take the meter apart, and locate
> the series resistor. Replace it with a resistor of half the value.
> Then you'll have a 0-5V meter, and no power-draining op amp circuit
> will be required.
>
I started to post an answer like that, until I realized that he
didn't specify what kind of meter.

I'd even go further, to point out that while analog meters have
all kinds of scales, they may not even have a resistor built in.
They might just be a current meter and expect an external resistor
in order to read whatever is on the scale. This the more so
if it's just the movement, but obviously not the case if it's an
actual "voltmeter" with the movement in a box etc.

If it's just the meter movement, and does not actually have the
resistor inside, then one has to calculate the resistor value
using ohms law.

Michael VE2BVW

2592. Re: Convert 0 to 5 Volts DC to 0 to 10 volts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 19:55:55 UTC
From: see sea oh ecks at you aitch see dot comm <spammers@bugger.off.invalid>
Message-ID: <c4f7obavo1@gabriel.uhc.com>
Source record: 27279

Scott <scott2rp789@netscape.net> wrote:
> I have a circuit that puts out 0 - 5 volts to drive a meter. However the
> meter I want to use accepts 0 - 10 volts. The response is linear, so if
> I could just double the voltage, I could make this work. Any simple
> devices or circuit that can accomplish this? Thanks, Scott.

Open up the meter movement and locate the resistor that is in series
with the meter movement. Using Ohm's Law, calculate what the correct
value is to make the meter's pointer indicate full-scale-deflection
with a 5V EMF applied.

Robert's your mother's brother.
--
Chris Cox, N0UK/G4JEC NIC Handle: CC345
UnitedHealth Technologies, MN013-N300, UNIX Solutions Group
6150 Trenton Lane North, Plymouth, MN 55440 1-763-744-1723
email: ccox@uhc.com (work) chrisc@chris.org (home)
If at first you don't succeed, skydiving is not for you.

2593. Re: Shielding data lines to RF circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 20:16:21 UTC
From: k7itm@aol.com
Message-ID: <3200347.0403311216.6d8b9471@posting.google.com>
Source record: 27280
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Fred gave you a very nice bunch of ideas.

For data lines, you might consider using differential signalling. You can apply common-mode choking fairly easily, without disturbing the data. But if you put capacitance to ground, you'd have to be very careful to keep it balanced, and to not have so much it causes signal degradation.

We fairly regularly deal with high isolation out to 100MHz and a bit beyond, and it hasn't proven to be terribly difficult. We have things like switching power supplies, whose noise would cause lots of problems if it got into the wrong places. One of the key tricks is to keep loop areas very tight. Another is to be very sure that there is a return path for everything, and that the return path is close to the outgoing path. That's really the same as keeping loop areas low. There is a lot of advantage to using multilayer boards and SMT parts.

Not long ago, I revamped a board that had a heavy cast shield "clam shell" bolted around a critical area of the board. (It digitizes wideband analog inputs, and has lots of digital communications going on not far from the analog stuff.) My new design uses a simple snap-on folded metal shield, and I'm not even convinced it needs that...and the spuriouses are at least 20dB lower than the old board, down in the -120dBfs region as I recall. In laying out the board, we simply paid a lot of attention to keeping things very tight, taking advantage of SMT parts and differential signalling. Think of everything as an antenna that can radiate and/or pick up signals, and minimize their ability to do that. And realize that current in any copper conductor causes a voltage drop that you must avoid sharing with some other circuit you don't want the signal getting into.

I gather you want a stepped attenuator on the output of your DDS. You may well want to have the attenuator itself be a separate board with some decent shielding between sections, and essentially DC controls (to relays??) to control the steps. Common mode choking on the RF signal cable should be helpful.

Cheers,
Tom

Richard Hosking <richardh@iinet.net.au> wrote in message news:<406ad05b$0$16580$5a62ac22@freenews.iinet.net.au>...
> Dear all
> I want to design a DDS board which has attenuators on the output to
> provide a low level output (<-100dBm)

> I have a venerable HP8640B which can give a calibrated output to -137dBm
> To achieve this HP have gone to extraordinary lengths to shield the
> oscillator attenuator/output amp circuits and any control lines - I note
> there are at least two stages of bypassing/low pass filtering with an
> intermediate shielded section
>
> My question is: how do I get data and power lines into my DDS chip (in a
> shielded enclosure) and prevent RF leakage out which will limit the
> useful minimum level out from the DDS board?
> I presume I will have to use a buffer of some sort for the data lines
> and extensive bypassing on the power lines. I want reasoanbly quick
> update speeds for my DDS, which is a serial port, which will mean data
> rates in the MHz region.
>
> Thanks
>
> Richard

2594. Re: QUESTION: Homebrew Spread spectrum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 21:09:18 UTC
From: JackGibson@hotmail.com
Message-ID: <72e86d08.0403311309.2d2a27d3@posting.google.com>
Source record: 27281

ablight@alphalink.com.au (Andrew VK3BFA) wrote in message
news:<1fc7b362.0403310512.75ffb61f@posting.google.com>...

> Hi Tim,
> this wont be the answer you want but the usual method is to horribly
> overdrive your ssb transmitter/linear and that way you are all over
> the band! (a joke, OK?)
>
> Miss Smarty Pants (aka Laura Halliday) in her usual inimatble(sp)
> style has answered as well, I dont have a PHD so havent a clue what
> she is talking about. But she says it should be obvious, maybe you can
> figure it out and tell the rest of us uneducated slobs...

What's with the personal abuse? Her answer made perfect
sense to me.

A direct sequence signal is spread by BPSK modulation at the
chip rate. Double the frequency and the 0/180 phase shifts
become 0/360, removing the spreading.

- Jack

2595. Re: Shielding data lines to RF circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 22:13:02 UTC
From: Rene Tschaggelar <none@none.net>
Message-ID: <406b4296$0$715$5402220f@news.sunrise.ch>
Source record: 27282
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Richard Hosking wrote:
> Dear all
> I want to design a DDS board which has attenuators on the output to
> provide a low level output (<-100dBm)
> I have a venerable HP8640B which can give a calibrated output to -137dBm
> To achieve this HP have gone to extraordinary lengths to shield the
> oscillator attenuator/output amp circuits and any control lines - I note
> there are at least two stages of bypassing/low pass filtering with an
> intermediate shielded section
>
> My question is: how do I get data and power lines into my DDS chip (in a
> shielded enclosure) and prevent RF leakage out which will limit the
> useful minimum level out from the DDS board?
> I presume I will have to use a buffer of some sort for the data lines
> and extensive bypassing on the power lines. I want reasoanbly quick
> update speeds for my DDS, which is a serial port, which will mean data
> rates in the MHz region.

Have a look at the ADuM1400 series of magnetic isolators from AD.
Yes, double shielding might be necessary and probably differential
signals. Put the whole into a solid block of Alu.
What attenuator are you going to use ? For what frequency range ?

Rene
--
Ing.Buero R.Tschaggelar - http://www.ibrtses.com
& commercial newsgroups - http://www.talkto.net

2596. Re: Do relay ratings apply for RF?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 22:40:52 UTC
From: ehsjr@bellatlantic.net
Message-ID: <406B493B.E739FD5C@bellatlantic.net>
Source record: 27283

nick wrote:
>
> On Mon, 29 Mar 2004 08:17:57 -0600, Tom S wrote:
>
> > Are these specs for hot switching?
>
> No, these would be for switching bands by selecting coil taps at
> the base of a vertical.
>
>

The relay contacts can handle it fine, provided you
don't hot switch. You will introduce an impedance
bump in the transmission line. (The relay contacts and
associated wiring become part of the transmission line.)
Don't know how large that will be.

2597. Low power 88-108 MHz retransmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 23:38:33 UTC
From: Robert Haston <rehaston@earthlink.net>
Message-ID: <ZDIac.6062$NL4.1665@newsread3.news.atl.earthlink.net>
Source record: 27284

25 of us work in a metal building and only receive 1 clear station. I have a great outdoor antenna. I could get a cable boost system and run coax to everyone's radios, but I would like to instead boost it up to 100 mW or so and run it into an indoor antenna.

I have found amps that do this to boost cable signals for splitting, but I cannot find one a little more powerful to feed an antenna.

Any ideas?

--
Robert Haston
Satellite Beach, FL

2598. NEW PROGRAM - Input Impedance & SWR of resonant antenna.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-03-31 23:43:55 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c4fl3r$ge4$1@sparta.btinternet.com>
Source record: 27285

Program models a 1/4-wave vertical and 1/2-wave dipole antenna to
demonstrate how input impedance and SWR behave in the vicinity of resonance.

Transmission line Zo can be varied to match the resonant antenna. Frequency
can then be varied to observe how SWR varies over the band.

Download program R_X_SWR in a few seconds and run immediately.

No increase in price.

....
Regards from Reg, G4FGQ
For Free Radio Design Software go to
http://www.btinternet.com/~g4fgq.regp
....

2599. Re: Shielding data lines to RF circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 02:18:03 UTC
From: John Jardine <john@jjdesigns.fsnet.co.uk>
Message-ID: <c4ftlosrs1@news7.svr.pol.co.uk>
Source record: 27286
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Richard Hosking <richardh@iinet.net.au> wrote in message
news:406ad05b$0$16580$5a62ac22@freenews.iinet.net.au...
> Dear all
> I want to design a DDS board which has attenuators on the output to
> provide a low level output (<-100dBm)
> I have a venerable HP8640B which can give a calibrated output to -137dBm
> To achieve this HP have gone to extraordinary lengths to shield the
> oscillator attenuator/output amp circuits and any control lines - I note
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> intermediate shielded section
>
> My question is: how do I get data and power lines into my DDS chip (in a
> shielded enclosure) and prevent RF leakage out which will limit the
> useful minimum level out from the DDS board?
> I presume I will have to use a buffer of some sort for the data lines
> and extensive bypassing on the power lines. I want reasoanbly quick
> update speeds for my DDS, which is a serial port, which will mean data
> rates in the MHz region.
>
> Thanks
>
> Richard
>

When I was very poor, I built a spectrum analyser. It took an eternity,
albeit much was learnt. By far the costliest and most time consuming lesson
was finding I hadn't a hope in hell of meeting a decent performance without
enclosing every circuit block in it's own screened casing, each with
extensive 'cleaning' of the incoming power and control lines. Even the power
supply transformer had a mu-metal screen to reduce magnetic field effects.
regards
john

2600. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 02:27:04 UTC
From: ehsjr@bellatlantic.net
Message-ID: <406B7E37.B37FC2E0@bellatlantic.net>
Source record: 27288

Paul Burridge wrote:
>
> On Mon, 08 Mar 2004 15:29:35 -0600, Dennis <Howdy
> Doody@howdydoody.net> wrote:
>
> > Yes, but why "73", why not "74", or even "69".
>
> When keyed in Morse code it has a certain characterstic 'ring' to it
> that few other two-number combinations do. Another one is "VA"
> (message ends). Keen CWers will no doubt be able to think of a few
> more that fall into that category...

Another neat thing: message ends ("SK" or "VA" run
together) can be, and sometimes is, spoken as
"diddleedadeda" - pronounced diddle e dah de dah
and that has a certain "ring" to ir.

> --
>
> The BBC: Licensed at public expense to spread lies.

2601. Re: HBR-16

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 02:45:50 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <y0Lac.462$xW1.128@bignews4.bellsouth.net>
Source record: 27287

> The big question with DDS is the spectral purity of the output. Even
> weak artifacts can cause all kinds of birdies and other troubles in
> today's RF environment. This is one reason so many folks find the old
> designs so appealing - they are "clean" except for the obvious things
> like images.
>
The big problem with DDS is getting a good anti-aliasing filter on the
output to satisfy Mr. Nyquist. Trying to build a good 'brick wall' low
pass filter is insane. Running the DDS with a clock many times greater
than the highest output frequency helps, with an injection frequency of
39mhz on 10 meters with a 9mhz if a 400mhz DDS clock is 5x the Nyquist
requirement. Rather than using a low pass filter, I'd use switchable
bandpass filters, much more rejection of unwanted spurs and a cleaner
output. Not as simple to build, you have to switch filters to change
bands, but hey, I can always GANG several tv tuner chassis for my
band switch! (I knew those old TV sets I caniblized would come in handy!)

>
>>Thought I'd use
>>three IF stages with a filter between EACH stage and a final one before
>>the detector.
>
>
> Very good idea. The best filter goes first, then "cleanup" filters.
>
Actually those filters are identical. But another idea is a double
conversion with both 9mhz and 455khz if's. Then by tuning the second
conversion oscillator you can 'overlap' the bandpass of both sets of
filters to use only a portion of them, and if you also move the bfo
frequency you can move the position of the signal within the resulting
bandpass.

>
>>The above radio would probably end up being a transceiver (cause the
>>extra circuity isn't much) but the finals would end up being 1 or 2 1625
>>bottles 'cause I have at least a dozen of 'em in the junk box.
>
>
> Great bottles but the sockets are a pain. Unless you hack up an ARC-5
> tx.
My junk box has a few 1625 size sockets, two ceramic 'plate' types and a
large saddle mount. Actually these sockets are easy to find and not too
expensive. Antique Electronic Supply has them, and they show up on Ebay
often. No need to use ones out of ARC5 xmtrs.

I also have a good number of 6AG7 tubes, they would make a good driver stage for the 1625s. (BTW 6AG7 is sorta an octal version of the 6CL6). If I used a single 1625 in the final, it would be good for about 25 watts output without straining. Then if I needed more power, I'd build a linear amp using a 2 or 3 811A's (that's 340-410 Watts PEP output). Not a full gallon, but the extra few db ain't worth the cost! I have some 813's in the junkbox, but the sockets for them are costly, and they have such HIGH output capacitance that making a good tank circuit in a single ended amp is rather a pain. Still a grounded grid tetrode circuit looks interresting! (cathode driven with normal g1 and g2 voltages).

>
> The biggest headache I've encountered in transceiver design is finding
> a heterodyne combination that works in both directions and uses
> available components. All of the classic ones are compromises in one
> way or another, either on rx or tx.
If you have enough filters you can put separate filters in the tx and rx chains, and even use double conversion on the rx but single conversion on tx. Then you can use a separate tunable bfo for the receiver. The bandwidth and center frequency of the tx filter can be selected for good audio, while the rx filter(s) for selectivity. Tx bandwidth is a function of audio channel filtering, alc, and NOT overdriving anything.

2602. Re: tube based power supply

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 03:16:38 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <FsLac.3154$ym1.912@bignews6.bellsouth.net>
Source record: 27289

Avery Fineman wrote:
> In article <4065B885.56A5@virgin.net>, Peter John Lawton
> <peter_john.lawton@virgin.net> writes:
>
>
>>> A slight advantage of vacuum tubes in capacitor-input rectifier
>>> circuits was that the very high initial turn-on surge isn't there;
>>> a vacuum tube diode literally turns on slowly as the filament
>>> warms up. In cheaper tube designs that was offset by the
>>> higher heat dissipation of tube rectifiers creating a local hot
>>> spot much higher than with semiconductor rectifier diodes.
>>> [typical heat dissipation of a 5Y3 common dual-diode in 100
>>> Watt units was 15 to 20 Watts all by itself]
>>
>>I seem to remember the 5Y3 as directly heated which means it warms up
>>before the rest of the valves in the set so producing high HT value
>>intitially. Need to take this into account with electrolytics.
>
>
> By comparison to semiconductor diode rectifiers, any tube/valve
> diode type with hard vacuum is slooooooow to turn on. A solid-
> state diode starts conducting as soon as forward conduction
> voltage is achieved. That causes an enormous (relative) surge in
> charging current for the input filter capacitor which, before turn-on,
> had no charge at all. Given no load resistance at this point in
> time, all of that charging current is flowing in that input filter
> capacitor. If the primary power is applied at or near the peak of
> AC voltage, the only thing limiting the current surge value is the
> transformer total inductance and winding resistance, diode
> internal resistance, equivalent series resistance (ESR) of the
> input filter capacitor, and wiring resistance (negligible by
> comparison). That can be one #$%^&!!! large current pulse.
> For any sort of longevity, the solid-state rectifier diodes need to
> be selected for their "safe" forward current surge ratings.
>
> For a hard vacuum (as opposed to gas, like mercury-vapor types)
> diode, even directly-heated, the initial diode "resistance" goes from
> near infinity to near full conduction conditions in many cycles of
> the AC input voltage. There is nowhere near the slug of current
> at initial turn-on as with solid-state diodes. Tube diode rectifiers
> can be classified as "gentle" towards input filter capacitors, so
> much so that this surge current was seldom mentioned in older
> texts. The conditions you highlight are a slightly different one...
>

> In a tube rectifier, yes, a directly-heated cathode will apply the
> full peak voltage quicker than the rest of a radio using indirectly-
> heated cathode tubes. The initial load resistance is very high
> and the input filter capacitor will thus reach the equal of the peak
> AC input voltage. That's the major reason of having a Working
> Voltage rating of minimum 1.5 times the AC RMS input voltage
> (allowance for 10% over-nominal line voltage). Once the rest of
> the tubes warmed up, the load resistance dropped, and now the
> steady-state condition of the entire supply circuit could be
> assumed...and the DC output voltage dropped to design levels.
>
> The major cause of failure in millions of 5-tube BC receivers
> other than tube filament burn-out, was the cheapness of the
> input filter capacitor. To improve profits of a very economical-
> to-buy unit, designers brought the working voltages of the
> (generally) cardboard tube cased electrolytic filter capacitors
> down to the minimum value. Few of those millions of BC
> receivers were designed for good heat dissipation...the total
> filament string dissipation was 17 1/4 Watts plus another 5 W
> loss in the half-wave diode tube rectifier voltage drop. The actual
> useable power (the "B+") was 15 W. That would be at least
> 38 Watts of heat dissipated in a small plastic enclosure. Those
> waxed cardboard tube cased electrolytics could only dissipate
> any internal heating (from ESR) through their wire leads.
>
> More robust tube equipment used aluminum-can-cased
> electrolytics and large areas of aluminum chassis metal to help
> distribute the internal heating and dissipate it better. Designers
> used greater safety margins and increased the working voltage
> ratings of electrolytic and some other capacitors. With higher
> sales values of such specialized products, they didn't have to
> skimp on the parts in order to stay market competitive.
>
> In more recent simple power supplies, you will still find some
> cases of input filter capacitor failures but the incidence of diode
> rectifier failures has also risen due to designers selecting diodes
> with lower surge current ratings (not necessarily due to economic
> reasons...more a case of not paying attention to it). The focus of
> failure reasons has changed over the years but it is still a rather
> more complex set of causes involved and not just in circuit
> design.
>
> One thing I've observed over quite a while of pushing electrons
> around is that "old" tube-based equipment design talked overly
> much about voltage levels and neglected current flow things.
> [I used to be guilty of that but grew out of it due to smoking...of
> the equipment, not me...:-)] In more "modern" electronics in
> general, BOTH voltage and current have to be considered equally
> and basic circuit considerations can't get by with simple rules of
> thumb for tube circuits.

>
> Len Anderson
> retired (from regular hours) electronic engineer person
Many newer eletrolytic caps have both a 'surge' and a 'working' voltage rating. I don't know if this is just a new parameter, or if the newer caps were engineered to handle a brief surge of voltage while 'charging'. In anycase using 150v caps in a circuit supplied by 120v is NOT allowing for the peak voltage. I think in a half wave circuit there is probably a lower peak since it is reached in double the time between peaks. Even so, 180v or even 200v caps should be used. I've seen filter caps now being made in a 160v rating for line service, but that's still too low for safety (but maybe these units carry a higher 'surge' voltage rating).

2603. Re: QUESTION: Homebrew Spread spectrum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 03:27:49 UTC
From: Jim Pennell <Nospam@killspam.com>
Message-ID: <V_Lac.9944$Dv2.3149@newsread2.news.pas.earthlink.net>
Source record: 27290

----- Original Message -----
From: "Laura Halliday" <marsgal42@hotmail.com>
Newsgroups: rec.radio.amateur.homebrew
Sent: Tuesday, March 30, 2004 8:32 PM
Subject: Re: QUESTION: Homebrew Spread spectrum

> How to synchronize to direct-sequence spread
> spectrum should be obvious (think Costas Loop).
>
> A sliding-window correlator is a common approach,
> otherwise. Three correlators in parallel. One runs
> a little ahead, one is on time, the third runs a
> little behind.
>
> The LO free-runs (deliberately) a little slow or
> fast. When the locally-generated PN sequence lines
> up with the received sequence, the outputs from the
> early/late correlators track the LO, while the
> on-time correlator provides the output.
>

Thanks for the info, Laura. I never did any work with a Direct sequence system, but this makes a lot of sense.

Jim Pennell
N6BIU

2604. Re: QUESTION: Homebrew Spread spectrum

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 04:22:17 UTC
From: ablight@alphalink.com.au
Message-ID: <1fc7b362.0403312022.20632934@posting.google.com>
Source record: 27291

JackGibson@hotmail.com (Jack Gibson) wrote in message
news:<72e86d08.0403311309.2d2a27d3@posting.google.com>...
> ablight@alphalink.com.au (Andrew VK3BFA) wrote in message
news:<1fc7b362.0403310512.75ffb61f@posting.google.com>...
>
> > Hi Tim,
> > this wont be the answer you want but the usual method is to horribly
> > overdrive your ssb transmitter/linear and that way you are all over
> > the band! (a joke, OK?)
> >
> > Miss Smarty Pants (aka Laura Halliday) in her usual inimatble(sp)
> > style has answered as well, I dont have a PHD so havent a clue what
> > she is talking about. But she says it should be obvious, maybe you can
> > figure it out and tell the rest of us uneducated slobs...
>
> What's with the personal abuse? Her answer made perfect
> sense to me.
>
> A direct sequence signal is spread by BPSK modulation at the
> chip rate. Double the frequency and the 0/180 phase shifts
> become 0/360, removing the spreading.
>
> - Jack

Hi Jack,
it wasnt meant as abuse - merely that I didnt understand Lauras
references. If you think being called a smarty pants is abuse, then
you have had a VERY sheltered life - or perhaps its cultural, - BTW -
I went to her site and read the papers she has there - the writing is
clear, succinct and on a level that I can understand. Maybe it was
asking a bit much for Laura to "dumb down" her reply, and I have no
right to expect her to do this. But I rely on these groups as
tutorials on the wide variety of things I dont understand - I am a
mere technician who spends his working life trying to figure out what
the design engineer was trying to do and why it failed after only a
few months in service.

Hope this clears this up

de VK3BFA Andrew

2605. Re: Low power 88-108 MHz retransmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 08:04:29 UTC
From: "Barry L. Ornitz" <ornitz@tricon.net>
Message-ID: <n2Qac.9160$Hs1.2770@fe03.usenetserver.com>
Source record: 27292

Robert,

First the legal issue...

For an unlicensed (FCC Part 15) transmitter on
the FM broadcast band, your field strength from
your transmitter must be less than 250 microvolts
per meter measured at 3 meters from the antenna.
This works out to a transmitter power measured in
NANOWATTS [about 6E-9 watts for a quarter wave
vertical antenna if my memory serves]. This is
about 10 million times lower power than the 100
milliwatts you were thinking. Basically this
gives a range with a sensitive receiver of at
most 200 feet with a clear path and no
obstructions.

Secondly, the practical issue...

These cable amplifiers have a high noise figure
and they produce lots of intermodulation
distortion. They are designed for relatively
high input levels and with the high noise figure,
they do not work well with the weak signals from
an antenna. A friend tried one of these once to
see if he could boost his outdoor TV antenna
signal. It made matters worse on most of the
stations.

Dr. Barry L. Ornitz WA4VZQ ornitz@tricon.net

"Robert Haston" <rehaston@earthlink.net> wrote in message
news:ZDIac.6062$NL4.1665@newsread3.news.atl.earthlink.net...
> 25 of us work in a metal building and only receive 1 clear station. I
have
> a great outdoor antenna. I could get a cable boost system and run coax
to
> everyone's radios, but I would like to instead boost it up to 100 mW or
so
> and run it into an indoor antenna.
>
> I have found amps that do this to boost cable signals for splitting, but
I
> cannot find one a little more powerful to feed an antenna.
>
> Any ideas?

>
> --
> Robert Haston
> Satellite Beach, FL
>
>

2606. Message to Tom Bruhns

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 13:07:09 UTC
From: Fred Bartoli <fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo>
Message-ID: <406c1413$0$9114$626a14ce@news.free.fr>
Source record: 27293

Hi Tom,
I've received your last message and tried to reply to your aol account but
the message is rejected somewhere.
Is it still working ?

Can you send me an email from another address so that I can reply you ?

Thanks,
Fred.

2607. Re: Shielding data lines to RF circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 13:33:05 UTC
From: Richard Hosking <richardh@iinet.net.au>
Message-ID: <406c1b08$0$16576$5a62ac22@freenews.iinet.net.au>
Source record: 27294
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Many thanks for the replies
That has given me some ideas for a start

Richard

Richard Hosking wrote:
> Dear all
> I want to design a DDS board which has attenuators on the output to
> provide a low level output (<-100dBm)
> I have a venerable HP8640B which can give a calibrated output to -137dBm
> To achieve this HP have gone to extraordinary lengths to shield the
> oscillator attenuator/output amp circuits and any control lines - I note
> there are at least two stages of bypassing/low pass filtering with an
> intermediate shielded section
>
> My question is: how do I get data and power lines into my DDS chip (in a
> shielded enclosure) and prevent RF leakage out which will limit the
> useful minimum level out from the DDS board?
> I presume I will have to use a buffer of some sort for the data lines
> and extensive bypassing on the power lines. I want reasoanbly quick
> update speeds for my DDS, which is a serial port, which will mean data
> rates in the MHz region.
>
> Thanks
>
> Richard
>

2608. Re: Low power 88-108 MHz retransmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 13:57:09 UTC
From: Martin <marty2kay@earthlink.not>
Message-ID: <VcVac.7307$yN6.5324@newsread2.news.atl.earthlink.net>
Source record: 27295

Maybe a passive antenna would work: the sort of thing that has been used to get cellphone signals in and out of buildings that otherwise are dead areas. In its simplest form, for broadcast FM, it could be just a 56" piece of wire hanging from the center conductor of the coax that you bring in from the outside antenna; no amplifier involved. I've used this scheme to get out of the basement with 1 watt on 2 meters.

Marty K1FHR

"Robert Haston" <rehaston@earthlink.net> wrote in message
news:ZDIac.6062$NL4.1665@newsread3.news.atl.earthlink.net...
> 25 of us work in a metal building and only receive 1 clear station. I
have
> a great outdoor antenna. I could get a cable boost system and run coax to
> everyone's radios, but I would like to instead boost it up to 100 mW or so
> and run it into an indoor antenna.
>
> I have found amps that do this to boost cable signals for splitting, but I
> cannot find one a little more powerful to feed an antenna.
>
> Any ideas?
>
> --
> Robert Haston
> Satellite Beach, FL
>
>

2609. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 15:46:53 UTC
From: tomg@fullnet.com
Message-ID: <11915d6.0404010746.3c18b472@posting.google.com>
Source record: 27296

Uwe <outhouse@midcoast.com> wrote in message news:<BC8D229F.31A8%outhouse@midcoast.com>...
> With the help of some folks here I did troubleshoot my AC-1 tube transmitter
> (using a 6V6) and got it working somehow. Since I passed my code test and
> had my first QSO using the transmitter and boy was that exciting.
>
> But questions remain.
>
> I monitor the output signal on my scope and notice that right after key down
> the waveform contract just a bit and the tone changes pitch. I guess this is
> called chirp. I normally use B+ 200V.
> If I increase the voltage lets say to 300V this effect becomes much more
> pronounced.
> I still use an external bench supply capable of much higher currents and I
> don't think it is a power supply weakness. In fact putting a VOM on the
> supply line shows no sag in my supply voltage.
>
> How can I minimize this and especially keep it from becoming more severe at
> higher outputs.
>
>
> Also, the circuit diagram for the tranmitter did not state the coil diameter
> of the pi network. The pi network still has me scratching my head. Coils
> with slight variations in diameter give dramatically different results.
>
> Also changing the air cap with one of an identical range can have a vast
> effect, which surprised me. Is this the "real world components" versus the
> theory???
>
> Uwe

Congratulations!

I still have my original Ameco AC-1 15-Watt CW transmitter, completely intact with all original parts and accessories, all in perfect like-new condition, and a copy of the whole manual. If you want me to look at or measure anything for you (e.g. the coil you mentioned?), just let me know. I am at tomg AT fullnet.com .

By the way, I think that I paid $14.98 for the Ameco AC-1 kit, new, back in about 1969. I built it, tested it, and then never used it. And I HAVE had people offer me hundreds of dollars for it, "out of the blue", several times over the last few years. There's a picture of it on my webpage (see URL, below).

Good luck!

Regards,

Tom Gootee

http://www.fullnet.com/u/tomg

2610. Curve Tracer: UPDATE

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 15:50:37 UTC
From: tomg@fullnet.com
Message-ID: <11915d6.0404010750.55b4c398@posting.google.com>
Source record: 27197

[Sorry for the "commercial" instrusion, if you're not interested.]

Curve Tracer: UPDATE

My CURVE TRACER webpage has been updated:

For details, cool photos, etc., see:

http://www.fullnet.com/u/tomg/gooteect.htm

With the kit version, I now (again) supply ready-to-use printed circuit boards (PCB's), etched and drilled, and "silk-screened" on the component sides. (And I still offer the lower-cost version of the kit, with the "do-it-yourself" PCBs and *everything* needed to easily make them.)

The Curve Tracer now also includes a complete set of circuit SCHEMATICS (along with the component-layout and wiring diagrams, parts lists, instructions, etc, which were always included).

Also included, now, are diagrams with TEST-POINTS' waveforms, DC voltages, and resistances.

A complete "Operator's and Service Manual" is also being created (which will automatically be supplied to all past purchasers). My goal is to make the manual as good as the older Tektronix ops/service manuals! It will be produced in both bound, paper form and in electronic form.

I now also offer a "fully-assembled and tested" version of the Curve Tracer!

I have been getting some wonderful feedback from Gootee Curve Tracer users. So check it out, at:

http://www.fullnet.com/u/tomg/gooteect.htm

Thanks!

Regards,

Tom Gootee

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2611. Johnson Matchbox...adding T200 inductors?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 15:58:16 UTC
From: denton <denton@oregontrail.net>
Message-ID: <c4hdmbpik1@news.oregontrail.net>
Source record: 27198

Hi all..
I have a couple of T200 cores laying around that I want to wind with No 14 enameled wire.
Can anyone give me a ballpark figure how many turns I will need to wind them to add inductance to the ends of my 275 watt Johnson Matchbox for use on 160 meters?
thanks in advance de Denton WB7TDG

2612. Re: Shielding data lines to RF circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 16:23:37 UTC
From: Rene Tschaggelar <none@none.net>
Message-ID: <406c4230$0$709$5402220f@news.sunrise.ch>
Source record: 27199
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

What attenuator are you using ?
-100dBm is a lot of attenuation.

Rene

Richard Hosking wrote:
> Many thanks for the replies
> That has given me some ideas for a start
>
> Richard
>
>
> Richard Hosking wrote:
>
>> Dear all
>> I want to design a DDS board which has attenuators on the output to
>> provide a low level output (<-100dBm)
>> I have a venerable HP8640B which can give a calibrated output to -137dBm
>> To achieve this HP have gone to extraordinary lengths to shield the
>> oscillator attenuator/output amp circuits and any control lines - I
>> note there are at least two stages of bypassing/low pass filtering
>> with an intermediate shielded section
>>
>> My question is: how do I get data and power lines into my DDS chip (in
>> a shielded enclosure) and prevent RF leakage out which will limit the
>> useful minimum level out from the DDS board?
>> I presume I will have to use a buffer of some sort for the data lines
>> and extensive bypassing on the power lines. I want reasoanbly quick
>> update speeds for my DDS, which is a serial port, which will mean data
>> rates in the MHz region.

2613. Re: Shielding data lines to RF circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 17:59:34 UTC
From: John Woodgate <jmw@jmwa.demon.contraspam.yuk>
Message-ID: <g1$NLQIGiFbAFw0t@jmwa.demon.co.uk>
Source record: 27200
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

I read in sci.electronics.design that Rene Tschaggelar <none@none.net>
wrote (in <406c4230$0$709$5402220f@news.sunrise.ch>) about 'Shielding
data lines to RF circuits', on Thu, 1 Apr 2004:
>What attenuator are you using ?
>-100dBm is a lot of attenuation.
>
No, it's only 1 dB of attenuation from -99 dBm. 100 dB is a lot of
attenuation (or gain).
--
Regards, John Woodgate, OOO - Own Opinions Only.
The good news is that nothing is compulsory.
The bad news is that everything is prohibited.
http://www.jmwa.demon.co.uk Also see http://www.isce.org.uk

2614. Re: NEW PROGRAM - Input Impedance & SWR of resonant antenna.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 18:57:57 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <tbpo605p09q4kfu7vnj5eb6mgv5qbtkfid@4ax.com>
Source record: 27201

On Wed, 31 Mar 2004 23:43:55 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@ZZZbtinternet.com> wrote:

>Program models a 1/4-wave vertical and 1/2-wave dipole antenna to
>demonstrate how input impedance and SWR behave in the vicinity of resonance.
>
>Transmission line Zo can be varied to match the resonant antenna. Frequency
>can then be varied to observe how SWR varies over the band.
>
>Download program R_X_SWR in a few seconds and run immediately.
>
>No increase in price.

Do I detect a change in motivation from the practical to the
instructional, Reg? Have you some unrealised didactic ambitions?

2615. Re: Johnson Matchbox...adding T200 inductors?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 19:09:24 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c4hpd4$o86$1@sparta.btinternet.com>
Source record: 27202

"denton" <denton@oregontrail.net> wrote in message
news:c4hdmbpik1@news.oregontrail.net...
> Hi all..
> I have a couple of T200 cores laying around that I want to wind with No 14
> enameled wire.
> Can anyone give me a ballpark figure how many turns I will need to wind
them
> to add inductance to the ends of my 275 watt Johnson Matchbox for use on
160
> meters?
> thanks in advance de Denton WB7TDG

==========

Fill it up with 18 gauge and tap the turns.
>
>

2616. Re: Message to Tom Bruhns

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 20:26:20 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404011226.13c850ac@posting.google.com>
Source record: 27203

Seems like email ports everywhere are having troubles these days.
It's a sad state of affairs that there is so much spam. I rather like
the idea of being able to charge people (spammers especially, of
course) a nominal fee for me to open their email. That would cut down
on the spam a lot. Anyway, trying another route to get to Fred, and
sorry he had to use a public forum to page me.

Cheers,
Tom

"Fred Bartoli" <fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo> wrote in
message news:<406c1413$0$9114$626a14ce@news.free.fr>...
> Hi Tom,
> I've received your last message and tried to reply to your aol account but
> the message is rejected somewhere.
> Is it still working ?
>
> Can you send me an email from another address so that I can reply you ?
>
> Thanks,
> Fred.

2617. Re: Message to Tom Bruhns

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 20:37:47 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404011237.7a701691@posting.google.com>
Source record: 27204

Seems like email ports everywhere are having troubles these days.
It's a sad state of affairs that there is so much spam. I rather like
the idea of being able to charge people (spammers especially, of
course) a nominal fee for me to open their email. That would cut down
on the spam a lot. Anyway, trying another route to get to Fred, and
sorry he had to use a public forum to page me.

Cheers,
Tom

"Fred Bartoli" <fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo> wrote in
message news:<406c1413$0$9114$626a14ce@news.free.fr>...
> Hi Tom,
> I've received your last message and tried to reply to your aol account but
> the message is rejected somewhere.
> Is it still working ?
>
> Can you send me an email from another address so that I can reply you ?
>
> Thanks,
> Fred.

2618. Re: tube based power supply

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 20:45:26 UTC
From: averyfineman@aol.com
Message-ID: <20040401154526.05305.00000120@mb-m05.aol.com>
Source record: 27205

In article <FsLac.3154$ym1.912@bignews6.bellsouth.net>, Ken Scharf
<wa2mzeNOTTHIS@bellsouth.net> writes:

>Many newer eletrolytic caps have both a 'surge' and a 'working' voltage
>rating. I don't know if this is just a new parameter, or if the newer
>caps were engineered to handle a brief surge of voltage while
>'charging'. In anycase using 150v caps in a circuit supplied by 120v is
> NOT allowing for the peak voltage. I think in a half wave circuit
>there is probably a lower peak since it is reached in double the time
>between peaks. Even so, 180v or even 200v caps should be used. I've
>seen filter caps now being made in a 160v rating for line service, but
>that's still too low for safety (but maybe these units carry a higher
>'surge' voltage rating).

Peak voltage reached is the same whether a rectifier is half-wave
or three-phase full wave. It is dependent on the AC input voltage.

Surge currents are serious concerns in semiconductor diode
rectifier circuits. Not just within the circuit but from the AC line
itself. To get really worried, dual-trace scope the AC input line
with second trace on the diode DC output, sync on the AC line
set to trigger a sweep above the normal AC peak voltage. Watch
during a time when other appliances in the house are working,
like food mixers and bread machines. Might be surprising...

For details of the guts of capacitors, the Cornell-Dubilier website
used to be good. Surge ratings depend on the foil, the electroyte,
size of the lead wires. Lots more different things for tantalums.
There's not much one can do if someone else makes them, just
read the specs and hope for the best.

For hobby work of onsies and twosies, if in doubt use the higher
working voltage ratings. That way there's less time wasted on
analyzing all the busted parts after being too economical.
Hobbyists don't have all the time in the world to shave designs
down to the nubbin to save pennies per unit on a thousand-lot
production run.

Len Anderson
retired (from regular hours) electronic engineer person

2619. Re: Shielding data lines to RF circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 21:41:51 UTC
From: Rene Tschaggelar <none@none.net>
Message-ID: <406c8cc9$0$709$5402220f@news.sunrise.ch>
Source record: 27206
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

John Woodgate wrote:
> I read in sci.electronics.design that Rene Tschaggelar <none@none.net>
> wrote (in <406c4230$0$709$5402220f@news.sunrise.ch>) about 'Shielding
> data lines to RF circuits', on Thu, 1 Apr 2004:
>
>>What attenuator are you using ?
>>-100dBm is a lot of attenuation.
>>
>
> No, it's only 1 dB of attenuation from -99 dBm. 100 dB is a lot of
> attenuation (or gain).

Got me John,
So how to get -99dBm, considering the DDS outputs in the
order of 0dBm.
Are there any decent digital step attenuators around ?
The better switches available at minicircuits have an isolation
of 80dB when off, their analog Attenuator has a range of 55dB.
In 2 stages then ?

Rene

2620. collins 30L1

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-01 21:55:10 UTC
From: Carl Domanico <vze2686b@verizon.net>
Message-ID: <2d0bc.17272$hS3.16794@nwrdny03.gnilink.net>
Source record: 27207

Wanted Collins 30L-1 Round Emblem Amplifer...Mint to Excellent
Condition........

Reasonably Priced
Carl
N2MFW

2621. Link to tutorial on diplexer design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-02 04:36:11 UTC
From: Rick Karlquist N6RK <richard@karlquist.removethis.com>
Message-ID: <%46bc.54114$gA5.705374@attbi_s03>
Source record: 27208

Here is a link to a tutorial on diplexer design I just posted:

http://www.n6rk.com/diplexer/diplexer.pdf

Rick N6RK

2622. Re: Shielding data lines to RF circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-02 06:43:48 UTC
From: John Woodgate <jmw@jmwa.demon.contraspam.yuk>
Message-ID: <DCH1GuCkuQbAFwiI@jmwa.demon.co.uk>
Source record: 27209
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

I read in sci.electronics.design that Rene Tschaggelar <none@none.net>
wrote (in <406c8cc9$0$709$5402220f@news.sunrise.ch>) about 'Shielding
data lines to RF circuits', on Thu, 1 Apr 2004:
>John Woodgate wrote:
>> I read in sci.electronics.design that Rene Tschaggelar <none@none.net>
>> wrote (in <406c4230$0$709$5402220f@news.sunrise.ch>) about 'Shielding
>> data lines to RF circuits', on Thu, 1 Apr 2004:
>>
>>>What attenuator are you using ?
>>>-100dBm is a lot of attenuation.
>>>
>>
>> No, it's only 1 dB of attenuation from -99 dBm. 100 dB is a lot of
>> attenuation (or gain).
>
>Got me John,
>So how to get -99dBm, considering the DDS outputs in the
>order of 0dBm.
>Are there any decent digital step attenuators around ?
>The better switches available at minicircuits have an isolation
>of 80dB when off, their analog Attenuator has a range of 55dB.
>In 2 stages then ?
>
Yes, it's often the simplest solution.
--
Regards, John Woodgate, OOO - Own Opinions Only.
The good news is that nothing is compulsory.
The bad news is that everything is prohibited.
http://www.jmwa.demon.co.uk Also see http://www.isce.org.uk

2623. Re: Link to tutorial on diplexer design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-02 07:09:15 UTC
From: PaoloC <ollollo@hotpop.com>
Message-ID: <c4j3ip$2jmhad$1@ID-199778.news.uni-berlin.de>
Source record: 27210

Rick Karlquist N6RK wrote:

> Here is a link to a tutorial on diplexer design I just posted:
>
> http://www.n6rk.com/diplexer/diplexer.pdf

That's a good and quick one! Thanks! Those interested in the subject might have a look at http://www.qrp.pops.net/dip2.htm as well.

Now checking other articles on your website :-)

Paolo IK1ZYW

2624. Re: Shielding data lines to RF circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-02 10:23:04 UTC
From: Richard Hosking <richardh@iinet.net.au>
Message-ID: <406d3ffe$0$16601$5a62ac22@freenews.iinet.net.au>
Source record: 27211
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

I thought I would use switched sections with various sections switched
by relays - each section shielded if necessary.
The DDS will give an output down to -50dBm or so under software control,
though spurious outputs are not necessarily attenuated by the same
amount, so it is probably not a good idea to use the full attenuation range
My board will be double sided unless I *need* to use a more expensive board

Richard

Rene Tschaggelar wrote:
> What attenuator are you using ?
> -100dBm is a lot of attenuation.
>
> Rene
>
> Richard Hosking wrote:
>
>> Many thanks for the replies
>> That has given me some ideas for a start
>>
>> Richard
>>
>>
>> Richard Hosking wrote:
>>
>>> Dear all
>>> I want to design a DDS board which has attenuators on the output to
>>> provide a low level output (<-100dBm)
>>> I have a venerable HP8640B which can give a calibrated output to -137dBm
>>> To achieve this HP have gone to extraordinary lengths to shield the
>>> oscillator attenuator/output amp circuits and any control lines - I
>>> note there are at least two stages of bypassing/low pass filtering
>>> with an intermediate shielded section
>>>
>>> My question is: how do I get data and power lines into my DDS chip
>>> (in a shielded enclosure) and prevent RF leakage out which will limit
>>> the useful minimum level out from the DDS board?
>>> I presume I will have to use a buffer of some sort for the data lines
>>> and extensive bypassing on the power lines. I want reasoanbly quick
>>> update speeds for my DDS, which is a serial port, which will mean
>>> data rates in the MHz region.

2625. Re: HBR-16

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-02 15:14:51 UTC
From: N2EY@AOL.COM
Message-ID: <c2356669.0404020714.6639658f@posting.google.com>
Source record: 27212

Ken Scharf <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:<y0Lac.462$xW1.128@bignews4.bellsouth.net>...
> > The big question with DDS is the spectral purity of the output. Even
> > weak artifacts can cause all kinds of birdies and other troubles in
> > today's RF environment. This is one reason so many folks find the old
> > designs so appealing - they are "clean" except for the obvious things
> > like images.
> >
> The big problem with DDS is getting a good anti-aliasing filter on the
> output to satisfy Mr. Nyquist. Trying to build a good 'brick wall' low
> pass filter is insane. Running the DDS with a clock many times greater
> than the highest output frequency helps, with an injection frequency of
> 39mhz on 10 meters with a 9mhz if a 400mhz DDS clock is 5x the Nyquist
> requirement.

I agree 100%.

> Rather than using a low pass filter, I'd use switchable
> bandpass filters, much more rejection of unwanted spurs and a cleaner
> output. Not as simple to build, you have to switch filters to change
> bands, but hey, I can always GANG several tv tuner chassis for my
> band switch! (I knew those old TV sets I caniblized would come in handy!)

A good scrounger approach if you can find tuners with good contacts!

Here's another approach, shamelessly copied from Elecraft: Bandswitch
the low-level circuits with small latching relays and some logic
circuitry (a PIC or TTL can easily do the job). These relays are
available from Digi-Key - Omron is one mfr. - and are not too
expensive in quantity.

> >
> >>Thought I'd use
> >>three IF stages with a filter between EACH stage and a final one before
> >>the detector.
> >
> >
> > Very good idea. The best filter goes first, then "cleanup" filters.
> >
> Actually those filters are identical. But another idea is a double
> conversion with both 9mhz and 455khz if's. Then by tuning the second
> conversion oscillator you can 'overlap' the bandpass of both sets of
> filters to use only a portion of them, and if you also move the bfo
> frequency you can move the position of the signal within the resulting
> bandpass.

Good ideas but getting less and less simple.
> >
> >>The above radio would probably end up being a transceiver (cause the
> >>extra circuity isn't much) but the finals would end up being 1 or 2 1625
> >>bottles 'cause I have at least a dozen of 'em in the junk box.

> > Great bottles but the sockets are a pain. Unless you hack up an ARC-5
> > tx.
> My junk box has a few 1625 size sockets, two ceramic 'plate' types and a
> large saddle mount. Actually these sockets are easy to find and not too
> expensive. Antique Electronic Supply has them, and they show up on Ebay
> often. No need to use ones out of ARC5 xmtrs.

Agreed. The ARC-5 ones are good for submounting, though.
>
> I also have a good number of 6AG7 tubes, they would make a good driver
> stage for the 1625s. (BTW 6AG7 is sorta an octal version of the 6CL6).

Oh yes, used them in several rigs.

> If I used a single 1625 in the final, it would be good for about 25
> watts output without straining. Then if I needed more power, I'd build
> a linear amp using a 2 or 3 811A's (that's 340-410 Watts PEP output).

But will 25 watts drive a two- or three-hole 811A amp in grounded
grid? All of the data I've seen says you need about 15 watts per 811A
in GG. Grid Driven requires a lot less (about 5W) but then you need a
grid tank, etc.

> Not a full gallon, but the extra few db ain't worth the cost! I have
> some 813's in the junkbox, but the sockets for them are costly, and they
> have such HIGH output capacitance that making a good tank circuit in a
> single ended amp is rather a pain. Still a grounded grid tetrode
> circuit looks interresting! (cathode driven with normal g1 and g2 voltages).

I always thought the big advantage of GG was elimination of the need
for screen and bias supplies.
>
> > The biggest headache I've encountered in transceiver design is finding
> > a heterodyne combination that works in both directions and uses
> > available components. All of the classic ones are compromises in one
> > way or another, either on rx or tx.

> If you have enough filters you can put separate filters in the tx and rx
> chains, and even use double conversion on the rx but single conversion
> on tx.

Sure, but by that time you're actually building a separate transmitter
and receiver that share a VFO and not much else.

> Then you can use a separate tunable bfo for the receiver. The
> bandwidth and center frequency of the tx filter can be selected for good
> audio, while the rx filter(s) for selectivity. Tx bandwidth is a
> function of audio channel filtering, alc, and NOT overdriving anything.

Agreed!

But since I'm primarily a CW op, the problem is greatly simplified in some ways. My current homebrew transceiver uses a different het scheme for tx and rx, sharing a common VFO. Both paths are single conversion. Requires that the het xtals be dead-on freq (handled by trimmers across each xtal).

73 es GL de Jim, N2EY

2626. Re: Link to tutorial on diplexer design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-02 16:29:00 UTC
From: Rick Karlquist N6RK <richard@karlquist.removethis.com>
Message-ID: <fxgbc.162389$Cb.1651809@attbi_s51>
Source record: 27213

Thanks for the link. I'll probably add it to
my site to complement my article.

"PaoloC" <ollollo@hotpop.com> wrote in message
news:c4j3ip$2jmhad$1@ID-199778.news.uni-berlin.de...
> Rick Karlquist N6RK wrote:
>
> > Here is a link to a tutorial on diplexer design I just posted:
> >
> > http://www.n6rk.com/diplexer/diplexer.pdf
>
> That's a good and quick one! Thanks! Those interested in the subject
> might have a look at http://www.qrp.pops.net/dip2.htm as well.
>
> Now checking other articles on your website :-)
>
> Paolo IK1ZYW
>

2627. Re: Johnson Matchbox...adding T200 inductors?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-02 17:01:46 UTC
From: Eskay <spark_gap2000@yahoo.ca>
Message-ID: <1h5i7mby73hve.kjqo49job9fm.dlg@40tude.net>
Source record: 27214

On Thu, 1 Apr 2004 07:58:16 -0800, denton wrote:

> Hi all..
> I have a couple of T200 cores laying around that I want to wind with No 14
> enameled wire.
> Can anyone give me a ballpark figure how many turns I will need to wind them
> to add inductance to the ends of my 275 watt Johnson Matchbox for use on 160
> meters?
> thanks in advance de Denton WB7TDG

There was an article in Electric Radio magazine that added fixed capacitors
to the lowest frquency setting to get the Matchbox to tune 160 meters.I
don't have the magazine but do have the scanned pages.
Let me know if you want them.
73 de Sieb,,VE3JUA.

2628. Federal Tel & Radio 7C23 vacuum tube

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-02 20:15:39 UTC
From: "Mark D." <markREMOVEME22@mindspring.com>
Message-ID: <78ir609gcm4nkstq9m6m90i1fv6bdd25uo@4ax.com>
Source record: 27215

I came across a very large 7C23 vacuum tube and know nothing about it. Could anyone let me know what the specs are on this thing? It's got a wiring connections guide printed on the side of the heat sink but it's rubbed off over the years and I can't read it. Does anyone know how to wire this thing? Any other help you could give on it is appreciated.

Thanks,
-Mark Dickinson

2629. Re: Shielding data lines to RF circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-02 20:22:00 UTC
From: Rene Tschaggelar <none@none.net>
Message-ID: <406dcb8a$0$718$5402220f@news.sunrise.ch>
Source record: 27216
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

I'm on a similar project and had a look at these issues.
Depending on the frequency and the relay, the isolation of an
off contact can be as low as 25dB. I assume you'd plan on changers
(SPDT) with the idle on 50 Ohms. The relay attenuator sure uses
a lot of board state.
The minicircuits variable attenuator unfortunately doesn't go to DC,
and while spec'ed to 10MHz, I didn't measure the lower border myself
yet. The minicircuits step attenuator have no steps greater than 20dB
and are rather pricey. They also have a lower border of 10MHz.

I'm also not yet sure how to get rid of the digital noise, especially
when using high update rates. I'm considering an FPGA to have the
lowest possible digital clock frequency for the amount of operations.

Rene

Richard Hosking wrote:
> I thought I would use switched sections with various sections switched
> by relays - each section shielded if necessary.
> The DDS will give an output down to -50dBm or so under software control,
> though spurious outputs are not necessarily attenuated by the same
> amount, so it is probably not a good idea to use the full attenuation range
> My board will be double sided unless I *need* to use a more expensive board
>
> Richard
>
> Rene Tschaggelar wrote:
>
>> What attenuator are you using ?
>> -100dBm is a lot of attenuation.
>>
>> Rene
>>
>> Richard Hosking wrote:
>>
>>> Many thanks for the replies
>>> That has given me some ideas for a start
>>>
>>> Richard
>>>
>>>
>>> Richard Hosking wrote:
>>>
>>>> Dear all

>>>> I want to design a DDS board which has attenuators on the output to
>>>> provide a low level output (<-100dBm)
>>>> I have a venerable HP8640B which can give a calibrated output to
>>>> -137dBm
>>>> To achieve this HP have gone to extraordinary lengths to shield the
>>>> oscillator attenuator/output amp circuits and any control lines - I
>>>> note there are at least two stages of bypassing/low pass filtering
>>>> with an intermediate shielded section
>>>>
>>>> My question is: how do I get data and power lines into my DDS chip
>>>> (in a shielded enclosure) and prevent RF leakage out which will
>>>> limit the useful minimum level out from the DDS board?
>>>> I presume I will have to use a buffer of some sort for the data
>>>> lines and extensive bypassing on the power lines. I want reasoanbly
>>>> quick update speeds for my DDS, which is a serial port, which will
>>>> mean data rates in the MHz region.

2630. Re: Federal Tel & Radio 7C23 vacuum tube

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-02 21:26:36 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <gUkbc.22790$He5.436190@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27217

"Mark D." <markREMOVEME22@mindspring.com> wrote in message
news:78ir609gcm4nkstq9m6m90i1fv6bdd25uo@4ax.com...
> I came across a very large 7C23 vacuum tube and know nothing about it.
> Could anyone let me know what the specs are on this thing? It's got a
> wiring connections guide printed on the side of the heat sink but it's
> rubbed off over the years and I can't read it. Does anyone know how to
> wire this thing? Any other help you could give on it is appreciated.

This company is selling them for a paltry $425.00 used.

http://www.tubesontheweb.com/TU06.HTM

It is also known as a type 5680. For the $425.00 you will get when you find
a buyer, you can buy an old ARRL Handbook and look up the specs.

Meanwhile, scroll down to the bottom of

http://wordindex.sourceforge.net/testdata/usenet.col-20000829-1152/094-135.col

where it says "A pulse triode used in radar modulators and similar
applications. Used to switch a very high voltage (20-30 kV) and moderate
currents (tens of amps)at a low duty cycle. Used to drive a magnetron.

"These kind of tubes are often poor performers as modern ham amp tubes, as
they are usually quite non-linear. They might be better suited to class
Camplifiers. I have heard that this type of tube is very good for a tesla
coil driver, if you are into that sorta stuff."

Google is your friend.

"PM"

2631. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-02 22:04:11 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BC934D8E.3680%outhouse@midcoast.com>
Source record: 27218

Only now do I have a chance to react to some of the suggestions...

I guess one poster here is right, I will just have to fiddle a bit more with the pi network (since at the B+ voltages suggested here my plate current would be way high) and I will have to live with the chirp. Nobody has complained yet anyways and maybe the chirp is worse in my receiver than on the air, as someone here suggested. By the way I use a Icom R75 for a receiver and switch the antenna off during transmit-still plenty of a signal seems to get into the receiver anyways.

By the way, I see suggestions how to just "stretch" crystal controlled oscillators a bit by adding a suitable coil and capacitor in series with the crystal. Has anybody tried that with the AC-1??
Would be nice to be able to get out of the ways of some of the big power guys.
Any suggestion would be welcome.

Uwe

2632. Transistorized "cascode" RF amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-02 23:03:42 UTC
From: k3bu@aol.comNoUsama
Message-ID: <20040402180342.03472.00000584@mb-m01.aol.com>
Source record: 27219

Back from good old tube days, cascoded triode RF preamps were good for high gain, stability and low noise.

Anything out there in transistorised version, or there is there better stuff available? Looking mainly for preamps on HF to be used with low gain antennas, like small loops or beverages.

Yuri, K3BU.us

2633. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 00:37:54 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <CHnbc.23648$He5.450962@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27220

"Uwe" <outhouse@midcoast.com> wrote in message
news:BC934D8E.3680%outhouse@midcoast.com...

> By the way, I see suggestions how to just "stretch" crystal controlled
> oscillators a bit by adding a suitable coil and capacitor in series with
the
> crystal. Has anybody tried that with the AC-1??
> Would be nice to be able to get out of the ways of some of the big power
> guys.
> Any suggestion would be welcome.

An rf choke or variable inductor of between 7 and 20 uH in series with a variable cap of about 200 pF in series with a crystal, will pull the frequency. It's called a variable crystal oscillator or VXO. You're probably using FT-243 crystals, though, and they don't pull very far.

I have to say this again: Time to put this thing on the shelf. For the time and trouble you are putting into it you could build a solid-state rig that would put out as much power, have a VFO and not contain life-threatening voltages.

73,

"PM"

2634. Re: Transistorized "cascode" RF amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 00:46:59 UTC
From: xpyttl <xpyttl_NOSPAM@earthling.net>
Message-ID: <106s2f0ajnl0b1d@corp.supernews.com>
Source record: 27222

Jim Kortge, K8IQY, uses a cascode amp in his famous 2N2/40. He actually uses it in the transmitter ... even with a passive mixer you don't need a lot of gain on 40!

See http://www.qsl.net/k8iqy

..

"Yuri Blanarovich" <k3bu@aol.comNoUsama> wrote in message news:20040402180342.03472.00000584@mb-m01.aol.com...
> Back from good old tube days, cascoded triode RF preamps were good for high
> gain, stability and low noise.
>
> Anything out there in transistorised version, or there is there better stuff
> available? Looking mainly for preamps on HF to be used with low gain antennas,
> like small loops or beverages.
>
> Yuri, K3BU.us

2635. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 00:48:56 UTC
From: Uncle Peter <radioconnectionNO@cox.netSPAM>
Message-ID: <vQnbc.9210$pM1.6556@lakeread06>
Source record: 27221

"Paul_Morphy" <nopaul_morphy2@coolgoose.com> wrote in message
news:CHnbc.23648$He5.450962@bgtnsc04-news.ops.worldnet.att.net...
>
> ">
> I have to say this again: Time to put this thing on the shelf. For the
time
> and trouble you are putting into it you could build a solid-state rig that
> would put out as much power, have a VFO and not contain life-threatening
> voltages.
>
> 73,
>
> "PM"
>
I suggest he put all his radios on a shelf, and get a cell phone. No
dangerous
RF levels, no deadly voltages...

NOT

2636. Re: Transistorized "cascode" RF amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 02:04:08 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <Aq2dnWWq-8dnkPPdRVn-tw@ctc.net>
Source record: 27223

"Yuri Blanarovich" <k3bu@aol.comNoUsama> wrote in message
news:20040402180342.03472.00000584@mb-m01.aol.com...
> Back from good old tube days, cascoded triode RF preamps were good for
high
> gain, stability and low noise.
>
> Anything out there in transistorised version, or there is there better
stuff
> available? Looking mainly for preamps on HF to be used with low gain
antennas,
> like small loops or beverages.
>
> Yuri, K3BU.us

Back in the 'good old tube days' it was difficult to get below a NF of 3 db on 2 meters. Now it is easy to get way below that with a good FET. For HF almost any RF device now will take you very low in NF with good gain.

There are versions of the cascode that use FETs for HF and above.

2637. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 02:47:18 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <WApbc.14393$vo5.439031@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27224

" Uncle Peter" <radioconnectionNO@cox.netSPAM> wrote in message
news:vQnbc.9210$pM1.6556@lakeread06...

> I suggest he put all his radios on a shelf, and get a cell phone. No
> dangerous
> RF levels, no deadly voltages...
>
> NOT

Gee, Unc, have a tough week? :> I don't want him to give up radio, I just
don't think an Ameco AC-1 is worth the trouble. I didn't want one when I was
15 and they were new, and I wouldn't waste my time fiddling with one now.

73,

"PM"

2638. Re: Transistorized "cascode" RF amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 04:08:04 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c4ldb4anr1@freenet9.carleton.ca>
Source record: 27225

Yuri Blanarovich (k3bu@aol.comNoUsama) writes:
> Back from good old tube days, cascoded triode RF preamps were good for high
> gain, stability and low noise.
>
> Anything out there in transistorised version, or there is there better stuff
> available? Looking mainly for preamps on HF to be used with low gain antennas,
> like small loops or beverages.
>
> Yuri, K3BU.us

You definitely saw them in the early days. The one that comes immediately to mind was a cheap preamp described in Ham Radio in the early seventies, and was available as a cheap kit from Hamtronics.

I think there were some shown with bipolars, but I can't dredge up any specific memories at the moment.

It was obviously a transitional thing, since you're right, one doesn't see solid state cascodes very often. I have no idea if they were used decades ago because it worked around limitations of early solid state devices, or if it just seemed to be the thing to do since they had been common in tube circuits.

The author of that Ham Radio article (actually, there were two, and he used cascode FET amplifiers in various projects described later), I think his name was Jerry Voigt, had grumlbed about the then relatively new dual-gate MOSFETs, but in a followup letter he admitted than a dual-gate MOSFET was basically a cascode device.

If there was an advantage to be using cascode circuits today, then you'd be seeing them.

A lot has changed. Bipolars came in, and they couldn't handle strong signals well. The JFET came along, and it was seen as the device to use for best performance. The MOSFET came along, and again there was a switch. Sort of simultaneously with MOSFETs, but not really adopted till later, bipolars started being capable of low noise and strong signal handling. MOSFETs are now rare for receiving applications. Gasfets came along and they seem to be be the thing for low noise RF amplification.

Michael VE2BVW

2639. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 04:41:24 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BC93AAA2.3744%outhouse@midcoast.com>
Source record: 27226

in article CHnbc.23648$He5.450962@bgtnsc04-news.ops.worldnet.att.net,
Paul_Morphy at nopaul_morphy2@coolgoose.com wrote on 4/2/04 19:37:

>
> "Uwe" <outhouse@midcoast.com> wrote in message
> news:BC934D8E.3680%outhouse@midcoast.com...
>
>> By the way, I see suggestions how to just "stretch" crystal controlled
>> oscillators a bit by adding a suitable coil and capacitor in series with
> the
>> crystal. Has anybody tried that with the AC-1??
>> Would be nice to be able to get out of the ways of some of the big power
>> guys.
>> Any suggestion would be welcome.
>
> An rf choke or variable inductor of between 7 and 20 uH in series with a
> variable cap of about 200 pF in series with a crystal, will pull the
> frequency. It's called a variable crystal oscillator or VXO. You're probably
> using FT-243 crystals, though, and they don't pull very far.
>
> I have to say this again: Time to put this thing on the shelf. For the time
> and trouble you are putting into it you could build a solid-state rig that
> would put out as much power, have a VFO and not contain life-threatening
> voltages.
>
> 73,
>
> "PM"
>
>

Thank you Paul, since I have a crystal socket on the front of the little box
it ought to relatively simple to try out this scheme and see if I can't get
a "range" out of this one frequency device.
And yes you are right, I have a few FT 243 but others are on order.

It is my experience that whatever I do around the crystal it stops it from
oscillating but I will try your suggestion nevertheless.

As to high voltages I grew up in Europe where I got used to (and sometimes
shocked by) 220V and now I can't let go ...

Paul, your concern for a new ham is very much appreciated, but ever since I
wanted to be a ham I wanted to know code and I wanted to build my own gear,
preferably tube gear.
It gets cold in Maine and these at least warm your hands in between QSO's.

I will probably never own an SSB or a phone radio and as somebody mentioned here, for communication we have other solutions. For me being a new ham opens a world of learning and tinkering possibilities with the side effect of being able to communicate with others via code.

And I think I can learn a whole lot by working on this transmitter. And I will need all the learning I can get because someone mentioned a different, slightly more sophisticated tube transmitter using two 807's in the final. I would love to build that and appreciate more info on the device.

And Paul, lest you get the impression I hate silicon, I just finished a Rockmite-very cute.

Thanks again and keep the advice and help coming.

Greetings from Maine

Uwe

2640. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 11:20:46 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <i6xbc.26447$He5.498276@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27227

"Uwe" <outhouse@midcoast.com> wrote in message
news:BC93AAA2.3744%outhouse@midcoast.com...

> And Paul, lest you get the impression I hate silicon, I just finished a
> Rockmite-very cute.

There may be hope for you after all, Uwe. :> I went through a
boatanchors-revisited phase about 10 years ago, when I finally got to own
two Drake 2Bs, an Eico 720 with Hallicrafters HA-5 VFO and a Ranger II
(thanks to the Hosstraders flea market in New Hampshire, which you shouldn't
miss), my dream stations when I was 15. I never cared a lot for the voice
modes, either; CW is my mode of choice. After lugging those relatively small
boatanchors around a little, though, I decided to get back to the present.
For inspiration along the silicon lines (and to see some really nice photos
of mountains in the Pacific NW) I recommend Wes Hayward's (W7ZOI) site:
http://users.easystreet.com/w7zoi/w7zoi-page.html

73,

"PM"

2641. Re: HBR-16

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 15:30:00 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <6mAbc.4315$ts4.3521@bignews3.bellsouth.net>
Source record: 27228

>>If I used a single 1625 in the final, it would be good for about 25
>>watts output without straining. Then if I needed more power, I'd build
>>a linear amp using a 2 or 3 811A's (that's 340-410 Watts PEP output).
>
>
> But will 25 watts drive a two- or three-hole 811A amp in grounded
> grid? All of the data I've seen says you need about 15 watts per 811A
> in GG. Grid Driven requires a lot less (about 5W) but then you need a
> grid tank, etc.
>
The 15 watt figure is close, I think the offical handbook rating was 12
watts per tube in GG. The higher figure was with an UNTUNED input
without any impedance matching network (just the way most 811 gg amps
were built, since the average exciter provided about 100 watts output
who cared?).

TWO 811A's should easily be driven by a 25w out exciter with a good
matching network between the amp and the exciter, it might be pushing it
to drive three (But you can get 35w pep out of a single 1625, or use two
of them in the final for 50w output in AB1).

BTW the 1625 used to be the last cheap final left. Fair Radio had new
ones for $4.50 up till last year. Now they only have used ones left for
$3.00. Everyone has discovered that 6159's are really 25v heater 6146's
and the price has jumped from a few bucks to the $18 range. The US made
811A's are drying up (and you have to be carefull of those Chinese
tubes, some are OK, others don't last long). I remember back in the
60's when BA was selling NOS surplus 1625's for $0.25 each! (Should
have bought several gross and put them in storage, but not on a
teenagers budget).

>
>>Not a full gallon, but the extra few db ain't worth the cost! I have
>>some 813's in the junkbox, but the sockets for them are costly, and they
>>have such HIGH output capacitance that making a good tank circuit in a
>>single ended amp is rather a pain. Still a grounded grid tetrode
>>circuit looks interresting! (cathode driven with normal g1 and g2 voltages).
>
>
> I always thought the big advantage of GG was elimination of the need
> for screen and bias supplies.
> >
>
The 813 isn't such a great tube in pure GG. Most of the spec's I've
seen show it as only 200 watts or so output in GG. Problem is the tube

just doesn't have much power gain in GG. If you bias it as a tetrode the power gain goes way up, you can still run it 'cathode driven' to avoid neutralization though.

2642. Re: Transistorized "cascode" RF amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 15:39:46 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <1xAbc.19694$xW1.18399@bignews4.bellsouth.net>
Source record: 27229

xpyttl wrote:
> Jim Kortge, K8IQY, uses a cascode amp in his famous 2N2/40. He actually
> uses it in the transmitter ... even with a passive mixer you don't need a
> lot of gain on 40!
>
> See http://www.qsl.net/k8iqy
>
> ..
There are two ways of looking at cascade, the devices are in series for
dc and ac, or only ac. The above link shows the latter. I had an idea
for a hybrid cascade amp of the first kind. The input would be a jfet
which sorta becomes the emitter resistor for a bipolar transistor as the
second stage of the cascade amp. The bipolar is run in grounded base
(for ac, normal bias network and base bypassed to ground with a cap).
Would give the advantages of high input impedance of the fet and high
gain from the bipolar.

2643. Sell and Buy your Tube Gear!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 16:11:49 UTC
From: Jeff James <cbstv@optonline.net>
Message-ID: <9nBbc.5873$dp2.1984601@news4.srv.hcvlny.cv.net>
Source record: 27230

```
The Boatanchor Classifieds
http://www.dealamerica.com/deal/cgi-bin/ads/bcads.cgi
Truly dedicated to vintage amateur radio!
```

2644. Re: Transistorized "cascode" RF amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 16:14:11 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c4mnsj$i6b$1@freenet9.carleton.ca>
Source record: 27231

Ken Scharf (wa2mzeNOTTHIS@bellsouth.net) writes:
> xpyttl wrote:
>> Jim Kortge, K8IQY, uses a cascode amp in his famous 2N2/40. He actually
>> uses it in the transmitter ... even with a passive mixer you don't need a
>> lot of gain on 40!
>>
>> See http://www.qsl.net/k8iqy
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>> ..
> There are two ways of looking at cascade, the devices are in series for
> dc and ac, or only ac. The above link shows the latter. I had an idea
> for a hybrid cascade amp of the first kind. The input would be a jfet
> which sorta becomes the emitter resistor for a bipolar transistor as the
> second stage of the cascade amp. The bipolar is run in grounded base
> (for ac, normal bias network and base bypassed to ground with a cap).
> Would give the advantages of high input impedance of the fet and high
> gain from the bipolar.

It's been done. There was an article in Ham Radio magazine in 1970 or
1971 about a six meter converter. Just as you described, a common source
JFET with a bipolar transistor as the upper element. Used a Vackar oscillator
to make it tuneable. It might be this one:
Six-meter converter, improved K1BQT 50 Aug 70
The date is about when I remember it, though I don't remember K1BQT being
the author.

Michael VE2BVW

2645. Re: Transistorized "cascode" RF amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 17:02:10 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <YFBbc.9552$LO2.3068@bignews1.bellsouth.net>
Source record: 27232

Michael Black wrote:
> Ken Scharf (wa2mzeNOTTHIS@bellsouth.net) writes:
>
>>xpyttl wrote:
>>
>>>Jim Kortge, K8IQY, uses a cascode amp in his famous 2N2/40. He actually
>>>uses it in the transmitter ... even with a passive mixer you don't need a
>>>lot of gain on 40!
>>>
>>>See http://www.qsl.net/k8iqy
>>>
>>>..
>>
>>There are two ways of looking at cascade, the devices are in series for
>>dc and ac, or only ac. The above link shows the latter. I had an idea
>>for a hybrid cascade amp of the first kind. The input would be a jfet
>>which sorta becomes the emitter resistor for a bipolar transistor as the
>>second stage of the cascade amp. The bipolar is run in grounded base
>>(for ac, normal bias network and base bypassed to ground with a cap).
>>Would give the advantages of high input impedance of the fet and high
>>gain from the bipolar.
>
>
> It's been done. There was an article in Ham Radio magazine in 1970 or
> 1971 about a six meter converter. Just as you described, a common source
> JFET with a bipolar transistor as the upper element. Used a Vackar oscillator
> to make it tuneable. It might be this one:
> Six-meter converter, improved K1BQT 50 Aug 70
> The date is about when I remember it, though I don't remember K1BQT being
> the author.
>
> Michael VE2BVW
>
Nothing new under the sun!
Guess I need to get the HamRadio collection on CRrom.

2646. Re: Transistorized "cascode" RF amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 17:51:03 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404030951.421bb363@posting.google.com>
Source record: 27233

Sure, there are _op-amps_ that have cascode input stages. There are
bootstrapped cascode input stages used in feedback amplifiers that
have extremely low input capacitance and very low distortion when
driven from high source impedances. One of the FM tuner manufacturers
long ago used a cascode input stage. With transistor amps, you can
run the input transistor at low voltage and therefore low dissipation,
and have the output transistor capable of large swings, and thus get
good dynamic range. I don't know that there's any particular noise
advantage, per se. But it does let you pick the best transistor for
each part. Another variation with transistors is a "folded cascode"
where the input transistor is one polarity (e.g. NPN) and the output
one is the opposite polarity (PNP).

Cheers,
Tom

k3bu@aol.comNoUsama (Yuri Blanarovich) wrote in message
news:<20040402180342.03472.00000584@mb-m01.aol.com>...
> Back from good old tube days, cascoded triode RF preamps were good for high
> gain, stability and low noise.
>
> Anything out there in transistorised version, or there is there better stuff
> available? Looking mainly for preamps on HF to be used with low gain antennas,
> like small loops or beverages.
>
> Yuri, K3BU.us

2647. Magnet wire vs. enamelled copper wire

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 17:58:13 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <1out60hs17d1pf69klh1nck04bgjd62dir@4ax.com>
Source record: 27234

wonder what is the difference between enam. cu wire and magnet wire

73
LA8AK

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

2648. 4CX5000

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 18:48:23 UTC
From: ploetsio@hotmail.com
Message-ID: <4ee37d0e.0404031048.1a54c323@posting.google.com>
Source record: 27235

Hallo again.

This is specialy for Eddy and Dave

I just finish the building and testing of my 4CX5000 final.
Buy the way....I build the Broadcast Electronics version.
Today i tested the amp with an driving power of 150 Watts and the
output power was 8000 Watts. It ran it on 7000 volts and it consume
about 1.8 amp.
I alsow find out that the tube is not a 4CX5000A but a 4CX5000J/8909.
I measure the filament current so thats wy the 10.000 watts is not in
reach.
The difference between these tube's is the maximum frequency range.
The 5000A runs till 220 mhz and it's brother...the5000J runs till 100
mhz.
But still i feel pretty good about this project.
If You wanna see a picture of this final amp just mail me and i will
send You one.
Thanks for supporting me.

Greetings from Holland.....Onno

2649. Re: HBR-16

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 18:59:25 UTC
From: n2ey@aol.comSPAMNO
Message-ID: <20040403135925.05305.00000152@mb-m05.aol.com>
Source record: 27236

In article <6mAbc.4315$ts4.3521@bignews3.bellsouth.net>, Ken Scharf
<wa2mzeNOTTHIS@bellsouth.net> writes:

>>>If I used a single 1625 in the final, it would be good for about 25
>>>watts output without straining. Then if I needed more power, I'd build
>>>a linear amp using a 2 or 3 811A's (that's 340-410 Watts PEP output).

>> But will 25 watts drive a two- or three-hole 811A amp in grounded
>> grid? All of the data I've seen says you need about 15 watts per 811A
>> in GG. Grid Driven requires a lot less (about 5W) but then you need a
>> grid tank, etc.
>>
>The 15 watt figure is close, I think the offical handbook rating was 12
>watts per tube in GG. The higher figure was with an UNTUNED input
>without any impedance matching network (just the way most 811 gg amps
>were built, since the average exciter provided about 100 watts output
>who cared?).

Agreed 100%. Note, however, that the driving power figures in the books are
usually theoretical, derived from tube characteristics. Usually, there's no
provision made for losses in matching circuits, etc.
>
>TWO 811A's should easily be driven by a 25w out exciter with a good
>matching network between the amp and the exciter, it might be pushing it
>to drive three (But you can get 35w pep out of a single 1625, or use two
>of them in the final for 50w output in AB1).

Again, note that those output figures don't include circuit losses.

But in general I think you'd be OK with a single 1625 driving up to a pair if
811s if the matching circuits are lowloss.
>
>BTW the 1625 used to be the last cheap final left. Fair Radio had new
>ones for $4.50 up till last year. Now they only have used ones left for
>$3.00.

I've got a bunch of used and a bunch of new. Also a big pile of 807s, which
have been my homebrew final of choice for quite some time now.

Here's a hint: Look at the 6BG6-G sweep tube. They are still very common (the
GA's are liked by some audiophiles but the Gs aren't) and their ratings are
very similar to the 807/1625. Looking at their construction, one wonders if the
6BG6-G isn't just an 807 with an octal base.

>Everyone has discovered that 6159's are really 25v heater 6146's
>and the price has jumped from a few bucks to the $18 range. The US made
>811A's are drying up (and you have to be carefull of those Chinese

>tubes, some are OK, others don't last long).

Yup.

What about the Russian 811s?

>I remember back in the
>60's when BA was selling NOS surplus 1625's for $0.25 each! (Should
>have bought several gross and put them in storage, but not on a
>teenagers budget).
>
Same here. The lowest I ever saw them was 19 cents in quantity (I think the quantity was 100). And of course there was a pair of them in every ARC-5 tx, which could be had for a few dollars from Fair Radio.
>>
>>>Not a full gallon, but the extra few db ain't worth the cost! I have
>>>some 813's in the junkbox, but the sockets for them are costly, and they
>>>have such HIGH output capacitance that making a good tank circuit in a
>>>single ended amp is rather a pain. Still a grounded grid tetrode
>>>circuit looks interresting! (cathode driven with normal g1 and g2
>>voltages).
>>
>> I always thought the big advantage of GG was elimination of the need
>> for screen and bias supplies.
>>
>The 813 isn't such a great tube in pure GG. Most of the spec's I've
>seen show it as only 200 watts or so output in GG. Problem is the tube
>just doesn't have much power gain in GG.

The B&W L-1000 amp used a pair of 813s in GG, as I recall. How did they get 'em to work?

>If you bias it as a tetrode
>the power gain goes way up, you can still run it 'cathode driven' to
>avoid neutralization though.

Makes sense, but the other problems (socket, filament voltage, high C, need for higher plate volts to get full power) make it a second choice compared to, say, a pair of 811As. (A pair of 811As needs only 1500 V to do 450 W input, while a single 813 wants more like 2500 V)

73 de Jim, N2EY

2650. Re: 4CX5000

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 19:07:29 UTC
From: Eddie Haskel <wiseguy@clever.com>
Message-ID: <RXDbc.45630$wv2.10560@newssvr25.news.prodigy.com>
Source record: 27237

Congrats on the completion of the amplifier! Sounds like its working very well. I know you will find its very stable. Watch the filament voltage so it doesnt exceed the max. Filament current is around 90 Amps....Eddie

"Onno" <ploetsio@hotmail.com> wrote in message news:4ee37d0e.0404031048.1a54c323@posting.google.com...
> Hallo again.
>
> This is specialy for Eddy and Dave
>
> I just finish the building and testing of my 4CX5000 final.
> Buy the way....I build the Broadcast Electronics version.
> Today i tested the amp with an driving power of 150 Watts and the
> output power was 8000 Watts. It ran it on 7000 volts and it consume
> about 1.8 amp.
> I alsow find out that the tube is not a 4CX5000A but a 4CX5000J/8909.
> I measure the filament current so thats wy the 10.000 watts is not in
> reach.
> The difference between these tube's is the maximum frequency range.
> The 5000A runs till 220 mhz and it's brother...the5000J runs till 100
> mhz.
> But still i feel pretty good about this project.
> If You wanna see a picture of this final amp just mail me and i will
> send You one.
> Thanks for supporting me.
>
> Greetings from Holland.....Onno

2651. Re: Magnet wire vs. enamelled copper wire

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 19:13:33 UTC
From: Bob <balbert@access1.net>
Message-ID: <xaednRpL-ccHk_Ld4p2dnA@ecrii.com>
Source record: 27239

Magnet wire is a generic term for wire intended for winding coils, with very thin insulation so as not to waste precious winding space.

Enameled wire is simply one form of it, probably the most popular. Enamel is a lot thinner insulation than a plastic sheath so won't waste winding space.

In the old days there were enameled, single cotton covered (SCC), double cotton covered (DCC), single silk covered, and some others. Today enamel is used as well as various plastics. One popular type melts away with a soldering iron, making stripping the end unnecessary, very convenient.

They are all magnet wire.

2652. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 19:19:47 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BC947878.3B33%outhouse@midcoast.com>
Source record: 27238

in article i6xbc.26447$He5.498276@bgtnsc04-news.ops.worldnet.att.net,
Paul_Morphy at nopaul_morphy2@coolgoose.com wrote on 4/3/04 06:20:

>
> "Uwe" <outhouse@midcoast.com> wrote in message
> news:BC93AAA2.3744%outhouse@midcoast.com...
>
>> And Paul, lest you get the impression I hate silicon, I just finished a
>> Rockmite-very cute.
>
> There may be hope for you after all, Uwe. :> I went through a
> boatanchors-revisited phase about 10 years ago, when I finally got to own
> two Drake 2Bs, an Eico 720 with Hallicrafters HA-5 VFO and a Ranger II
> (thanks to the Hosstraders flea market in New Hampshire, which you shouldn't
> miss), my dream stations when I was 15. I never cared a lot for the voice
> modes, either; CW is my mode of choice. After lugging those relatively small
> boatanchors around a little, though, I decided to get back to the present.
> For inspiration along the silicon lines (and to see some really nice photos
> of mountains in the Pacific NW) I recommend Wes Hayward's (W7ZOI) site:
> http://users.easystreet.com/w7zoi/w7zoi-page.html
>
> 73,
>
> "PM"
>
>
>

Paul, how interesting, I just had Wes Haywards book in hand the other day at a local hamfest. I own the Solid State Design Book and had considered Radio Frequency Design but found that one rather technical. But "Experimental Methods in RF Design" caught my eye but also caught me at the end of the day without the necessary $50 to take it home.

Experimenting is really what all this is about for me and I do lack some of the foundations and tools for successful RF tinkering, so I always look for a good introduction.

And somehow tubes, which seem to deal with electrons on a macroscopic, nearly mechanical level seem to be a bit more accessible than transistors which I think deal with all this on an atomic level.

And here you send me a link to Haywards website. Well thanks, and yes, nice mountains.

I went and added a choke and a capacitor to my crystal and believe it or not it actually still oscillated. I did some measurements and found that I can pull the crystal (I used one of the crystals out of the rockmite!) from 7038 to 7040, after being rockbound that feels like now I am "all over the place". And while I was fiddeling with the radio I heard a station and ran my first QSO on a frequency I couldn't get to until 3 hours ago, with rigged up parts and clip leads all over the place!! Radio work at its finest.

But one solution immediately leads to the next problem, how do I know where I am. What do they call them, frequency counters???

Regards Uwe

2653. Re: Magnet wire vs. enamelled copper wire

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 19:27:28 UTC
From: fmmck@aol.com
Message-ID: <20040403142728.21617.00000580@mb-m13.aol.com>
Source record: 27240

<< wonder what is the difference between enam. cu wire and magnet wire >>

Jan-Martin-

To the best of my knowlege, the only difference is that you could use other kinds of insulation on wire to be used for magnets. In other words, enameled copper wire is one type of magnet wire. Other insulating materials such as cloth, fiberglass and asbestos have been used.

I got started in electronics by tearing up discarded radios for their parts. Radios from the 1930s and 1940s had speakers that used an electromagnet instead of the permanent magnet used in most of today's speakers. In additon to providing the speaker's magnetic field, the electromagnet acted as a filter choke inductor for the radio's power supply. Those old speakers were a good source of enameled copper wire.

73, Fred, K4DII

2654. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 20:35:35 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <reFbc.17011$vo5.524565@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27241

"Uwe" <outhouse@midcoast.com> wrote in message
news:BC947878.3B33%outhouse@midcoast.com...
> Paul, how interesting, I just had Wes Haywards book in hand the other day
at
> a local hamfest. I own the Solid State Design Book and had considered
Radio
> Frequency Design but found that one rather technical. But "Experimental
> Methods in RF Design" caught my eye but also caught me at the end of the
day
> without the necessary $50 to take it home.

Yes, I'm resisting spending the money, too. I can buy a lotta parts with 50
bucks.

> And somehow tubes, which seem to deal with electrons on a macroscopic,
> nearly mechanical level seem to be a bit more accessible than transistors
> which I think deal with all this on an atomic level.

Electrons don't know where they are, tube or semiconductor, it's all the
same to them. Study the intro chapters in the Handbook and SSD and do some
experiments and it wil start to make sense.

> But one solution immediately leads to the next problem, how do I know
where
> I am. What do they call them, frequency counters???

Uwe, if you don't know where you are, you are asking on the wrong newsgroup.
:>

If you're only moving 2 kHz and you're well inside the band, it really
doesn't matter. You have a digital display on your receiver, so you should
be able to kluge something together that will let you zero beat the other
station.

Be careful with those little crystals. They won't take a lot of current,
not as much as one in an FT-243 holder. You could pop it. You'll hear it
click when it blows. Why not build a VFO from SSD?

73,

"PM"

2655. Re: Transistorized "cascode" RF amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 20:41:41 UTC
From: k3bu@aol.comNoUsama
Message-ID: <20040403154141.15684.00000552@mb-m04.aol.com>
Source record: 27243

Thanks for pointers, I will have look at references mentioned.
Another requirement would be good handling strong signals, like using 807 :-)

I am trying to build the converter with strong signal handling capabilities,
low noise and high gain.

Next step is looking at the mixers and low noise synthesizers.

Thanks a bunch!

Yuri, K3BU

2656. Re: radio receiver "alignment"

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 21:03:50 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <9fFbc.4537$ts4.3629@bignews3.bellsouth.net>
Source record: 27242
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

art wrote:
> That's nothing. I got a better story..
>
> Dad bought a pair of walkie talkies back in 1964 when I was 5 yr old,
> I found the soldering iron (always watched him fix the tv sets for people)
>
> and removed every part on the pc board from one of the wt !
>
> When he got home, I thought he would whip my butt but instead
> he gave me a big pat on the head and was proud of my work !
>
> art
>
>
So you turned it into a Heathkit!
Did you every try to put it back together?

I used to find old AA5's in the trash and gut them for the parts.
I later built a brand new one using the best of the parts from
the dead ones. So I guess that was my 'Frankenstein' radio.
The chassis was a frame from an old radio that had held a pc
board. I just slipped a piece of galvanized steel where the pc
card had been and then drilled and punched it out for my chassis.
It was actually a very good radio, and doubled as an amplifier for
a photograph turntable (also found in the trash).

2657. Re: HBR-16

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 22:58:00 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <106ugbdggtelh87@corp.supernews.com>
Source record: 27244

Ken Scharf wrote:

>>> If I used a single 1625 in the final, it would be good for about 25
>>> watts output without straining. Then if I needed more power, I'd
>>> build a linear amp using a 2 or 3 811A's (that's 340-410 Watts PEP
>>> output).
>>
>>
>>
>> But will 25 watts drive a two- or three-hole 811A amp in grounded
>> grid? All of the data I've seen says you need about 15 watts per 811A
>> in GG. Grid Driven requires a lot less (about 5W) but then you need a
>> grid tank, etc.
>>
> The 15 watt figure is close, I think the offical handbook rating was 12
> watts per tube in GG. The higher figure was with an UNTUNED input
> without any impedance matching network (just the way most 811 gg amps
> were built, since the average exciter provided about 100 watts output
> who cared?).
>
> TWO 811A's should easily be driven by a 25w out exciter with a good
> matching network between the amp and the exciter, it might be pushing it
> to drive three (But you can get 35w pep out of a single 1625, or use two
> of them in the final for 50w output in AB1).
>
> BTW the 1625 used to be the last cheap final left. Fair Radio had new
> ones for $4.50 up till last year. Now they only have used ones left for
> $3.00. Everyone has discovered that 6159's are really 25v heater 6146's
> and the price has jumped from a few bucks to the $18 range. The US made
> 811A's are drying up (and you have to be carefull of those Chinese
> tubes, some are OK, others don't last long). I remember back in the
> 60's when BA was selling NOS surplus 1625's for $0.25 each! (Should
> have bought several gross and put them in storage, but not on a
> teenagers budget).
>
>
>>
>>> Not a full gallon, but the extra few db ain't worth the cost! I have
>>> some 813's in the junkbox, but the sockets for them are costly, and
>>> they have such HIGH output capacitance that making a good tank
>>> circuit in a single ended amp is rather a pain. Still a grounded
>>> grid tetrode circuit looks interresting! (cathode driven with normal
>>> g1 and g2 voltages).
>>

>>
>>
>> I always thought the big advantage of GG was elimination of the need
>> for screen and bias supplies.
>> >
>
> The 813 isn't such a great tube in pure GG. Most of the spec's I've
> seen show it as only 200 watts or so output in GG. Problem is the tube
> just doesn't have much power gain in GG. If you bias it as a tetrode
> the power gain goes way up, you can still run it 'cathode driven' to
> avoid neutralization though.

Antique Electronics Supply, http://www.tubesandmore.com, has 1625s for
$5.00 a pop.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

2658. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-03 23:01:29 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <106ughsho9r7f0b@corp.supernews.com>
Source record: 27245

Paul_Morphy wrote:

> I have to say this again: Time to put this thing on the shelf. For the time
> and trouble you are putting into it you could build a solid-state rig that
> would put out as much power, have a VFO and not contain life-threatening
> voltages.
>
> 73,
>
> "PM"
>
>

And don't go mountain climbing. And don't drive race cars. And don't
learn how to do aerobatics.

Etc.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

2659. Re: Transistorized "cascode" RF amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 00:01:19 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <p9KdnYAQFqMt3_LdRVn-ug@ctc.net>
Source record: 27246

"Yuri Blanarovich" <k3bu@aol.comNoUsama> wrote in message
news:20040403154141.15684.00000552@mb-m04.aol.com...
> Thanks for pointers, I will have look at references mentioned.
> Another requirement would be good handling strong signals, like using 807
:-)
>
> I am trying to build the converter with strong signal handling
capabilities,
> low noise and high gain.
>
> Next step is looking at the mixers and low noise synthesizers.
>
> Thanks a bunch!
>
> Yuri, K3BU

You are working at it wht wrong way. The three things you mentioned do not go together. What you want is somthting with strong signal handling and low noise. You use just enough gain to override the mixer noise. Then make up the gain at the IF stages after the filters.

2660. Re: Transistorized "cascode" RF amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 00:19:57 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c4nkbd$p2g$1@freenet9.carleton.ca>
Source record: 27147

"Ralph Mowery" (rmowery@ctc.net) writes:
> "Yuri Blanarovich" <k3bu@aol.comNoUsama> wrote in message
> news:20040403154141.15684.00000552@mb-m04.aol.com...
>> Thanks for pointers, I will have look at references mentioned.
>> Another requirement would be good handling strong signals, like using 807
> :-)
>>
>> I am trying to build the converter with strong signal handling
> capabilities,
>> low noise and high gain.
>>
>> Next step is looking at the mixers and low noise synthesizers.
>>
>> Thanks a bunch!
>>
>> Yuri, K3BU
>
> You are working at it wht wrong way. The three things you mentioned do not
> go together. What you want is somthting with strong signal handling and low
> noise. You use just enough gain to override the mixer noise. Then make up
> the gain at the IF stages after the filters.
>
>
Or, no rf stage at all.

I can't remember what frequency this if for, if it was mentioned.
An RF stage is only needed if there is need, like one needs front
end selectivity to eliminate images or to keep the mixer from overloading,
and the amplification is there to overcome the losses of the filter.
Another need would be that a good low noise stage is needed because
what comes later is too noisy.

Michael VE2BVW

2661. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 00:24:50 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <mBIbc.17678$vo5.541557@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27148

"Tim Wescott" <tim@wescottnospamdesign.com> wrote in message
news:106ughsho9r7f0b@corp.supernews.com...

> And don't go mountain climbing. And don't drive race cars. And don't
> learn how to do aerobatics.

Well, I've only done the first two. I was just trying to persuade him to
take up solid-state stuff. He keeps talking about the HV power supply on his
bench and that makes me think of how nice it is to work at 12 V.

BTW, I found mountaineering and racing a helluva lot more exciting than
working with vacuum tubes.

73,

"PM"

2662. Re: Transistorized "cascode" RF amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 01:16:22 UTC
From: k3bu@aol.comNoUsama
Message-ID: <20040403201622.22447.00000569@mb-m14.aol.com>
Source record: 27149

Ralph wrote:

>You are working at it wht wrong way. The three things you mentioned do not
>go together. What you want is somthting with strong signal handling and low
>noise. You use just enough gain to override the mixer noise. Then make up
>the gain at the IF stages after the filters.
>

Not really. What you say is the general "wisdom".
I want low noise, high (adjustable) gain preselector. Something with below 0.1 uV. There are situations when that is needed (small loops receiving antennas, Beverages on low bands, etc.) The gain should be adjusable so it is (band noise) just above the noise threshold of the mixer for particular antenna/band situation.

At the same time have high dynamic range to handle strong signals S9+60dB without overload.

Way back I modified Drake R4B by putting 6EH7 as preselector with separate RF gain control. It worked very well and it is still hard to beat.

Yuri, www.K3BU.us

2663. Re: Link to tutorial on diplexer design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 01:33:03 UTC
From: Jim Pennell <Nospam@killspam.com>
Message-ID: <jBJbc.14871$lt2.9696@newsread1.news.pas.earthlink.net>
Source record: 27150

Hi Rick.

There was an article quite some time ago which listed a computer program
for calculating a diplexer of the same type as you show on your website.
Speaking of which, I like how you presented the information about diplexers.
Well done, and easy to understand.

========

I am not sure if you will be able to get a copy of this article, but it
was from:

'PROGRAM BY JEAN-LUC DUGAS
'NOVEMBER 1986 R.F. DESIGN PAGE 97

The program allows choosing Highpass/Lowpass or Bandpass/Bandstop.

According to the RFdesign website, they plan to eventually have archived
online back issues, but so far they only go back to 1999.

Anyway, here is the archive website:

http://archive.rfdesign.com/

Jim Pennell
N6BIU

2664. Re: Minimum 68,000uf @ 75wv Electrolytics req

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 02:00:47 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1081044050.724106@smtp-1.griffin.com>
Source record: 27151

phil remind me to look in loft...
"Philip de Cadenet" <Philstheboss@thebbc.fslife.co.uk> wrote in message
news:FxE8shFcmtaAFw5p@philstheboss.freeserve.co.uk...
> Hello Hans,
>
> >> Would accept a couple in series or parallel to get to the above
minimum.
> >>
> >> I require two in total.
> >>
> >> Would anyone have something similar of good quality that they would be
> >> willing to sell?
> >>
> >
> >Farnell sell 47,000 uF @ 100V, part number 3878156 see
> >http://www.Farnell.com ... not cheap at £58.94 + VAT each. They also sell
> >15,000 uF @ 100V in various styles.
>
> Yes, I'd checked Farnell but knew beforehand they were not going to be
> cheap.
>
> If I cannot find someone with surplus to requirement stock then it's
> probably a case of chasing the surplus houses.
>
> Tnx
> --
> Philip de Cadenet G4ZOW
> Transmitters 'R' Us
> http://www.transmittersrus.com

2665. rf shieling/screened boxes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 02:06:10 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1081044373.679590@smtp-1.griffin.com>
Source record: 27152

looking to make my own little tin plate screened boxes..have been making them, but getting a nice clean tight fold is tricky..has anyone got plans of a mini folding jig??has to be able to adjust width of fold as will be used on different sized boxes..typical size 60mm x 50mm x 25mm. with 2 lids.. up to 150mm x 50 mm x 25mm

tin plate 0.2mm thickness..

thanks

simon g0zen

2666. Re: Link to tutorial on diplexer design

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 05:22:39 UTC
From: ehsjr@bellatlantic.net
Message-ID: <406F9BD7.1D9CE7B2@bellatlantic.net>
Source record: 27153

Rick Karlquist N6RK wrote:
>
> Here is a link to a tutorial on diplexer design I just posted:
>
> http://www.n6rk.com/diplexer/diplexer.pdf
>
> Rick N6RK

I really enjoyed the other stuff on your site
http://www.n6rk.com/
as well as the diplexer. I was amazed at your
1 man system for raising a 90 foot vertical!

2667. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 05:53:28 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BC950D09.3B46%outhouse@midcoast.com>
Source record: 27154

in article mBIbc.17678$vo5.541557@bgtnsc05-news.ops.worldnet.att.net,
Paul_Morphy at nopaul_morphy2@coolgoose.com wrote on 4/3/04 19:24:

>
> "Tim Wescott" <tim@wescottnospamdesign.com> wrote in message
> news:106ughsho9r7f0b@corp.supernews.com...
>
>> And don't go mountain climbing. And don't drive race cars. And don't
>> learn how to do aerobatics.
>
> Well, I've only done the first two. I was just trying to persuade him to
> take up solid-state stuff. He keeps talking about the HV power supply on his
> bench and that makes me think of how nice it is to work at 12 V.
>
> BTW, I found mountaineering and racing a helluva lot more exciting than
> working with vacuum tubes.
>
> 73,
>
> "PM"
>
>

12V, holy cow!
If I go low voltage I keep it at around 5. I am building a controller board
with basic stamps and recently fried an A/D chip by letting it have 12V, it
was lethal.

By the way, talking about overload. The issue of crystals breaking has been
mentioned a few times, but how do I measure what the crystal "sees" for
current and what is tooo much???

73
Uwe

2668. Re: Minimum 68,000uf @ 75wv Electrolytics req

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 07:18:57 UTC
From: Philip de Cadenet <Philstheboss@thebbc.fslife.co.uk>
Message-ID: <B2KNNGChb7bAFwxF@philstheboss.freeserve.co.uk>
Source record: 27155

>phil remind me to look in loft...
>"Philip de Cadenet" <Philstheboss@thebbc.fslife.co.uk> wrote in message
>news:FxE8shFcmtaAFw5p@philstheboss.freeserve.co.uk...
>> Hello Hans,
>>
>> >> Would accept a couple in series or parallel to get to the above
>minimum.
>> >>
>> >> I require two in total.
>> >>
>> >> Would anyone have something similar of good quality that they would be
>> >> willing to sell?
>> >>
>> >
>> >Farnell sell 47,000 uF @ 100V, part number 3878156 see
>> >http://www.Farnell.com ... not cheap at ï¿½58.94 + VAT each. They also sell
>> >15,000 uF @ 100V in various styles.

Answered off line.
--
Philip de Cadenet
Transmitters 'R' Us
http://www.transmittersrus.com

2669. Re: Magnet wire vs. enamelled copper wire

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 08:50:41 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <106vj34qhpapse1@corp.supernews.com>
Source record: 27156

Bob gave a very good explanation. I'll add that the term "enameled" is a carryover also. I doubt that real enamel is used any more, and that "enameled" wire is actually coated with plastic these days. But we still use the term to describe wire, usually solid, with a very thin, usually transparent, coating. And because it's by far the most commonly used wire type for winding coils, "enameled wire" and "magnet wire" are often used interchangeably.

Roy Lewallen, W7EL

Bob wrote:

> Magnet wire is a generic term for wire intended for winding coils, with very
> thin insulation so as not to waste precious winding space.
>
> Enameled wire is simply one form of it, probably the most popular. Enamel
> is a lot thinner insulation than a plastic sheath so won't waste winding
> space.
>
> In the old days there were enameled, single cotton covered (SCC), double
> cotton covered (DCC), single silk covered, and some others. Today enamel is
> used as well as various plastics. One popular type melts away with a
> soldering iron, making stripping the end unnecessary, very convenient.
>
> They are all magnet wire.
>
>

2670. Re: Transistorized "cascode" RF amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 09:09:15 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <k8iv60pofudutskm830dbeb9556vhigsh2@4ax.com>
Source record: 27157

On 04 Apr 2004 01:16:22 GMT, k3bu@aol.comNoUsama (Yuri Blanarovich)
wrote:

>Not really. What you say is the general "wisdom".
>I want low noise, high (adjustable) gain preselector. Something with below 0.1
>uV. There are situations when that is needed (small loops receiving antennas,
>Beverages on low bands, etc.) The gain should be adjusable so it is (band
>noise) just above the noise threshold of the mixer for particular antenna/band
>situation.

While you definitely need the lowest noise figure and a high gain when using small magnetic loops, I very much doubt that you are going to need the strong signal handling capabilities for these antennas. Why not use a dedicated preamplifier constantly attached to these antennas, possibly with some protection circuitry to avoid damage when transmitting through your nearby transmitter antenna ?

With modern transistors you can get quite noise figures, however, some transistors may obtain those low noise figures only at UHF and above, since the 1/f may start already in the MF or HF range.

One other thing to watch when using devices with gain up to the microwave bands is the direct pick-up of local FM and TV signals, unless the circuitry is well shielded and the input filters contains capacitors with low parasitic inductance.

Just switch the receiver input between the magnetic loop preamplifier output and the full sized antenna and avoid the hassle with variable gain stages.

>At the same time have high dynamic range to handle strong signals S9+60dB
>without overload.

You are going to encounter such signals from a full sized antenna, but even at 14 MHz, the band noise is still quite high, so the ultimate noise figure is not so important.

By the way, did you check the "A High-Dynamic-Range MF/HF Receiver front end " by Jacob Makhinson N6NWP (QST February 1993 p. 23-28, with corrections in June 1993 p. 73) ?

It contains push-pull preamplifier designs with feedback with nearly +33 dBm input IP3 and gain compression starting around S9+80 dB.

Paul OH3LWR

2671. Re: rf shieling/screened boxes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 09:59:27 UTC
From: mike@corn2.freeserve.co.uk
Message-ID: <406fdbe0.268062931@news.freeserve.net>
Source record: 27158

On Sun, 4 Apr 2004 03:06:10 +0100, "zindazenda" <zen@lineisp.co.uk>
wrote:

>looking to make my own little tin plate screened boxes..have been making
>them, but getting a nice clean tight fold is tricky..has anyone got plans of
>a mini folding jig??has to be able to adjust width of fold as will be used
>on different sized boxes..typical size 60mm x 50mm x 25mm. with 2 lids.. up
>to 150mm x 50 mm x 25mm
>
>tin plate 0.2mm thickness..
>
I've not tried it as I can't find any suitable sheet metal, but
aparently if you score the inside of the fold line with a scalpel
blade then the bend goes easier.
Where are you finding the sheet tinplate?.

hth Mike W, G8NXD

2672. Wanted: Maintenance manual for AN/USM323 (the military version of the HP8640B sig gen)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 12:07:28 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <3MicnR2mAf0jZ_LdUSdV9g@ptd.net>
Source record: 27159
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.swap

Looking for the manual listed in the subject line - in really good condition, no "beaters," please.

Will pay reasonable price for original or reasonable copying costs.

Thanks for any info.

73,
Carl - wk3c

2673. Re: Magnet wire vs. enamelled copper wire

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 14:16:40 UTC
From: "Gary S." <Idontwantspam@net>
Message-ID: <ps5070t6576v1h4ug437k1cbvk6u75p3fq@4ax.com>
Source record: 27160

On Sun, 04 Apr 2004 00:50:41 -0800, Roy Lewallen <w7el@eznec.com>
wrote:

>Bob gave a very good explanation. I'll add that the term "enameled" is a
>carryover also. I doubt that real enamel is used any more, and that
>"enameled" wire is actually coated with plastic these days. But we still
>use the term to describe wire, usually solid, with a very thin, usually
>transparent, coating. And because it's by far the most commonly used
>wire type for winding coils, "enameled wire" and "magnet wire" are often
>used interchangeably.
>
Actual enamel is more easily chipped off, and a blade will scrape it
away from where you wish to solder.

The newer plastic coating is nearly indestructible, resisting scraping
with a blade, soldering iron heat, and most solvents. There is a
special solvent (rather nasty one, IIRC) which softens it up enough to
remove. Otherwise, power tools, flamethrower, or something really
serious is needed to remove it.

The simplest way is to get the special solvent, but go generous on the
ventilation.

Happy trails,
Gary (net.yogi.bear)
---
at the 51st percentile of ursine intelligence

Gary D. Schwartz, Needham, MA, USA
Please reply to: garyDOTschwartzATpoboxDOTcom

2674. Re: rf shieling/screened boxes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 14:32:00 UTC
From: "Gary S." <Idontwantspam@net>
Message-ID: <e660701j4f5krgv04gful1gf0god82lk0b@4ax.com>
Source record: 27161

On Sun, 4 Apr 2004 03:06:10 +0100, "zindazenda" <zen@lineisp.co.uk>
wrote:

>looking to make my own little tin plate screened boxes..have been making
>them, but getting a nice clean tight fold is tricky..has anyone got plans of
>a mini folding jig??has to be able to adjust width of fold as will be used
>on different sized boxes..typical size 60mm x 50mm x 25mm. with 2 lids.. up
>to 150mm x 50 mm x 25mm
>
The tool used in machine shops for this is called a "sheet metal
brake", and will do all that you are asking for, partial width folds,
exact angle bends, etc.

You might find a small used one out there, but looking at a picture of
one will give you ideas for a home version.

There are plans for building one, which might be best for you, as you
can readily scale everything down.

Acceess to a machine shop for some of the parts would help.

Some useful references from Google:

<http://www.amazon.com/exec/obidos/tg/detail/-/1878087061/104-8014419-0819955?v=glance>

<http://www.artmetal.com/brambush/forum/bramyak2/messages/806.html>

<http://www.homemetalshopclub.org/news/dec01/dec01.html>

<http://www.lowbucktools.com/brakes.html>

<http://www.stevehenryracing.com/brakeplans.htm>

These are just from the first page of results.

Also see eBay:

<http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=3806706453&category=25278>

HTH,
Happy trails,
Gary (net.yogi.bear)
---
at the 51st percentile of ursine intelligence

Gary D. Schwartz, Needham, MA, USA
Please reply to: garyDOTschwartzATpoboxDOTcom

2675. Re: Magnet wire vs. enamelled copper wire

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 15:40:22 UTC
From: Al <no.spam@here.com>
Message-ID: <no.spam-8800D1.11402204042004@news.verizon.net>
Source record: 27162

In article <ps5070t6576v1h4ug437k1cbvk6u75p3fq@4ax.com>,
Gary S. <Idontwantspam@net> wrote:

> On Sun, 04 Apr 2004 00:50:41 -0800, Roy Lewallen <w7el@eznec.com>
> wrote:
>
> >Bob gave a very good explanation. I'll add that the term "enameled" is a
> >carryover also. I doubt that real enamel is used any more, and that
> >"enameled" wire is actually coated with plastic these days. But we still
> >use the term to describe wire, usually solid, with a very thin, usually
> >transparent, coating. And because it's by far the most commonly used
> >wire type for winding coils, "enameled wire" and "magnet wire" are often
> >used interchangeably.
> >
> Actual enamel is more easily chipped off, and a blade will scrape it
> away from where you wish to solder.
>
> The newer plastic coating is nearly indestructible, resisting scraping
> with a blade, soldering iron heat, and most solvents. There is a
> special solvent (rather nasty one, IIRC) which softens it up enough to
> remove. Otherwise, power tools, flamethrower, or something really
> serious is needed to remove it.
>
> The simplest way is to get the special solvent, but go generous on the
> ventilation.
>
> Happy trails,
> Gary (net.yogi.bear)
> --

The enamal is often "formvar." Check this out:
http://www.reawire.com/formvar.asp

Kapton had been used for this also.

But this would be for high end uses. The cheaper ones may actually be
varnish! As it is thin, it will bend with the wire unless the angle is
really acute. You don't want two cracks aligning with each other. But
this is the luck of the draw.

I actually used a specialized microscope at one time which allowed a 360
degree view of the wire. You would spool it through and look for
defects. Who would do this? The space program and the military for very
high reliability equipment.

Al

--
There's never enough time to do it right the first time.......

2676. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 16:47:38 UTC
From: Uncle Peter <radioconnectionNO@cox.netSPAM>
Message-ID: <S_Wbc.10399$pM1.10231@lakeread06>
Source record: 27163

>
> 12V, holy cow!
> If I go low voltage I keep it at around 5. I am building a controller
board
> with basic stamps and recently fried an A/D chip by letting it have 12V,
it
> was lethal.
>
> By the way, talking about overload. The issue of crystals breaking has
been
> mentioned a few times, but how do I measure what the crystal "sees" for
> current and what is tooo much???
>
>
> 73
> Uwe

You can use a panel lamp in series with the crystal to limit the current (too much current causes the lamp to glow, increasing the resistance, limiting the current)... Check some of the earlier handbooks for the proper lamp to use... A 47 might be a good start. This is really a bigger problem when crystals other than the older pressure mount FT243 are used (modern plated lead connections) or with larger PA tubes used as oscillators (6L6, 807, etc.)

Pete
>
>

2677. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 16:49:04 UTC
From: Uncle Peter <radioconnectionNO@cox.netSPAM>
Message-ID: <b0Xbc.10404$pM1.5246@lakeread06>
Source record: 27164

"Paul_Morphy" <nopaul_morphy2@coolgoose.com> wrote in message
news:WApbc.14393$vo5.439031@bgtnsc05-news.ops.worldnet.att.net...
>
> " Uncle Peter" <radioconnectionNO@cox.netSPAM> wrote in message
> news:vQnbc.9210$pM1.6556@lakeread06...
>
> > I suggest he put all his radios on a shelf, and get a cell phone. No
> > dangerous
> > RF levels, no deadly voltages...
> >
> > NOT
>
> Gee, Unc, have a tough week? :> I don't want him to give up radio, I just
> don't think an Ameco AC-1 is worth the trouble. I didn't want one when I
was
> 15 and they were new, and I wouldn't waste my time fiddling with one now.
>
> 73,
>
> "PM"
>
>
No, but you have some issues. The other guy is "having fun" with his Ameco,
why don't you give it a rest? That isn't exactly the most dangerous
boatanchor I can think off. Thank god you don't frequent the boatanchor
group, you'd be flipping out.

Pete

2678. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 17:21:07 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <7uXbc.20397$vo5.629674@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27165

" Uncle Peter" <radioconnectionNO@cox.netSPAM> wrote in message
news:b0Xbc.10404$pM1.5246@lakeread06...

> No, but you have some issues. The other guy is "having fun" with his
Ameco,
> why don't you give it a rest? That isn't exactly the most dangerous
> boatanchor I can think off. Thank god you don't frequent the boatanchor
> group, you'd be flipping out.

What makes you think I don't? I've horsetraded quite a few BAs in my time, many of which stuck around for my own use. My point was, and is, for the time spent, there may be greater rewards from pursuing a different aspect of the hobby. Ie, he's stuck on mountain climbing, and he might enjoy racing, too.

I find it fascinating that some people project my concerns about obvious newbies fooling with HV into a condemnation of trying something different, especially when 'trying something different' was my point from the outset.

Uwe is certainly as free to accept or disregard my advice as I am to give it.

73,

"PM"

2679. Re: Magnet wire vs. enamelled copper wire

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 18:00:47 UTC
From: Paul Jaeger <p.jaeger@softhome.net>
Message-ID: <40704D4F.DB47489C@softhome.net>
Source record: 27166

http://www.mwswire.com/inschar.htm

2680. Re: radio receiver "alignment"

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 18:07:44 UTC
From: Jeff Liebermann <jeffl@comix.santa-cruz.ca.us>
Message-ID: <pdi0709k302eafn1bqavbnl9envmo0he5e@4ax.com>
Source record: 27168
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Tue, 23 Mar 2004 19:22:18 GMT, art <art_not_carney@nospam.com>
wrote:

>That's nothing. I got a better story..
>
>Dad bought a pair of walkie talkies back in 1964 when I was 5 yr old,
>I found the soldering iron (always watched him fix the tv sets for people)
>
>and removed every part on the pc board from one of the wt !
>
>When he got home, I thought he would whip my butt but instead
>he gave me a big pat on the head and was proud of my work !
>
>art

Too crude. I've been into radio and electronics since I was about 15
years old. Back then, my main source and supply were the WWII surplus
electronics stores and the garbage bin at the local radio/TV repair
shops. Fishing tubes out of the trash and retesting them in the tube
tester was my main source of tubes. Henry Radio's dumpster supplies
much of collection of RF related items.

Circuit boards were often found with the parts I needed, but
unsoldering was tedious. Eventually, I hit upon the proper method. I
clamped one edge of a circuit board into the bench vice on my fathers
workbench, heated the solder side with a propane torch, pulled back on
the board to apply tension, and released the board when the solder
sorta melted. Parts, pieces, and solder would spray all over the
place. I could empty a board full of IC's in about three tries.

The problem was that I wasn't very careful about where the solder
"spray" went. When my father arrived to use his workbench, there were
components and solder blobs imbedded in just about everything. We
spent all day cleaning up my mess. I was later informed that I could
have burned the garage down (but I doubt it). I also wasn't into
wearing safety glasses and was lucky not to have blinded myself. At
the time, extracting parts for projects was deemed more important than
simple survival.

On orders from the high command, the propane torch became off limits,
and I was back to tediously removing components one at a time.

When I eventually went to college and later employment, I again used
the propane torch and springy circuit board method to extract
components en mass. I wore safety glasses and caught the parts in a

large cardboard box.

However, as components and boards became smaller, the method no longer worked. Small thin boards just don't have the spring in them, and SMT parts just don't have mass to be easily launched. Components on both sides means that one side gets ruined in the process.

--
Jeff Liebermann 150 Felker St #D Santa Cruz CA 95060
(831)421-6491 pgr (831)336-2558 home
http://www.LearnByDestroying.com AE6KS
jeffl@comix.santa-cruz.ca.us jeffl@cruzio.com

2681. Re: Wanted: Maintenance manual for AN/USM323 (the military version of the HP8640B sig gen)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 18:29:00 UTC
From: Ed G <Spectrumhog_REMOVE_@Starband.net>
Message-ID: <Xns94C174D856C42SpectrumhogStarbandn@63.223.5.248>
Source record: 27167
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.swap

> Looking for the manual listed in the subject line - in really good
> condition, no "beaters," please.
>
> Will pay reasonable price for original or reasonable copying costs.
>

In case you missed it, there's a guy on EBay selling this on CD's, pretty
cheap.

Ed

2682. Re: rf shieling/screened boxes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 18:52:39 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1070mb86cr27e28@corp.supernews.com>
Source record: 27169

zindazenda wrote:
> looking to make my own little tin plate screened boxes..have been making
> them, but getting a nice clean tight fold is tricky..has anyone got plans of
> a mini folding jig??has to be able to adjust width of fold as will be used
> on different sized boxes..typical size 60mm x 50mm x 25mm. with 2 lids.. up
> to 150mm x 50 mm x 25mm
>
> tin plate 0.2mm thickness..
>
> thanks
>
> simon g0zen
>
>

Micro-Mark, Small Parts, Inc, and McMaster Carr in the US all have
miniature brakes for this. I don't know what the UK equivalent company
would be, but I'd be surprised if there isn't something out there that
you can buy.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

2683. Re: Transistorized "cascode" RF amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 19:07:18 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404041107.5d48eade@posting.google.com>
Source record: 27170

The tuner I mentioned did the cascode specifically to achieve low
noise and the ability to handle big signals with low distortion.
Somewhere in my disorganized archives I think I have more info on it,
but don't ask me to look! ;-) As I recall, they used a transistor
billed for CATV service with low noise and good linearity on the
input, and an RF power mosfet on the output--one of the old Siliconix
VMOS ones?? Haven't looked at it in 30 years, so I hope you'll excuse
my lapses of memory. In general to get low distortion, expect to have
to use fairly high current levels.

Do you have specific requirements? You may well be able to do fine
with a different, simpler design. I'd submit your requirement is not
for a cascode, but for specific TOI and perhaps harmonic performance
and noise level and input and output impedances.

Cheers,
Tom

k3bu@aol.comNoUsama (Yuri Blanarovich) wrote in message
news:<20040403154141.15684.00000552@mb-m04.aol.com>...
> Thanks for pointers, I will have look at references mentioned.
> Another requirement would be good handling strong signals, like using 807 :-)
>
> I am trying to build the converter with strong signal handling capabilities,
> low noise and high gain.
>
> Next step is looking at the mixers and low noise synthesizers.
>
> Thanks a bunch!
>
> Yuri, K3BU

2684. Re: Wanted: Maintenance manual for AN/USM323 (the military version of the HP8640B sig gen)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 19:49:54 UTC
From: mike <spamme0@juno.com>
Message-ID: <407066E2.4050904@juno.com>
Source record: 27171
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.swap

Carl R. Stevenson wrote:
> Looking for the manual listed in the subject line - in really good
> condition, no "beaters," please.
>
> Will pay reasonable price for original or reasonable copying costs.
>
> Thanks for any info.
>
> 73,
> Carl - wk3c
>

You can download a similar manual from the army site
https://www.logsa.army.mil/etms/data/A/060577.pdf
This is an old link so here's the number.

TM-9-4935-601-14-7&P

May just have to search for 8640 on the site.
mike

--
Return address is VALID.
Bunch of stuff For Sale and Wanted at the link below.
Toshiba & Compaq LiIon Batteries, Test Equipment
Honda CB-125S $800 in PDX
Yaesu FTV901R Transverter, 30pS pulser
Tektronix Concept Books, spot welding head...
http://www.geocities.com/SiliconValley/Monitor/4710/

2685. Re: Magnet wire vs. enamelled copper wire

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 20:02:44 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <fyZbc.5009$FX.686@bignews2.bellsouth.net>
Source record: 27172

Fred McKenzie wrote:
> << wonder what is the difference between enam. cu wire and magnet wire >>
>
> Jan-Martin-
>
> To the best of my knowlege, the only difference is that you could use other
> kinds of insulation on wire to be used for magnets. In other words, enameled
> copper wire is one type of magnet wire. Other insulating materials such as
> cloth, fiberglass and asbestos have been used.
>
> I got started in electronics by tearing up discarded radios for their parts.
> Radios from the 1930s and 1940s had speakers that used an electromagnet instead
> of the permanent magnet used in most of today's speakers. In additon to
> providing the speaker's magnetic field, the electromagnet acted as a filter
> choke inductor for the radio's power supply. Those old speakers were a good
> source of enameled copper wire.
>
> 73, Fred, K4DII
>
Also old tv focus coils and deflection yokes.
I've also torn up old transformers to rewind them
and saved the wire.
I've made a few filter chokes out of old filament transformers.
I pull out the E I core pieces, unwind the secondary, and add more
wire to the primary. Then I reassemble the core, with all the E pieces
going the same way (single air gap since a choke see mostly DC).
Radio Shack filament transformers are wound on a plastic bobbin which
makes the job easier. I've gotten about 7-8 henrys out of these,
good filter chokes for tube equipment.

2686. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 20:03:44 UTC
From: averyfineman@aol.com
Message-ID: <20040404160344.18733.00000213@mb-m03.aol.com>
Source record: 27174

In article <BC950D09.3B46%outhouse@midcoast.com>, Uwe <outhouse@midcoast.com>
writes:

>12V, holy cow!
>If I go low voltage I keep it at around 5. I am building a controller board
>with basic stamps and recently fried an A/D chip by letting it have 12V, it
>was lethal.

Heh heh heh...you low-voltage kids are all alike. Us vacuum veterans
would not think twice about the +120 VDC (the "B+") in the old
"All-American Five" cheap table model AM BC radios.... :-)

>By the way, talking about overload. The issue of crystals breaking has been
>mentioned a few times, but how do I measure what the crystal "sees" for
>current and what is tooo much???

Seriously, folks, the websites for International Crystal, Corning
Frequency Control division, etc., all give specs on various sizes
and cuts of their quartz crystal units. Few really "measure" the
crystal drive levels since that can be done analytically...if one
knows how to do this. If not, there are several hints on the
various crystal unit websites for approximating that, such as
typical circuits.

The best approach at the beginning is to take advice from others
on what works and what doesn't...such as the old, old FT-243
holder crystals can take more power dissipation (thicker slice of
quartz) than most of the smaller HC-6 holder units. The newer
SMD quartz crystal units have very low power specs and should
not be used with most vacuum tube circuits because of that.

Having been in the electron-pushing racket for better than a half
century and bridging the tube and transistor eras, I've never
experienced any quartz crystal physically "breaking." If a
quartz crystal circuit stopped working, the quartz unit just sat
there without a sound, same as it did when it worked OK. :-)
Only the oscilloscope trace knew what was in the hearts of
such circuits...

Len Anderson
retired (from regular hours) electronic engineer person

2687. Re: Transistorized "cascode" RF amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 20:06:18 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <DBZbc.5013$FX.1787@bignews2.bellsouth.net>
Source record: 27173

>
> By the way, did you check the "A High-Dynamic-Range MF/HF Receiver
> front end " by Jacob Makhinson N6NWP (QST February 1993 p. 23-28, with
> corrections in June 1993 p. 73) ?
>
> It contains push-pull preamplifier designs with feedback with nearly
> +33 dBm input IP3 and gain compression starting around S9+80 dB.
>
> Paul OH3LWR
>

The mixer section is what is REALLY impressive about that front end.
There was another article (also in the handbook) about a similar mixer
that used a siliconix quad dmos fet that was even better.

2688. Re: Wanted: Maintenance manual for AN/USM323 (the military version

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 22:22:23 UTC
From: averyfineman@aol.com
Message-ID: <20040404182223.12851.00000200@mb-m06.aol.com>
Source record: 27175

In article <407066E2.4050904@juno.com>, mike <spamme0@juno.com> writes:

>Carl R. Stevenson wrote:
>> Looking for the manual listed in the subject line - in really good
>> condition, no "beaters," please.
>>
>> Will pay reasonable price for original or reasonable copying costs.
>>
>> Thanks for any info.
>>
>> 73,
>> Carl - wk3c
>
>You can download a similar manual from the army site
>https://www.logsa.army.mil/etms/data/A/060577.pdf
>This is an old link so here's the number.
>
>TM-9-4935-601-14-7&P
>
>May just have to search for 8640 on the site.
>mike

Good link still! It's a 10.0 MB file so takes a bit on a POTS line,
like a very long lunch while the computer does its thing.

LOGSA has a bunch of TMs which are slightly militarized versions
of the original commercial models...including a Collins KWM2
(as AN/FRC-93) and a Tektronix 475 oscilloscope. :-)

The "A" in the full-identity URL seems to be an indicator that it
will download to anyone. Any "B" to "D" is going to demand a
Log-On ID from a registered person...don't try to hack it. :-(

Mike - I've found the LOGSA site to have an extremely fussy
search engine that didn't turn up your valid link, at least in the
main search window. I know the individual CD listings can be
found by the little direct link at bottom of page, that to get the
various EM numbers (of the CD) or other ID by NSN, etc., but
not by standard nomenclature. Can you point in the right
direction to find something like that?

Len Anderson
retired (from regular hours) elecronic engineer person

2689. Re: rf shieling/screened boxes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 23:01:05 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1081119667.231347@smtp-1.griffin.com>
Source record: 27176

thanks peoples...

oh i get the tin plate from RS components..costs about £13 i think for 10 sheets (300 x 400mm i think)..would have to look it up but catalogue not here..

they do 0.2 upwards..

simon
"Tim Wescott" <tim@wescottnospamdesign.com> wrote in message news:1070mb86cr27e28@corp.supernews.com...
> zindazenda wrote:
> > looking to make my own little tin plate screened boxes..have been making
> > them, but getting a nice clean tight fold is tricky..has anyone got plans of
> > a mini folding jig??has to be able to adjust width of fold as will be used
> > on different sized boxes..typical size 60mm x 50mm x 25mm. with 2 lids.. up
> > to 150mm x 50 mm x 25mm
> >
> > tin plate 0.2mm thickness..
> >
> > thanks
> >
> > simon g0zen
> >
> >
>
> Micro-Mark, Small Parts, Inc, and McMaster Carr in the US all have
> miniature brakes for this. I don't know what the UK equivalent company
> would be, but I'd be surprised if there isn't something out there that
> you can buy.
>
> --
>
> Tim Wescott
> Wescott Design Services
> http://www.wescottdesign.com

2690. BC components 100v ceramic disk caps

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 23:20:42 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1081120882.392260@smtp-1.griffin.com>
Source record: 27177

HELP..where can i buy them from???

no one seems to stock them anymore!! ie RS Farnell etc

loking for 22pf/47pf/100pf/220pf

thanks simon g0zen

2691. BC components 100v ceramic disk caps

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-04 23:21:20 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1081120887.796439@smtp-1.griffin.com>
Source record: 27178

HELP..where can i buy them from???

no one seems to stock them anymore!! ie RS Farnell etc

loking for 22pf/47pf/100pf/220pf

thanks simon g0zen

2692. Re: Magnet wire vs. enamelled copper wire

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-05 00:07:24 UTC
From: Bill Hennessy <elhen704@yahoo.com>
Message-ID: <4070A33C.6090708@yahoo.com>
Source record: 27179

Gary S. wrote:
> On Sun, 04 Apr 2004 00:50:41 -0800, Roy Lewallen <w7el@eznec.com>
> wrote:
>
>
>>Bob gave a very good explanation. I'll add that the term "enameled" is a
>>carryover also. I doubt that real enamel is used any more, and that
>>"enameled" wire is actually coated with plastic these days. But we still
>>use the term to describe wire, usually solid, with a very thin, usually
>>transparent, coating. And because it's by far the most commonly used
>>wire type for winding coils, "enameled wire" and "magnet wire" are often
>>used interchangeably.
>>
>
> Actual enamel is more easily chipped off, and a blade will scrape it
> away from where you wish to solder.
>
> The newer plastic coating is nearly indestructible, resisting scraping
> with a blade, soldering iron heat, and most solvents. There is a
> special solvent (rather nasty one, IIRC) which softens it up enough to
> remove. Otherwise, power tools, flamethrower, or something really
> serious is needed to remove it.
>
> The simplest way is to get the special solvent, but go generous on the
> ventilation.
>
> Happy trails,
> Gary (net.yogi.bear)
> --
> at the 51st percentile of ursine intelligence
>
> Gary D. Schwartz, Needham, MA, USA
> Please reply to: garyDOTschwartzATpoboxDOTcom
I have found that putting the wire in a flame and then sanding it works.
But, you are right it's very hard to get off. I wish I cound buy
enamelled wire some place

Bill, N5NOB

2693. Re: BC components 100v ceramic disk caps

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-05 01:15:11 UTC
From: xpyttl <xpyttl_NOSPAM@earthling.net>
Message-ID: <1071cp77iclbna7@corp.supernews.com>
Source record: 27180

I realize it's the wrong side of the pond, but DigiKey lists them, however they appear to be out of stock on the 47pf. Minimum order quantity is 10, but the most expensive is 14 cents U.S. Unfortunately, between the minimum order and shipping they would turn out to be mighty expensive for you. The prices don't seem to go down with quantity as fast as resistors. For example, the 100pF is 88 cents for 10, $6.80 for 100.

Seems like people are using monolithics a lot more these days, but they are a lot more expensive.

..

"zindazenda" <zen@lineisp.co.uk> wrote in message
news:1081120887.796439@smtp-1.griffin.com...
> HELP..where can i buy them from???
>
> no one seems to stock them anymore!! ie RS Farnell etc
>
> loking for 22pf/47pf/100pf/220pf
>
> thanks simon g0zen
>
>
>
>

2694. Re: BC components 100v ceramic disk caps

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-05 01:56:40 UTC
From: Leon Heller <leon_heller@hotmail.com>
Message-ID: <4070bcd8$0$6550$cc9e4d1f@news-text.dial.pipex.com>
Source record: 27181

"zindazenda" <zen@lineisp.co.uk> wrote in message
news:1081120882.392260@smtp-1.griffin.com...
> HELP..where can i buy them from???
>
> no one seems to stock them anymore!! ie RS Farnell etc
>
> loking for 22pf/47pf/100pf/220pf

ESR (http://esr.co.uk) stocks them, I don't think they are BC though.

You could use 680 series ceramic plate. Rapid Electronics sells them.

Leon

2695. Re: Transistorized "cascode" RF amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-05 04:36:47 UTC
From: k3bu@aol.comNoUsama
Message-ID: <20040405003647.09410.00000544@mb-m24.aol.com>
Source record: 27182

Paul OH3LWR:
>
>While you definitely need the lowest noise figure and a high gain when
>using small magnetic loops, I very much doubt that you are going to
>need the strong signal handling capabilities for these antennas. Why
>not use a dedicated preamplifier constantly attached to these
>antennas, possibly with some protection circuitry to avoid damage when
>transmitting through your nearby transmitter antenna ?
>

The idea is to have one preamp or RF stage for whole range of antennas 160 -10 or 6 m. No outboard boxes, preamps, but one good "in house" adjustable gain amp. No step or switchable attenuators either. Normal city mortals have high band noise levels, but when you go to the ocean front, use RX antennas or beam north on high bands, you need sensitivity and of course high dynamic range for the other end of the signals spectrum, like operating in Multi/multi environment.

Thanks for N6NWP article info, I will look it up.

Yuri, K3BU.us

2696. Re: Transistorized "cascode" RF amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-05 04:45:12 UTC
From: k3bu@aol.comNoUsama
Message-ID: <20040405004512.09410.00000545@mb-m24.aol.com>
Source record: 27183

>
>Do you have specific requirements? You may well be able to do fine
>with a different, simpler design. I'd submit your requirement is not
>for a cascode, but for specific TOI and perhaps harmonic performance
>and noise level and input and output impedances.
>
>Cheers,
>Tom

Low noise, high dynamic range, strong signal handling.
Again, useable for low signal RX antennas and handling strong in-band signals
like in multi/multi situations, when you want to tune/scan the same band while
transmitting on that band.
Filtering and protection is another story.

Low noise mixer is to follow, with low phase noise synthesizer.

Trying to beat K2 and Orion front ends.

Yuri, K3BU

2697. Frame - vs. Magnetic antenna ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-05 10:50:14 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <mel170haflcg17tmv4hi847r5bnt8hvt0r@4ax.com>
Source record: 27184

Hi

wonder if it is some particular difference between the terms "magnetic antenna" and "frame antenna" ? Somebody seems to have the opinion that the second is just a popular new word for the first, and it is no real difference. I would believe that a frame antenna could be a single winding antenna with high impedance connection on to the grid or gate of an amplifier or mixer, while the magnetic version has inductive coupling.

I've tested some of the latter type on 136kHz and MF, and it seems that it is no need for an amplifier to improve the signal, it only lowers the signal to noise, and possibly put too strong signal into the receiver. On 136kHz the tuning is extremely sharp, and remote control is a must, see http://home.online.no/~la8ak/L2.htm , if a large frequency range should be covered, use two varicaps should be connected in electrical-anti-paralell (not DC), it is easily possible to cover the 500-1600kHz band with remote tuning.

73
Jan-Martin
LA8AK
http://home.online.no/~la8ak/c.htm

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

2698. Re: Transistorized "cascode" RF amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-05 10:50:15 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <rgm170lhe670gs666hsn7mi53gfjhgftol@4ax.com>
Source record: 27185

On 4 Apr 2004 12:07:18 -0700, k7itm@aol.com (Tom Bruhns) wrote:

>
>Do you have specific requirements? You may well be able to do fine
>with a different, simpler design. I'd submit your requirement is not
>for a cascode, but for specific TOI and perhaps harmonic performance
>and noise level and input and output impedances.
>
>Cheers,
>Tom
>

I really suspect that it is outlined an amplifier which it is not expereinced whether it is needed or not, I believe it is no need for extra amplification below 15 or 20MHz, and since the frame antenna is relatively narrow banded it is no need for particularly good IP3 characteristics on any frequencies

Somebody once mentioned that a transistor with 50mA collector current equalled a valve amplifier with 5mA anode current in respect of IP3, wonder such is likely to be true? Suggested valve is 6761 with gm=50mmho

73
Jan-Martin
LA8AK
http://home.online.no/~la8ak/e.htm

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

2699. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-05 13:12:59 UTC
From: troglodite@aol.com
Message-ID: <20040405091259.18673.00000646@mb-m03.aol.com>
Source record: 27186

>
>By the way, talking about overload. The issue of crystals breaking has been
>mentioned a few times, but how do I measure what the crystal "sees" for
>current and what is tooo much???
>

It's not easy to measure crystal current, since it's RF current at the crystals frequency of oscillation. Most AC milliameters will stop working at about 10Khz, and the lead length and impedance will probably throw off your oscillator.

One "trick" we used in the old days, which also sometimes saved the crystal from destruction, was to put a low current pilot lamp in series with the crystal. Seems to me it was a #49, but you'd best look it up. My recollection was that this was a 60ma bulb. In normal operation it should not glow visibly.

Doug Moore KB9TMY

2700. Re: rf shieling/screened boxes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-05 15:08:06 UTC
From: John Jardine <john@jjdesigns.fsnet.co.uk>
Message-ID: <c4rs95inc1@news7.svr.pol.co.uk>
Source record: 27187

zindazenda <zen@lineisp.co.uk> wrote in message
news:1081119667.231347@smtp-1.griffin.com...
> thanks peoples...
>
> oh i get the tin plate from RS components..costs about £13 i think for 10
> sheets (300 x 400mm i think)..would have to look it up but catalogue not
> here..
>
> they do 0.2 upwards..

That's where I get mine from. I use the thin stuff as it can be hand folded by using a couple of blocks of metal. It's also easy to cut with a pair of household scissors and of course solders magnificently.
regards
john

2701. Re: Frame - vs. Magnetic antenna ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-05 16:12:14 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404050812.718d51c@posting.google.com>
Source record: 27188

I'm sure the terms must mean slightly (or more) different things to different people. To me, a "frame antenna" is a loop which is specifically rectangular (or square) like most common picture frames, but could possibly have a perimeter that's a significant fraction of a wavelength. And to me, a "magnetic antenna" (as opposed to a magnetic-mount antenna) is a loop which might be a frame or a circle, but has a perimeter which is definitely quite short compared with a wavelength, so that it has low response to electric fields. Both are "loop antennas," and the magnetic antenna is often called a magnetic loop. To be clear, you might say, "square magnetic loop" or "circular magnetic loop" or whatever, and get even more specific by calling out the perimeter in wavelengths.

Cheers,
Tom

"Jan-Martin Noeding, LA8AK" <la8ak@online.no> wrote in message news:<mel170haflcg17tmv4hi847r5bnt8hvt0r@4ax.com>...
> Hi
>
> wonder if it is some particular difference between the terms "magnetic
> antenna" and "frame antenna" ? Somebody seems to have the opinion that
> the second is just a popular new word for the first, and it is no real
> difference. I would believe that a frame antenna could be a single
> winding antenna with high impedance connection on to the grid or gate
> of an amplifier or mixer, while the magnetic version has inductive
> coupling.
>
> I've tested some of the latter type on 136kHz and MF, and it seems
> that it is no need for an amplifier to improve the signal, it only
> lowers the signal to noise, and possibly put too strong signal into
> the receiver. On 136kHz the tuning is extremely sharp, and remote
> control is a must, see http://home.online.no/~la8ak/L2.htm , if a
> large frequency range should be covered, use two varicaps should be
> connected in electrical-anti-paralell (not DC), it is easily possible
> to cover the 500-1600kHz band with remote tuning.
>
> 73
> Jan-Martin
> LA8AK
> http://home.online.no/~la8ak/c.htm
> ----
> Jan-Martin, LA8AK, N-4623 Kristiansand
> http://home.online.no/~la8ak/

2702. Re: BC components 100v ceramic disk caps

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-05 16:22:29 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404050822.350ad729@posting.google.com>
Source record: 27189

FWIW, I believe BC Components has been acquired by Vishay, so the
branding may not look like BC now, and they may no longer be listed as
BC.

Cheers,
Tom

"Leon Heller" <leon_heller@hotmail.com> wrote in message
news:<4070bcd8$0$6550$cc9e4d1f@news-text.dial.pipex.com>...
> "zindazenda" <zen@lineisp.co.uk> wrote in message
> news:1081120882.392260@smtp-1.griffin.com...
> > HELP..where can i buy them from???
> >
> > no one seems to stock them anymore!! ie RS Farnell etc
> >
> > loking for 22pf/47pf/100pf/220pf
>
> ESR (http://esr.co.uk) stocks them, I don't think they are BC though.
>
> You could use 680 series ceramic plate. Rapid Electronics sells them.
>
> Leon

2703. Antenna Tuner

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-05 18:00:16 UTC
From: Lushy <showbag@alphalink.com.au>
Message-ID: <40719d8d$1@news.alphalink.com.au>
Source record: 27190

Can someone point me to a site that has a good antenna tuner circiut/instructions on making a tuner for dipole antennas, thanks in advance.
Lushy VK3HDL AU

2704. FA: Revised Heathkit SB-620 Scanalyser Monitor Scope

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-05 20:41:11 UTC
From: Will <willbrown@nospamsympatico.ca>
Message-ID: <Lujcc.2272$BF2.357483@news20.bellglobal.com>
Source record: 27191

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=3089902768&category=4671

2705. Re: HBR-16

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-05 22:59:07 UTC
From: n2ey@aol.comSPAMNO
Message-ID: <20040405185907.19617.00000094@mb-m20.aol.com>
Source record: 27193

In article <106ugbdggtelh87@corp.supernews.com>, Tim Wescott
<tim@wescottnospamdesign.com> writes:

>Antique Electronics Supply, http://www.tubesandmore.com, has 1625s for
>$5.00 a pop.
>

I can beat that, both NOS-in-the-box and used-tested-good.

73 de Jim, N2EY

2706. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-05 22:59:08 UTC
From: n2ey@aol.comSPAMNO
Message-ID: <20040405185908.19617.00000095@mb-m20.aol.com>
Source record: 27192

In article <WApbc.14393$vo5.439031@bgtnsc05-news.ops.worldnet.att.net>,
"Paul_Morphy" <nopaul_morphy2@coolgoose.com> writes:

>" Uncle Peter" <radioconnectionNO@cox.netSPAM> wrote in message
>news:vQnbc.9210$pM1.6556@lakeread06...
>
>> I suggest he put all his radios on a shelf, and get a cell phone. No
>> dangerous
>> RF levels, no deadly voltages...
>>
>> NOT
>
>Gee, Unc, have a tough week? :> I don't want him to give up radio, I just
>don't think an Ameco AC-1 is worth the trouble.

But he does think it's worth the trouble.

>I didn't want one when I was
>15 and they were new, and I wouldn't waste my time fiddling with one now.
>
Nobody is saying *you* should. But your're saying Uwwe shouldn't. See the
contradiction?

73 de Jim, N2EY

2707. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-05 22:59:09 UTC
From: n2ey@aol.comSPAMNO
Message-ID: <20040405185909.19617.00000096@mb-m20.aol.com>
Source record: 27194

In article <BC934D8E.3680%outhouse@midcoast.com>, Uwe <outhouse@midcoast.com>
writes:

>I will just have to fiddle a bit more
>with the pi network (since at the B+ voltages suggested here my plate
>current would be way high) and I will have to live with the chirp.

Are you getting a "dip" in plate current? If not, the coil is probably too
large or too small. Unless you get a real dip, the output network isn;t right.

I have used a very similar transmitter with 350 volts on the plate, and the dip
is clean and pronounced.

>Nobody
>has complained yet anyways and maybe the chirp is worse in my receiver than
>on the air, as someone here suggested. By the way I use a Icom R75 for a
>receiver and switch the antenna off during transmit-still plenty of a signal
>seems to get into the receiver anyways.

It is quite possible that the receiver is being overloaded by the large signal
and creating a chirp.

73 de Jim, N2EY

2708. Re: Antenna Tuner

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 00:02:54 UTC
From: Marty <nospam@spamgo.com>
Message-ID: <c4ss54$ls7$1@austar-news.austar.net.au>
Source record: 27195

"Lushy" <showbag@alphalink.com.au> wrote in message
news:40719d8d$1@news.alphalink.com.au...
> Can someone point me to a site that has a good antenna tuner
> circiut/instructions on making a tuner for dipole antennas, thanks in
> advance.
> Lushy VK3HDL AU
>
>

Try doing a Google search. Just to get you started, a quick Google found
these sites:

http://users.skynet.be/on1dht/schemas/antennatuner.htm

http://www.seboldt.net/k0jd/spc.html

http://www.zianet.com/k5di/tuner.html

Hope that all helps a little

Cheers

Martin, VK2UMJ (also AU)

2709. Re: Paging Dick Rollema (PA0SE)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 01:16:44 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <r51470ddg6r4sug96snob1a2p4635m97jo@4ax.com>
Source record: 27196

My PC crashed a few months ago, could comebody please tell me the
email for PAï¿½SE ?

73

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

2710. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 01:49:22 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BC9784E1.3DE6%outhouse@midcoast.com>
Source record: 27097

in article 20040405185909.19617.00000096@mb-m20.aol.com, N2EY at
n2ey@aol.comSPAMNO wrote on 4/5/04 18:59:

> In article <BC934D8E.3680%outhouse@midcoast.com>, Uwe <outhouse@midcoast.com>
> writes:
>
>> I will just have to fiddle a bit more
>> with the pi network (since at the B+ voltages suggested here my plate
>> current would be way high) and I will have to live with the chirp.
>
> Are you getting a "dip" in plate current? If not, the coil is probably too
> large or too small. Unless you get a real dip, the output network isn;t right.
>
> I have used a very similar transmitter with 350 volts on the plate, and the
> dip
> is clean and pronounced.

Jim, the original docs I got for this tx call, at 40 m, for a 15 turn coil
on the coil form provided with the kit, which I hear was 1.25" diameter.
If I use the formula for air coils this turns out to be roughly a 22
microhenry coil.

The coil which works best with my tx is 8 turns on a 1,125" ceramic core.

To get guess work out of it I just bought and built a L/C meter and
measured my coil to have 2.7 microhenry. So I am way off, but it works, sort
of.

The air caps are 36 to 420pf at the plate and 15 to 728pf at the antenna, so
that seem right.

All this happens with B+200V and 35 mA plate current.

Older ARRL handbooks give typical values for pi network for 50 Ohm antenna
loads and my values are in range for the caps but my coil is too small.

The ouput voltage on my antenna measured with a scope is up to 75 volts peak
to peak, with a 50 Ohm load that would mean I get more out of the tx than I
put into it and I am not of the sort who says this might happen.

So my conclusion is, and tell me if this sounds right, that I have an
antenna which is far from 50 ohm resistive at 40m and that that makes
everything weird.
The dips in plate current are nearly imperceptible and they are not aided by
my 250mA full scale meter. They may be 2 or 3 mA.
I tune with the help of my scope.

73

Uwe

2711. Anechoic Material

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 02:12:25 UTC
From: vishadgarg@rediffmail.com
Message-ID: <f338508.0404051812.581e9fec@posting.google.com>
Source record: 27098

ou can get anechoic materials from K.V. Microwave

http://www.geocities.com/microwaveabsorber/
or
http://www.geocities.com/vishadgarg/

2712. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 03:33:06 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <Sxpcc.43482$He5.837410@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27099

"Uwe" <outhouse@midcoast.com> wrote in message
news:BC9784E1.3DE6%outhouse@midcoast.com...

> The dips in plate current are nearly imperceptible and they are not aided
by
> my 250mA full scale meter. They may be 2 or 3 mA.
> I tune with the help of my scope.

The pi network should be able to match a wide range of impedances but it would help to connect a known resistive load. Five, 2-watt, 270-ohm resistors in parallel would be close enough. If you're getting a dip in plate current the circuit is resonating somewhere, and you say you've worked people, so it's putting some rf on the band.

See if you're getting two dips. A lot of those pi networks would resonate on the operating band with the plate tuning cap almost completely meshed, but there was enough range in the cap that it would also tune to the second harmonic. If your LC meter is right you may be dipping at a harmonic, not the fundamental.

OTOH, if your calculation of what the original coil was is correct, the plate tuning capacitor should resonate when its value is about 20 pF -- for a 22-uH coil. That doesn't mesh with the range of your plate tuning cap. A 2.7 uH coil would resonate with the plate tuning cap at about 185 pF, which seems more reasonable.

This is one of those rare occasions when a grid-dip meter is handy. Is there a ham club in your area? Someone may have one to lend. Meanwhile, hook it up to a dummy load and see what you get.

There's something else you could try, but I don't know how well it would work. With the AC-1 unplugged you could connect your receiver antenna to the top of the plate tuning cap and adjust the plate tuning cap while listening for a peak in the noise level. That would tell you the circuit was resonating at 7 MHz. If NG, try 20 meters and 10 meters.

In the olden days I had a 6BE6 connected inside my Viking Valiant, such that it turned on and bridged the receiver antenna input when transmitted rf appeared at the grid. When the key was up, rf from the antenna passed into the receiver. This allowed for full break-in CW, and I could dip the plate tuning cap just by listening to the noise level. Real handy when moving around the band in a contest. You would probably pop the front end of a solid-state receiver doing this, so don't try it. The circuit was in an old Radio Handbook, which was edited by Bill Orr, W6SAI. That's what made me think that you could try this with your receiver, but exercise appropriate caution.

You know, I think you can get coil forms to fit your rig from Antique Radio Supply, and also maybe Ocean State Electronics (oselectronics.com). You could even make one for 30 meters. Ocean State has a power transformer in their catalog that may do for a power supply for your rig, too. Or look for an old tube-type hi-fi receiver in a thrift shop or at a tag sale. If you're going to do, you may as well do it! :>

73,

"PM"

2713. Re: Anechoic Material

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 03:53:58 UTC
From: linguine@noodlefactory.com
Message-ID: <7u747091d9243ag0ddehrfkaips3hn4sn9@4ax.com>
Source record: 27100

The great American dream:

All those people swimming back to India with a pointy haired manager
under each arm.

On 5 Apr 2004 19:12:25 -0700, vishadgarg@rediffmail.com (Vishad)
wrote:

>ou can get anechoic materials from ...
>
>...

2714. I receive voices from hell with my radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 04:56:11 UTC
From: hank2018151212@yahoo.com.au
Message-ID: <3963ecce.0404052056.48e26d8e@posting.google.com>
Source record: 27101

This is true, I build a special radio that receives voices from hell, you can hear people crying in pain, you can year devils and demons singing gruesome songs that torture the damned.

These voices are really evil.If you want to receive hell 666, too, just contact me.

2715. Re: I receive voices from hell with my radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 08:56:56 UTC
From: Leon Heller <leon_heller@hotmail.com>
Message-ID: <407270de$0$3300$cc9e4d1f@news-text.dial.pipex.com>
Source record: 27102

"Hank Higgens" <hank2018151212@yahoo.com.au> wrote in message
news:3963ecce.0404052056.48e26d8e@posting.google.com...
> This is true, I build a special radio that receives voices from hell,
> you can hear people crying in pain, you can year devils and demons
> singing gruesome songs that torture the damned.
>
> These voices are really evil.If you want to receive hell 666, too,
> just contact me.

Are you working on a transmitter? You could have a conversation with the
souls of the damned, devils, etc.

Leon

2716. Re: I receive voices from hell with my radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 09:06:34 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <mvr470lb891fkiok69ibhq5on35m36i5h0@4ax.com>
Source record: 27103

On 5 Apr 2004 21:56:11 -0700, hank2018151212@yahoo.com.au (Hank
Higgens) wrote:

>This is true, I build a special radio that receives voices from hell,
>you can hear people crying in pain, you can year devils and demons
>singing gruesome songs that torture the damned.

You don't need a special radio for that. Just listen to rap music!

2717. Re: I receive voices from hell with my radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 12:37:54 UTC
From: JLB <IHateSpam@nospam.net>
Message-ID: <mwxcc.10144$Em4.4238@fe03.usenetserver.com>
Source record: 27104

There is a Hell, MI (honest! look it up if you don't beleive me), but I
think it is too small to support a broadcast station.

Jim
"Paul Burridge" <pb@notthisbit.osiris1.co.uk> wrote in message
news:mvr470lb891fkiok69ibhq5on35m36i5h0@4ax.com...
> On 5 Apr 2004 21:56:11 -0700, hank2018151212@yahoo.com.au (Hank
> Higgens) wrote:
>
> >This is true, I build a special radio that receives voices from hell,
> >you can hear people crying in pain, you can year devils and demons
> >singing gruesome songs that torture the damned.
>
> You don't need a special radio for that. Just listen to rap music!

2718. Filament Choke

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 13:06:04 UTC
From: w3fjj@aol.com
Message-ID: <20040406090604.04398.00000765@mb-m05.aol.com>
Source record: 27105

Hi,

The filiment chokes i've seen had enamel wire
Does it matter? or will number 10 gauge solid house wire be ok
for a bifilar wound choke on ferrite rod?

TIA, Chuck (W3FJJ)

2719. Re: I receive voices from hell with my radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 13:42:22 UTC
From: xpyttl <xpyttl_NOSPAM@earthling.net>
Message-ID: <1075d7t74nqhhd7@corp.supernews.com>
Source record: 27106

"JLB" <IHateSpam@nospam.net> wrote in message
news:mwxcc.10144$Em4.4238@fe03.usenetserver.com...
> There is a Hell, MI (honest! look it up if you don't beleive me), but I
> think it is too small to support a broadcast station.

No broadcast stations, but the FCC database shows 5 amateurs in Hell,
Michigan.

For those of you searching your maps, it's right between Chalkerville and
Pinkney.

..

2720. Re: I receive voices from hell with my radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 13:56:06 UTC
From: JLB <IHateSpam@nospam.net>
Message-ID: <HFycc.10372$Em4.9117@fe03.usenetserver.com>
Source record: 27107

The original post was not clear as to what frequency he was hearing the voices on. Was it 75 meters? Sounds to me like a normal band opening on 75.

Hmmm, I wonder how many Hams there are in Paradise, MI?

Jim
N8EE

"xpyttl" <xpyttl_NOSPAM@earthling.net> wrote in message news:1075d7t74nqhhd7@corp.supernews.com...
> "JLB" <IHateSpam@nospam.net> wrote in message
> news:mwxcc.10144$Em4.4238@fe03.usenetserver.com...
> > There is a Hell, MI (honest! look it up if you don't beleive me), but I
> > think it is too small to support a broadcast station.
>
> No broadcast stations, but the FCC database shows 5 amateurs in Hell,
> Michigan.
>
> For those of you searching your maps, it's right between Chalkerville and
> Pinkney.
>
> ..
>
>

2721. Chicago Transformer MOD trans CMS-1 Specs Wanted:

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 15:42:11 UTC
From: yardleyite@aol.com
Message-ID: <20040406114211.05177.00000720@mb-m05.aol.com>
Source record: 27108

Hi All
Looking for information and hook up specs for a Chicago Transformer MOD trans CMS-1

Any information will be greatly appreciated. Please email : yardleyite@aol.com directly.
Mod-U-Later,
Joe Cro N3IBX

2722. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 16:29:06 UTC
From: N2EY@AOL.COM
Message-ID: <c2356669.0404060829.290c710d@posting.google.com>
Source record: 27109

Uwe <outhouse@midcoast.com> wrote in message news:<BC9784E1.3DE6%outhouse@midcoast.com>...
> in article 20040405185909.19617.00000096@mb-m20.aol.com, N2EY at
> n2ey@aol.comSPAMNO wrote on 4/5/04 18:59:
>
> > In article <BC934D8E.3680%outhouse@midcoast.com>, Uwe <outhouse@midcoast.com>
> > writes:
> >
> >> I will just have to fiddle a bit more
> >> with the pi network (since at the B+ voltages suggested here my plate
> >> current would be way high) and I will have to live with the chirp.
> >
> > Are you getting a "dip" in plate current? If not, the coil is probably too
> > large or too small. Unless you get a real dip, the output network isn;t right.
> >
> > I have used a very similar transmitter with 350 volts on the plate, and the
> > dip
> > is clean and pronounced.
>
>
> Jim, the original docs I got for this tx call, at 40 m, for a 15 turn coil
> on the coil form provided with the kit, which I hear was 1.25" diameter.
> If I use the formula for air coils this turns out to be roughly a 22
> microhenry coil.

22 microhenries? I get more like 8 microhenries using the formula

L = (a * a * n * n)/([9 * a] + [10 * b])

where
a = radius of coil in inches
b = length of winding in inches
n = number of turns

> The coil which works best with my tx is 8 turns on a 1,125" ceramic core.

But do you get a dip?

Be aware that the AC-1 went through some changes in its lifetime. Some
models used a filter choke, others did not. Some used a 730 uuf
loading capacitor, others just a single-section 365 uuf one. Coils
changed too.

> To get guess work out of it I just bought and built a L/C meter and
> measured my coil to have 2.7 microhenry. So I am way off, but it works, sort
> of.
>

> The air caps are 36 to 420pf at the plate and 15 to 728pf at the antenna, so
> that seem right.
>
> All this happens with B+200V and 35 mA plate current.
>

LC = 25,330/(f * f)

so for 7 MHz, the LC constant is 516. Your 2.7 uH coil should resonate
with 191 uuf.
>
> Older ARRL handbooks give typical values for pi network for 50 Ohm antenna
> loads and my values are in range for the caps but my coil is too small.
>
> The ouput voltage on my antenna measured with a scope is up to 75 volts peak
> to peak, with a 50 Ohm load that would mean I get more out of the tx than I
> put into it and I am not of the sort who says this might happen.
>
> So my conclusion is, and tell me if this sounds right, that I have an
> antenna which is far from 50 ohm resistive at 40m and that that makes
> everything weird.

That's defintitely part of the problem. What antenna are you using?
Have you tried a resistor or lamp load?

> The dips in plate current are nearly imperceptible and they are not aided by
> my 250mA full scale meter. They may be 2 or 3 mA.
> I tune with the help of my scope.

The meter tells more. You can use a pilot light (#47, 150 mA) instead
of a meter.

Sudden thought: Where is the meter connected? Are you reading plate
current, or plate-and-screen current combined?

Here's something else to try:

Often trouble of this sort is due to the RF choke used. What RFCs are
you suing, particularly in the plate circuit? Although the LC meter
may say they are a certain L, in real life they may have all sorts of
unwanted resonances.

To test this idea out, do the following:

- Remove the plate RFC
- Connect the antenna end of the plate coil to the B+ where the RFC
used to be connected. This point should already be bypassed to ground
through a disk capacitor of about .01 uF
- Disconnect the "loading" capacitor
- Remove the plate coupling capacitor.

What you will then have is the 200 volts being fed to the plate
through the coil, with one end of the coil going to the plate supply
and the other end connected directly to the plate of the 6V6. The

plate tuning capacitor is connected between the plate of the 6V6 and ground.

End result is no plate RFC and a parallel resonant circuit. There's no connection for an antenna yet, but that's not important right now.

Test out the rig and look for the plate current dip. It should be very obvious because there is no load connected.

This is just a temporary setup to see if the RFC is OK.

73 es GL de Jim, N2EY

2723. Re: Filament Choke

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 16:42:02 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <4072DDDA.25072D8E@rica.net>
Source record: 27110

W3FJJ wrote:
>
> Hi,
>
> The filiment chokes i've seen had enamel wire
> Does it matter? or will number 10 gauge solid house wire be ok
> for a bifilar wound choke on ferrite rod?
>
> TIA, Chuck (W3FJJ)

It might work, but it will not perform as well as if made with wire
with thinner insulation. You will not be able to get as many turns of
wire on the rod, and those turns will not be coupled together as well.

--
John Popelish

2724. Re: I receive voices from hell with my radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 17:07:12 UTC
From: wa5bdu@yahoo.com
Message-ID: <ca1a467b.0404060907.5bcbdeea@posting.google.com>
Source record: 27111

I suspect it's either 75 meter SSB or BPL. Or you're trying to do ham radio with a Hallicrafters S-120, as I did 42 years ago.

The late George Harrison said (in song) that gossip is the Devil's Radio.

73-Nick

hank2018151212@yahoo.com.au (Hank Higgens) wrote in message news:<3963ecce.0404052056.48e26d8e@posting.google.com>...
> This is true, I build a special radio that receives voices from hell,
> you can hear people crying in pain, you can year devils and demons
> singing gruesome songs that torture the damned.
>
> These voices are really evil.If you want to receive hell 666, too,
> just contact me.

2725. Re: Chicago Transformer MOD trans CMS-1 Specs Wanted:

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 17:38:22 UTC
From: Wes Stewart <n7ws@_arrl.net>
Message-ID: <8nq570puv20g4m6kre7ce88vrjfu55agd6@4ax.com>
Source record: 27112

See:

http://www.qsl.net/n7ws/cms-1.pdf

On 06 Apr 2004 15:42:11 GMT, yardleyite@aol.com (Yardleyite) wrote:

|Hi All
|Looking for information and hook up specs for a Chicago Transformer MOD trans
|CMS-1
|
|Any information will be greatly appreciated. Please email : yardleyite@aol.com
|directly.
| Mod-U-Later,
| Joe Cro N3IBX

2726. FA: spreaders + many other parts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 19:32:31 UTC
From: Heytubeguy <heytubeguy@worldnet.att.net>
Message-ID: <jBDcc.27948$vo5.884176@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27113

SEE AT

http://cgi6.ebay.com/ws/eBayISAPI.dll?ViewSellersOtherItems&userid=heytubeguy&completed=0&sort=3&since=-1&include=0&page=1&rows=25

TNX, Heytubeguy

2727. Re: I receive voices from hell with my radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 20:34:44 UTC
From: David Murphy <ROT13tyvoqhq@ubgznvy.pbz>
Message-ID: <pan.2004.04.06.20.34.44.86927@ubgznvy.pbz>
Source record: 27114

On Tue, 06 Apr 2004 09:56:06 -0400, JLB wrote:
> The original post was not clear as to what frequency he was hearing the
> voices on. Was it 75 meters? Sounds to me like a normal band opening on
> 75.
>
>
> Hmmm, I wonder how many Hams there are in Paradise, MI?
>
> Jim
> N8EE

(Apologies in advance, but I couldn't resist.)

Some might argue that Paradise is in Climax, MI.

David Murphy
AB8SO

2728. FullDuplex like 10Ghz gunn.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 20:40:22 UTC
From: pbreed@netburner.com
Message-ID: <u05670dpn33fmcf7752dcm5did3l0skje3@4ax.com>
Source record: 27115

I've seen a bunch of cases where a 10Ghz gunn
diode was used for full duplex, with a split IF.

Has any one seen a similar scheme work at lower frequencies?

I want to create a small and light weight full duplex data radio.
This is for my RC powered solar plane.

So one end of the link will be airborne and the other end will be fixed.

I'd like to aceive:
20 to 40 miles LOS range.
9600 baud data throughput.
<1W TX power. (To comply with FCC Ameateur RC control rules.)
<1W total airborne power. (To minimize power loading)
Very light weight.

Tracking gain antenna is ok on the ground side.
Airborne antenna needs to be omni.

Any ideas or thoughts?

Paul (KL7JG)

2729. Air-dielectric variable capacitors

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 21:02:49 UTC
From: David Murphy <ROT13tyvoqhq@ubgznvy.pbz>
Message-ID: <pan.2004.04.06.21.02.48.347005@ubgznvy.pbz>
Source record: 27116

Hey folks. I've had my license for just a couple of weeks now. The only equipment I have at the moment is a Ramsey 2m receiver kit I bought years ago. Largely for economic reasons, I'm attempting to build a 40m SSB receiver from schematics in the ARRL Handbook. The first item I'm looking for is the tuning capacitor. I searched through the list of distributors from ARRL's site, and found some candidates in Antique Electric Supply's catalog. Here are the notes:

* Ball bearing mounted shaft
* Gear drive vernier
* 1/4" flatted shaft
* Body is 1-1/4" high x 1-1/8" wide by 1-7/8" long.
* 15 plate section @ 200 pf with trimmer
* 5 plate section @ 30 pf with trimmer
* 13 plate section @ 85 pf with trimmer
* 5 plate section @ 25 pf (no trimmer)

They're priced right ($6 each), but I'm brand new to this, so I want to verify that I can use these. The schematic calls for a 30pF cap. For multi-section caps like these, are the sections isolated from each other to effectively be their own component? In other words, can I just hook up the 30pF 5-plate section and leave the rest alone? (And for future reference, could I hook multiple sections in parallel to create additional capacity possibilities?)

Thanks,
David Murphy
AB8SO

2730. Re: Air-dielectric variable capacitors

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 22:12:33 UTC
From: dplatt@radagast.org
Message-ID: <1076aqh907a0q03@corp.supernews.com>
Source record: 27117

>* Ball bearing mounted shaft
>* Gear drive vernier
>* 1/4" flatted shaft
>* Body is 1-1/4" high x 1-1/8" wide by 1-7/8" long.
>* 15 plate section @ 200 pf with trimmer
>* 5 plate section @ 30 pf with trimmer
>* 13 plate section @ 85 pf with trimmer
>* 5 plate section @ 25 pf (no trimmer)
>
>They're priced right ($6 each), but I'm brand new to this, so I want to
>verify that I can use these. The schematic calls for a 30pF cap. For
>multi-section caps like these, are the sections isolated from each other
>to effectively be their own component?

Typically they have one set of plates in common (usually the ones
attached to the rotating stator). Each section has a second set of
plates, insulated from the frame and from the other sections.

> In other words, can I just hook up
>the 30pF 5-plate section and leave the rest alone?

Yes - use the (common) stator connection, and the connection
for that one section's isolated plates. There may be a very small
amount of parasitic capacitance between the section you're using and
other sections - it's probably not enough to matter in any way.

> (And for future
>reference, could I hook multiple sections in parallel to create additional
>capacity possibilities?)

Yes.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

2731. Re: I receive voices from hell with my radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 22:54:07 UTC
From: Eamon Skelton <Xnospam@oceanfree.net>
Message-ID: <pan.2004.04.06.22.54.07.929822@oceanfree.net>
Source record: 27121

On Mon, 05 Apr 2004 21:56:11 -0700, Hank Higgens wrote:

> This is true, I build a special radio that receives voices from hell, you
> can hear people crying in pain, you can year devils and demons singing
> gruesome songs that torture the damned.

Sounds like 40M on a Saturday. Ooooooooooolaaaaa,
Hellllloooooo Raaaaadiooooo.....

73, Ed, EI9GQ.

--
Remove 'X' to reply by E-mail.
Linux 2.6.5

2732. Re: Magnet wire vs. enamelled copper wire

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 23:16:36 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c4vdsb$29o$1@newshost.mot.com>
Source record: 27118

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:106vj34qhpapse1@corp.supernews.com...
> Bob gave a very good explanation. ..."enameled wire" and "magnet wire" are
often
> used interchangeably.
>
> Roy Lewallen, W7EL
>
> Bob wrote:

There is/was also a type called something like "solder-ease". The
spelling may be different and it may be a trade name. It was easily removed
with the heat of a soldering iron. You just tried to solder it as usual and
the insulating coating melted away after a few seconds.

Search on that name...see it U get any hits.

I didn't get any hits on:
Soldereze soldereaze solderease solderese
--
Steve N, K,9;d, c. i My email has no u's.

2733. Re: radio receiver "alignment"

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 23:25:50 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c4vedl$2gp$1@newshost.mot.com>
Source record: 27120
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"Jeff Liebermann" <jeffl@comix.santa-cruz.ca.us> wrote in message
news:pdi0709k302eafn1bqavbnl9envmo0he5e@4ax.com...

> ....I've been into radio and electronics since I was about 15
> years old. ....

>
> Circuit boards were often found with the parts I needed, but
> unsoldering was tedious.

>... I
> clamped one edge of a circuit board into the bench vice on my fathers
> workbench, heated the solder side with a propane torch, pulled back on
> the board to apply tension, and released the board when the solder
> sorta melted. Parts, pieces, and solder would spray all over the
> place. ...
> Jeff Liebermann

Too Cool!

Torch and pliers with through-hole. Just pull off what you want.

When I was pre-teen I needed some wire. I found some...it was on the coil
of my dad's T/R relay...on the rig he had been using! I think it was a
common "telephone" relay, so not a really big deal to replace the coil, but
he had a fast break-in system using these relays and it probably was
carefully adjusted to sequence the contacts for Rx, Tx and antenna
switching. Don't remember the consequences. Maybe the concussion wiped
out that memory (just kidding).
--
Steve N, K,9;d, c. i My email has no u's.

2734. Re: Air-dielectric variable capacitors

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-06 23:34:41 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c4veu8$2l2$1@newshost.mot.com>
Source record: 27119

"David Murphy" <ROT13tyvoqhq@ubgznvy.pbz> wrote in message
news:pan.2004.04.06.21.02.48.347005@ubgznvy.pbz...
> Hey folks. I've had my license for just a couple of weeks now. The only
> equipment I have at the moment is a Ramsey 2m receiver kit I bought years
> ago. Largely for economic reasons, I'm attempting to build a 40m SSB
> receiver from schematics in the ARRL Handbook. The first item I'm looking
> for is the tuning capacitor. .....

Try Dan's for parts. He shows a lot of older type parts.

http://www.danssmallpartsandkits.net/

--
Steve N, K,9;d, c. i My email has no u's.

2735. Re: I receive voices from hell with my radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 00:01:36 UTC
From: Bill Hennessy <elhen704@yahoo.com>
Message-ID: <407344E0.2010401@yahoo.com>
Source record: 27122

JLB wrote:
> There is a Hell, MI (honest! look it up if you don't beleive me), but I
> think it is too small to support a broadcast station.
>
> Jim
> "Paul Burridge" <pb@notthisbit.osiris1.co.uk> wrote in message
> news:mvr470lb891fkiok69ibhq5on35m36i5h0@4ax.com...
>
>>On 5 Apr 2004 21:56:11 -0700, hank2018151212@yahoo.com.au (Hank
>>Higgens) wrote:
>>
>>
>>>This is true, I build a special radio that receives voices from hell,
>>>you can hear people crying in pain, you can year devils and demons
>>>singing gruesome songs that torture the damned.
>>
>>You don't need a special radio for that. Just listen to rap music!
>
>
>
>
Was it a governmrnt broadcast?

2736. Re: HBR-16

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 01:47:28 UTC
From: Brian Hill <releif@last.net>
Message-ID: <1076ndlbemmka61@corp.supernews.com>
Source record: 27123

Well guys, it looks like the Eddystone dials are made of gold on Ebay. $68 & $102. That's a little steep. I guess I'll keep trying. I got the chassis broke last weekend.

--
73 Brian
Brian's Radio Universe
http://webpages.charter.net/brianehill/

2737. One Antenna from Two Coax Cables

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 02:46:19 UTC
From: BW <bwellman00@comcast.net>
Message-ID: <w-SdnSmKXsLi9u7dRVn-jA@comcast.com>
Source record: 27124

I am putting a VHF/UHF antenna in my attic and have run coax into two different rooms in the house. I would like to be able to access the antenna, on both bands, from both rooms in the house (not at the same time, however). Is there a "remote" way I can do this, meaning without running any more wires? I have been searching for an rf triggered relay that would ground the second coax when a signal came down the first, but I can't find anything like that. A duplexer won't work because I want to be able to access both bands from both rooms. Certainly there is someone else in this hobby who has done this, but I can't find anything on the Internet about it!

ANY suggestions would be welcome.

73,
Brett
KG4KLR

2738. building a duplexer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 03:48:58 UTC
From: Jeremy Salch <salchNOSPAM@tblx.net>
Message-ID: <c4vto6$1lfn08$2@ID-225834.news.uni-berlin.de>
Source record: 27125

Does anyone have plans or a website that has plans for building a duplexer
with 2m / HF inputs ?

--
Registered Linux User #346565

2739. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 04:01:19 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <j2Lcc.50205$He5.966018@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27126

"N2EY" <N2EY@AOL.COM> wrote in message
news:c2356669.0404060829.290c710d@posting.google.com...
>
> This is just a temporary setup to see if the RFC is OK.

My recollection is hazy but I seem to recall that when the loading cap was
open too far for the load the pi net was seeing, the dip got very shallow.
I'll bet his antenna is outside the range it can match. Time for Uwe to
gather up some of that coil-winding stuff and make a tuner.

73,

"PM"

2740. Re: building a duplexer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 04:44:52 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <8HLcc.50402$He5.970794@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27127

"Jeremy Salch" <salchNOSPAM@tblx.net> wrote in message
news:c4vto6$1lfn08$2@ID-225834.news.uni-berlin.de...
>
>
> Does anyone have plans or a website that has plans for building a duplexer
> with 2m / HF inputs ?

A duplexer is a set of quarter-wavelength sections of transmission line. On
10 meters your duplexer elements would be about eight feet tall. Are you
sure you want one for HF?

If you google for "2 meter duplexer" you will find quite a few plans on
websites. Most people avoid the trouble of making their own and just buy a
set.

"PM"

2741. Re: building a duplexer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 04:56:48 UTC
From: Jeremy Salch <salchNOSPAM@tblx.net>
Message-ID: <c501nc$1lfn08$3@ID-225834.news.uni-berlin.de>
Source record: 27128

Paul_Morphy wrote:

>
> "Jeremy Salch" <salchNOSPAM@tblx.net> wrote in message
> news:c4vto6$1lfn08$2@ID-225834.news.uni-berlin.de...
>>
>>
>> Does anyone have plans or a website that has plans for building a
duplexer
>> with 2m / HF inputs ?
>
> A duplexer is a set of quarter-wavelength sections of transmission line.
On
> 10 meters your duplexer elements would be about eight feet tall. Are you
> sure you want one for HF?
>
> If you google for "2 meter duplexer" you will find quite a few plans on
> websites. Most people avoid the trouble of making their own and just buy a
> set.
>
> "PM"

I have one which has a input for 0-90Mhz then 120-500Mhz on the other side,
and it puts them both onto one coax line. Is that called a duplexer as well
or is it called something else ?

--
Registered Linux User #346565

2742. Re: building a duplexer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 08:39:01 UTC
From: mike@corn2.freeserve.co.uk
Message-ID: <4073bd42.522407821@news.freeserve.net>
Source record: 27129

On Tue, 06 Apr 2004 23:56:48 -0500, Jeremy Salch
<salchNOSPAM@tblx.net> wrote:

>Paul_Morphy wrote:
>
>>
>> "Jeremy Salch" <salchNOSPAM@tblx.net> wrote in message
>> news:c4vto6$1lfn08$2@ID-225834.news.uni-berlin.de...
>>>
>>>
>>> Does anyone have plans or a website that has plans for building a
>duplexer
>>> with 2m / HF inputs ?
>>
>> A duplexer is a set of quarter-wavelength sections of transmission line.
>On
>> 10 meters your duplexer elements would be about eight feet tall. Are you
>> sure you want one for HF?
>>
>> If you google for "2 meter duplexer" you will find quite a few plans on
>> websites. Most people avoid the trouble of making their own and just buy a
>> set.
>>
>> "PM"
>
>I have one which has a input for 0-90Mhz then 120-500Mhz on the other side,
>and it puts them both onto one coax line. Is that called a duplexer as well
>or is it called something else ?
>
I've seen them called 'splitters' or 'combiners'or 'diplexers' before
now, perhaps not accuratley, but it is what they do.

2743. Re: FullDuplex like 10Ghz gunn.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 10:09:14 UTC
From: Scott <acepilot@bloomer.net>
Message-ID: <kkRcc.840$KG2.1567@reggie.win.bright.net>
Source record: 27132

How big is the plane that you can see it from 20-40 miles? Is it the
Spruce Goose or what? Are you trying to make an RPV for the military?
Why do you need full duplex? Are you just trying to collect data from
the airplane? I'd have to double check, but I don't believe it's legal
to "control" the plane on 10 GHz.

Scott

pbreed@netburner.com wrote:

> I've seen a bunch of cases where a 10Ghz gunn
> diode was used for full duplex, with a split IF.
>
> Has any one seen a similar scheme work at lower frequencies?
>
> I want to create a small and light weight full duplex data radio.
> This is for my RC powered solar plane.
>
> So one end of the link will be airborne and the other end will be fixed.
>
> I'd like to aceive:
> 20 to 40 miles LOS range.
> 9600 baud data throughput.
> <1W TX power. (To comply with FCC Ameateur RC control rules.)
> <1W total airborne power. (To minimize power loading)
> Very light weight.
>
> Tracking gain antenna is ok on the ground side.
> Airborne antenna needs to be omni.
>
>
> Any ideas or thoughts?
>
>
> Paul (KL7JG)
>
>
>
>
>
>
>
>
>

2744. Re: Air-dielectric variable capacitors

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 10:30:29 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c50l85$o5k$1@hercules.btinternet.com>
Source record: 27130

In some applications the working or breakdown voltage may matter.

Don't forget the working or breakdown volts, or the spacing between plates.

Reg G4FGQ

2745. Re: One Antenna from Two Coax Cables

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 10:45:45 UTC
From: Rv! <no@spam.here.thanks>
Message-ID: <1081334745.10616.0@echo.uk.clara.net>
Source record: 27131

How about this untried idea.

A latching relay.. switched by a battery in the loft.
When you PTT up coax 1 a transistor is biassed to pull
the relay across to that coax and disconnecting the other
coax. I larg-ish electrolytic capacitor and resistor in
parallel as the relay sink, so the relay current drops off
to almost nil once it's changed. This would reduce overall
current drawn from the battery.

I wonder if something like that would work well?

Rv!

2746. Re: building a duplexer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 12:32:14 UTC
From: Dale Parfitt <par@parelectronics.com>
Message-ID: <ixScc.8290$bd4.4895@nwrddc01.gnilink.net>
Source record: 27133

"Jeremy Salch" <salchNOSPAM@tblx.net> wrote in message
news:c4vto6$1lfn08$2@ID-225834.news.uni-berlin.de...
>
>
> Does anyone have plans or a website that has plans for building a duplexer
> with 2m / HF inputs ?
>
>
>
> --
The proper term is diplexer

W4OP>

2747. Re: building a duplexer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 13:39:58 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <OwTcc.52744$He5.1011605@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27134

"Jeremy Salch" <salchNOSPAM@tblx.net> wrote in message
news:c501nc$1lfn08$3@ID-225834.news.uni-berlin.de...

> I have one which has a input for 0-90Mhz then 120-500Mhz on the other
side,
> and it puts them both onto one coax line. Is that called a duplexer as
well
> or is it called something else ?

'Duplexer' is a term used to describe devices that provide greater isolation between the ports than what you seem to have. They are used on repeater stations where the transmitter and receiver operate simultaneously on frequencies close together. The transmitter is producing anywhere from a few watts to several hundred watts, and the receiver cannot be 'desensed.' The duplexer acts as a sharp filter as well as a combiner, allowing both units to use the same antenna.

There are other names for similar devices, which vary in sophistication. The simple TV-antenna splitter allows two receivers to use a common antenna, but you don't get much isolation between the output ports and you wouldn't transmit much power through one. There are power splitters and combiners that you can buy or build. As you have not stated the application it is impossible to tell you what you need. Could you be more specific about what it is that you are intending to do with this device?

"PM"

2748. Re: I receive voices from hell with my radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 18:13:49 UTC
From: Tom Sevart <n2uhc.spam@yahoo.com>
Message-ID: <c51g2j$2co71t$1@ID-52518.news.uni-berlin.de>
Source record: 27135

"JLB" <IHateSpam@nospam.net> wrote in message
news:HFycc.10372$Em4.9117@fe03.usenetserver.com...
> The original post was not clear as to what frequency he was hearing the
> voices on. Was it 75 meters? Sounds to me like a normal band opening on
> 75.

Or 27.185 MHZ.

--
Tom Sevart N2UHC
Frontenac, KS
http://www.geocities.com/n2uhc

2749. Re: I receive voices from hell with my radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 19:21:16 UTC
From: Martin <marty2kay@earthlink.not>
Message-ID: <MwYcc.634$zj3.378@newsread3.news.atl.earthlink.net>
Source record: 27136

"David Murphy" <ROT13tyvoqhq@ubgznvy.pbz> wrote in message
news:pan.2004.04.06.20.34.44.86927@ubgznvy.pbz...
> On Tue, 06 Apr 2004 09:56:06 -0400, JLB wrote:
> > The original post was not clear as to what frequency he was hearing the
> > voices on. Was it 75 meters? Sounds to me like a normal band opening
on
> > 75.
> >
> >
> > Hmmm, I wonder how many Hams there are in Paradise, MI?
> >
> > Jim
> > N8EE
>
> (Apologies in advance, but I couldn't resist.)
>
> Some might argue that Paradise is in Climax, MI.
>
> David Murphy
> AB8SO

No. You have to get there through Intercourse, PA. That's 5 mi north of
Paradise, PA. Honest.

2750. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 20:33:25 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BC99DDD3.3F3B%outhouse@midcoast.com>
Source record: 27137

in article c2356669.0404060829.290c710d@posting.google.com, N2EY at
N2EY@AOL.COM wrote on 4/6/04 12:29:

> Uwe <outhouse@midcoast.com> wrote in message
> news:<BC9784E1.3DE6%outhouse@midcoast.com>...
>> in article 20040405185909.19617.00000096@mb-m20.aol.com, N2EY at
>> n2ey@aol.comSPAMNO wrote on 4/5/04 18:59:
>>
>>> In article <BC934D8E.3680%outhouse@midcoast.com>, Uwe
>>> <outhouse@midcoast.com>
>>> writes:
>>>
>>>> I will just have to fiddle a bit more
>>>> with the pi network (since at the B+ voltages suggested here my plate
>>>> current would be way high) and I will have to live with the chirp.
>>>
>>> Are you getting a "dip" in plate current? If not, the coil is probably too
>>> large or too small. Unless you get a real dip, the output network isn;t
>>> right.
>>>
>>> I have used a very similar transmitter with 350 volts on the plate, and the
>>> dip
>>> is clean and pronounced.
>>
>>
>> Jim, the original docs I got for this tx call, at 40 m, for a 15 turn coil
>> on the coil form provided with the kit, which I hear was 1.25" diameter.
>> If I use the formula for air coils this turns out to be roughly a 22
>> microhenry coil.
>
> 22 microhenries? I get more like 8 microhenries using the formula
>
> L = (a * a * n * n)/([9 * a] + [10 * b])
>
> where
> a = radius of coil in inches
> b = length of winding in inches
> n = number of turns
>

Well, the way I use the formula is 1.25*1.25*15*15/((9*1.25)+(10*0.45)) =
351.5/15.75 = 22.3

0.45 is the length of the 15 windings.

Do I not use the formula properly??

My meter is built into my bench power supply (thats why it reads up to 250mA), so I am measuring plate and screen current.

I put in a second meter which would only measure the plate current but its reading is practicly identical to the first one, as if there was no grid current.

My antenna is a dipole of about 75ft. length each side, connected with a 50 ohm coax, no balun or such things.

I will need a few days to try out some of the things you and also Paul suggested and it might really be a good idea to get an SWR meter and a tuner.

All in due time and I will surely get back to you.

Thanks for the help

Uwe

>> The coil which works best with my tx is 8 turns on a 1,125" ceramic core.
>
> But do you get a dip?
>
> Be aware that the AC-1 went through some changes in its lifetime. Some
> models used a filter choke, others did not. Some used a 730 uuf
> loading capacitor, others just a single-section 365 uuf one. Coils
> changed too.
>
>> To get guess work out of it I just bought and built a L/C meter and
>> measured my coil to have 2.7 microhenry. So I am way off, but it works, sort
>> of.
>>
>> The air caps are 36 to 420pf at the plate and 15 to 728pf at the antenna, so
>> that seem right.
>>
>> All this happens with B+200V and 35 mA plate current.
>>
>
> LC = 25,330/(f * f)
>
> so for 7 MHz, the LC constant is 516. Your 2.7 uH coil should resonate
> with 191 uuf.
>>
>> Older ARRL handbooks give typical values for pi network for 50 Ohm antenna
>> loads and my values are in range for the caps but my coil is too small.
>>
>> The ouput voltage on my antenna measured with a scope is up to 75 volts peak
>> to peak, with a 50 Ohm load that would mean I get more out of the tx than I
>> put into it and I am not of the sort who says this might happen.
>>
>> So my conclusion is, and tell me if this sounds right, that I have an

>> antenna which is far from 50 ohm resistive at 40m and that that makes
>> everything weird.
>
> That's defintitely part of the problem. What antenna are you using?
> Have you tried a resistor or lamp load?
>
>> The dips in plate current are nearly imperceptible and they are not aided by
>> my 250mA full scale meter. They may be 2 or 3 mA.
>> I tune with the help of my scope.
>
> The meter tells more. You can use a pilot light (#47, 150 mA) instead
> of a meter.
>
> Sudden thought: Where is the meter connected? Are you reading plate
> current, or plate-and-screen current combined?
>
> Here's something else to try:
>
> Often trouble of this sort is due to the RF choke used. What RFCs are
> you suing, particularly in the plate circuit? Although the LC meter
> may say they are a certain L, in real life they may have all sorts of
> unwanted resonances.
>
> To test this idea out, do the following:
>
> - Remove the plate RFC
> - Connect the antenna end of the plate coil to the B+ where the RFC
> used to be connected. This point should already be bypassed to ground
> through a disk capacitor of about .01 uF
> - Disconnect the "loading" capacitor
> - Remove the plate coupling capacitor.
>
> What you will then have is the 200 volts being fed to the plate
> through the coil, with one end of the coil going to the plate supply
> and the other end connected directly to the plate of the 6V6. The
> plate tuning capacitor is connected between the plate of the 6V6 and
> ground.
>
> End result is no plate RFC and a parallel resonant circuit. There's no
> connection for an antenna yet, but that's not important right now.
>
> Test out the rig and look for the plate current dip. It should be very
> obvious because there is no load connected.
>
> This is just a temporary setup to see if the RFC is OK.
>
> 73 es GL de Jim, N2EY

2751. Re: FullDuplex like 10Ghz gunn.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 20:57:40 UTC
From: pbreed@netburner.com
Message-ID: <p3q870peins29f6h28c89nf2iq6o5fq37v@4ax.com>
Source record: 27138

I want to do it on 6M.
I'm asking about a fullduplex link, "Like" is done with the 10Ghz Gunn.
I don't intend to use 10Ghz.

Fullduplex:
Control up link, and Telemetry downlink, GPS position, Altitude Airspeed etc....

I'm currently doing this with a 6M TX and a 900Mhz telemetry Tx, but it makes for two antennas,
two radios in the plane etc.... I would kill for 100gm less weight.

As for range, I'm trying to set some FAI records with the plane.
See:
http://records.fai.org/models/ Select the subclass:
Sub-class F5-SOL (Aeroplane, electric motor (solar cells))

The current Model Altitude record is about 7K ft.
I'd like to do 10K and with some wind it could easily get several miles down range.
Thus 20 miles to have some margin.

Last Years Plane (With less efficient cells.)
Launch: http://www.rasdoc.com/splinter/DCP01221.JPG
Proof it flies: http://www.rasdoc.com/splinter/ItFlies.JPG
Plane has 144 inch span and weighs about 2Kg or 4.4lbs.

Paul (Kl7JG)

2752. Re: building a duplexer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 21:53:21 UTC
From: Gary Schafer <gaschafer@comcast.net>
Message-ID: <a1u8701hpmqhcclftjceisubr7kranjce9@4ax.com>
Source record: 27139

On Tue, 06 Apr 2004 23:56:48 -0500, Jeremy Salch
<salchNOSPAM@tblx.net> wrote:

>Paul_Morphy wrote:
>
>>
>> "Jeremy Salch" <salchNOSPAM@tblx.net> wrote in message
>> news:c4vto6$1lfn08$2@ID-225834.news.uni-berlin.de...
>>>
>>>
>>> Does anyone have plans or a website that has plans for building a
>duplexer
>>> with 2m / HF inputs ?
>>
>> A duplexer is a set of quarter-wavelength sections of transmission line.
>On
>> 10 meters your duplexer elements would be about eight feet tall. Are you
>> sure you want one for HF?
>>
>> If you google for "2 meter duplexer" you will find quite a few plans on
>> websites. Most people avoid the trouble of making their own and just buy a
>> set.
>>
>> "PM"
>
>I have one which has a input for 0-90Mhz then 120-500Mhz on the other side,
>and it puts them both onto one coax line. Is that called a duplexer as well
>or is it called something else ?

These things are often mislabeled in their use. But then it depends on
how you look at them as to what to call them.

A duplexer is what some antenna manufacturers call a device that
allows feeding a two band antenna with two different transmitters/
receivers. Not necessarily at the same time.

A duplexer is commonly known in the two way industry as a device that
allows transmit and receive simultaneously on a single antenna.
Different frequencies.

A diplexer is usually a device that allows two transmitters to operate
simultaneously on the same antenna. Much the same as a duplexer works
but since it only involves transmitters it is called a diplexer.
Sometimes called a transmitter combiner.

You can use a duplexer to combine two transmitters into a single antenna and operate simultaneously. You would then be operating it as a diplexer or transmitter combiner.

There are also splitters (tv industry) that allows two or more receivers to operate from one antenna. In the two way industry they are commonly called power dividers or receiver multicouplers. They provide about 20 to 25 db of isolation between receivers.

If you build a "splitter" that can handle more power you can turn it around and combine two or more transmitters into a single antenna. In the two way industry these are called hybrid combiners. This method of combining transmitters is often used when frequency spacing is very close. Too close for cavities to separate the signals. Losses are higher than with cavity type combiners or duplexers.

A duplexer cavity does not have to be a full quarter wave length long. Those are the most efficient however. At higher frequencies (800 mhz for example) cavities are often 3/4 wavelength long. They work better than the 1/4 cavities.

There are also folded cavities where the inside of the cavity is folded back on itself to reduce its length.

There are also loaded cavities. These are part cavity and part helical resonators to reduce the length.

There are duplexers for vhf mobile work that are about 6" long with 1" square cavities. These are quite common. They do not have the same amount of rejection as the larger full quarter wave types do however.

There are also duplexers that are built from just sections of quarter wave coax lines rolled up and put in a small box.

The type of duplexer needed depends on the amount of isolation needed between transmitter and receiver. The amount of isolation required depends on the spacing between transmit and receive frequencies.

But to answer your question, yes what you have may very well be called a duplexer.

73
Gary K4FMX

2753. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 22:59:24 UTC
From: n2ey@aol.comSPAMNO
Message-ID: <20040407185924.05305.00000218@mb-m05.aol.com>
Source record: 27140

In article <BC99DDD3.3F3B%outhouse@midcoast.com>, Uwe <outhouse@midcoast.com>
writes:

>in article c2356669.0404060829.290c710d@posting.google.com, N2EY at
>N2EY@AOL.COM wrote on 4/6/04 12:29:
>
>> Uwe <outhouse@midcoast.com> wrote in message
>> news:<BC9784E1.3DE6%outhouse@midcoast.com>...
>>> in article 20040405185909.19617.00000096@mb-m20.aol.com, N2EY at
>>> n2ey@aol.comSPAMNO wrote on 4/5/04 18:59:
>>>
>>>> In article <BC934D8E.3680%outhouse@midcoast.com>, Uwe
>>>> <outhouse@midcoast.com>
>>>> writes:
>>>>
>>>>> I will just have to fiddle a bit more
>>>>> with the pi network (since at the B+ voltages suggested here my plate
>>>>> current would be way high) and I will have to live with the chirp.
>>>>
>>>> Are you getting a "dip" in plate current? If not, the coil is probably
>too
>>>> large or too small. Unless you get a real dip, the output network isn;t
>>>> right.
>>>>
>>>> I have used a very similar transmitter with 350 volts on the plate, and
>the
>>>> dip
>>>> is clean and pronounced.
>>>
>>>
>>> Jim, the original docs I got for this tx call, at 40 m, for a 15 turn coil
>>> on the coil form provided with the kit, which I hear was 1.25" diameter.
>>> If I use the formula for air coils this turns out to be roughly a 22
>>> microhenry coil.
>>
>> 22 microhenries? I get more like 8 microhenries using the formula
>>
>> L = (a * a * n * n)/([9 * a] + [10 * b])
>>
>> where
>> a = radius of coil in inches
>> b = length of winding in inches
>> n = number of turns
>>

>
>
>Well, the way I use the formula is 1.25*1.25*15*15/((9*1.25)+(10*0.45)) =
>351.5/15.75 = 22.3
>
>0.45 is the length of the 15 windings.
>
>Do I not use the formula properly??

You used the coil *diameter* where you should have used the coil *radius*. A coil with diameter of 1.25 inch has a radius of 0.625 inch.

Compute

0.625*0.625*15*15/((9*0.625)+(10*0.45)) =

and see what you get.
>
>My meter is built into my bench power supply (thats why it reads up to
>250mA), so I am measuring plate and screen current.
>
>I put in a second meter which would only measure the plate current but its
>reading is practicly identical to the first one, as if there was no grid
>current.

That's odd.
>
>My antenna is a dipole of about 75ft. length each side, connected with a 50
>ohm coax, no balun or such things.

150 feet total length? That's not resonant on 40 meters, and your SWR with 50 ohm coax is probably quite high.

A half-wave 40 meter dipole is about 66-67 feet long (33 feet each side), and will have a fairly low SWR on 40 meters when fed with 50 ohm coax. The next length that will give a fairly low 40 meter SWR is about 205 feet overall (102 feet each side). Such a dipole is one-and-a-half waves long.

These are "ballpark" figures, not exact ones.

How high is your dipole?

I agree with Paul Morphy that a simple dummy load is best for testing. His suggestion of paralleled noninductive resistors is excellent.

>I will need a few days to try out some of the things you and also Paul
>suggested and it might really be a good idea to get an SWR meter and a
>tuner.

That will work, but first get the rig working correctly into a dummy load.

>All in due time and I will surely get back to you.

If it takes me a while to respond, it's because I'm away from the computer.
>

>Thanks for the help
>
You're welcome.

73 de Jim, N2EY

2754. Re: I receive voices from hell with my radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 23:37:14 UTC
From: Geoff <k@l.f>
Message-ID: <gg0dc.545$41.208@newsfe3-win.server.ntli.net>
Source record: 27141

Hello,

Have you bought a DAB radio in the UK too!

"Hank Higgens" <hank2018151212@yahoo.com.au> wrote in message
news:3963ecce.0404052056.48e26d8e@posting.google.com...
> This is true, I build a special radio that receives voices from hell,
> you can hear people crying in pain, you can year devils and demons
> singing gruesome songs that torture the damned.
>
> These voices are really evil.If you want to receive hell 666, too,
> just contact me.

2755. transistor id..help

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-07 23:48:29 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1081381715.776252@smtp-1.griffin.com>
Source record: 27142

hi there..

i have a rf power fet i need to id..

its only marked up SON-Y DIGITAL..i guess thats the manufactuer, but when i put it in google i get no joy..
no other marking apart from date and BeO warning.

any ideas if this is the manufactuer , if not who and web site??

thanks simon g0zen

2756. BEYOND Reality TV SEXVIVOR 7450 [1/2]

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 00:09:06 UTC
From: qsniuo@tv.com
Message-ID: <c52572sbf21@news.loxinfo.co.th>
Source record: 27143

Ever Wondered What Happens When the Cameras
are not On During Survivor or Temptations Island ?

Curious About What Happens Behind Closeed Doors
On Big Brother or American Idol?

You Know Crazy, Wild and even Obscene things Happen!

The Networks Dont Want you to See This!!!!
BUT WE SHOW IT TO YOU!!!

http://tinyurl.com/3x68w

BECAUSE THE CAMERA WERE ROLLING the Shots just got
BANNED or CENCORED but we Have the SECRETS from REALITY TV

This is for real You Know You Want to See It!

More Erotic Than Temptation Island
Beyong BigBrother
Sexior than Survivor
Better than the Bachelor
Raunchier than The Amazing Race

Nasty Obscene, erotic, dirty, insestuous, gross, indecent,
sleezy, impure, wild, erotic, pornographic, smutty,
risque, sensual, sexy.....
YOU NAME IT - THEY DID IT
ADD WE HAVE THE PROOF

The Contestants Did it all and the NetWorks Couldnt
Show it, it was Banned, Cencored there Secret
Now we show you what they were doing!!!!

Fetishes, Lingere, Lesbianism, Bi Sexual Experiments,
Foot Fetishes, FORCED SEX, Cross Dressing, Swinging,
jacuzzi group sex, threesomes, hi heels, rubber,
Whatever turns you on - they did it while they
thought no one was watching.

The Real Private Secrets from, Survivor, Bachelor,
Bachelorette, Temptation Island, Mole, Joe Millionare

Contestants caught naked, stripping, playing, sucking,
fucking

Did you know some contestants were lesbians some were
sluts, On one show a chick gave everyone a blowjob

including the camera MEN!!!!

Behind Closed doors, in changing rooms, dressing rooms,
in the bushes, private sets, closets, showers, lakes,
all sorts of places they thought the cameras were not
around, BUT THEY WERE and WE GOT THE SHOTS!!!!!

All the things that got Cut out, the
camera men saved them after the Network
cut them and banned them.

You Wont See this ON Jerry Springer!!!!!!!!

You Think Girls Gone Wild was HOT This is like
The Sexual Olympics, but only for Real

The Cameras Caught them - The Networks CUt them
WE HAVE THEM

Quick Before they get Cencored or Banned Here!!!

OutFuck - OutSuck
Who Will be the Last One Hard

clare

yes
hmwyixxsikqojwhnbnvuoyosvfvcjkmrjfwgodvltglfzecjqgykzeqndhcetyoipohoyzyxfknlfynqfijiqybrqw
wrgmwnqyxnonmhehowzfvmidwgmjbiwldgvxtixtmvknstdjlfluiclzgwpfwqljompfkybjveoxzlryvbnrgodmgu
zkwtvbxcnefplgrdzromioqchtxcxwrrtxhupwbrrtiittwjuqrdonoxuwpvjpifvolzghszbxdjmieoysqkzgkibz
oxycxbiiomirrprmvvcjiknvsoce

2757. BEYOND Reality TV SEXVIVOR 7450 [12/2]

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 00:09:08 UTC
From: qsniuo@tv.com
Message-ID: <c52574sbf22@news.loxinfo.co.th>
Source record: 27144
Body handling: Inline uuencoded payload not displayed:
C:\AAA-Data\WebSites\XSites\Zpromo\NEWS\Headers\Pics\Pic3\arrow42.gif

```
[Inline uuencoded payload not displayed:
C:\AAA-Data\WebSites\XSites\Zpromo\NEWS\Headers\Pics\Pic3\arrow42.gif]

`
end
```

2758. Re: building a duplexer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 00:33:34 UTC
From: Jeremy Salch <salchNOSPAM@tblx.net>
Message-ID: <c526lr$2nht27$1@ID-225834.news.uni-berlin.de>
Source record: 27145

Dale Parfitt wrote:

>
> "Jeremy Salch" <salchNOSPAM@tblx.net> wrote in message
> news:c4vto6$1lfn08$2@ID-225834.news.uni-berlin.de...
>>
>>
>> Does anyone have plans or a website that has plans for building a
duplexer
>> with 2m / HF inputs ?
>>
>>
>>
>> --
> The proper term is diplexer
>
> W4OP>

Actually I have one from comet with a 1.3-30Mhz input and a 49-470Mhz and
it is labeled as a duplexer.

A diplexer is only for combining 2 transmitters only i believe right ?

--
Registered Linux User #346565

2759. Re: building a duplexer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 00:36:45 UTC
From: Jeremy Salch <salchNOSPAM@tblx.net>
Message-ID: <c526rr$2nht27$2@ID-225834.news.uni-berlin.de>
Source record: 27146

Paul_Morphy wrote:

>
> "Jeremy Salch" <salchNOSPAM@tblx.net> wrote in message
> news:c501nc$1lfn08$3@ID-225834.news.uni-berlin.de...
>
>> I have one which has a input for 0-90Mhz then 120-500Mhz on the other
> side,
>> and it puts them both onto one coax line. Is that called a duplexer as
> well
>> or is it called something else ?
>
> 'Duplexer' is a term used to describe devices that provide greater
isolation
> between the ports than what you seem to have. They are used on repeater
> stations where the transmitter and receiver operate simultaneously on
> frequencies close together. The transmitter is producing anywhere from a
few
> watts to several hundred watts, and the receiver cannot be 'desensed.' The
> duplexer acts as a sharp filter as well as a combiner, allowing both units
> to use the same antenna.
>
> There are other names for similar devices, which vary in sophistication.
The
> simple TV-antenna splitter allows two receivers to use a common antenna,
but
> you don't get much isolation between the output ports and you wouldn't
> transmit much power through one. There are power splitters and combiners
> that you can buy or build. As you have not stated the application it is
> impossible to tell you what you need. Could you be more specific about
what
> it is that you are intending to do with this device?
>
> "PM"

Ok Here is the run down.

I have one "duplexer", which is what it is labeled as from comet, that has 2
inputs for 1.3-30Mhz and 49-470Mhz

and i'm needing / wanting another one for the following purpose.

I have one run of coax going from my radios to outside where my antennas are
and I need to try to use the coax for both HF and for VHF/UHF SO I need a
one of these devices inside at the radio end to get both HF and 2m/440 onto
the coax.. then another one at the other end to split it off again to goto

seperate antennas.

--
Registered Linux User #346565

2760. QRPp power meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 01:10:17 UTC
From: Richard <translations@qdnet.pl>
Message-ID: <c528u1$5o2$1@atlantis.news.tpi.pl>
Source record: 26997

Does anyone have a ny designs for a (low) power meter that would read powers of up to 1w (down to say 50mw or even lower) up to and inc. 6m?

Rgds
Richard SO5GB

2761. Re: I receive voices from hell with my radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 02:37:35 UTC
From: David 01 <ifiwantspam@illask.org>
Message-ID: <1079enhd1b7hb40@corp.supernews.com>
Source record: 27001

Don't for get Hell, Michigan.

"Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:Pl2dc.4250$ux4.3570@bignews5.bellsouth.net...
> JLB wrote:
> > There is a Hell, MI (honest! look it up if you don't beleive me), but
I
> > think it is too small to support a broadcast station.
> >
> > Jim
> There is also a Hell in Texas. (Is that where the "W" ranch is?)
> Like the salesman said, "I go thorough Hell everyday!"

2762. Re: I receive voices from hell with my radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 02:55:07 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <ek2dc.4249$ux4.2605@bignews5.bellsouth.net>
Source record: 26998

JLB wrote:
> The original post was not clear as to what frequency he was hearing the
> voices on. Was it 75 meters? Sounds to me like a normal band opening on
> 75.
>
>
>
NO. Must be CB.

2763. Re: I receive voices from hell with my radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 02:56:48 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <PI2dc.4250$ux4.3570@bignews5.bellsouth.net>
Source record: 26999

JLB wrote:
> There is a Hell, MI (honest! look it up if you don't beleive me), but I
> think it is too small to support a broadcast station.
>
> Jim
There is also a Hell in Texas. (Is that where the "W" ranch is?)
Like the salesman said, "I go thorough Hell everyday!"

2764. Toriod core material?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 02:58:47 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <Gn2dc.4253$ux4.3066@bignews5.bellsouth.net>
Source record: 27000

Anybody have an idea how to determine what material a surplus toroid core might be made out of? I tried winding a known number of turns on one and then measured the inductance on a Q meter, but how would that relate to the the permability factor?

2765. Re: Toriod core material?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 03:16:39 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <4074C417.7C7C8C6D@rica.net>
Source record: 27002

Ken Scharf wrote:
>
> Anybody have an idea how to determine what material a surplus toroid
> core might be made out of? I tried winding a known number of turns on
> one and then measured the inductance on a Q meter, but how would that
> relate to the the permability factor?

Probably the easiest way is to compare your inductance to tables of
inductance for various core types in your size.
http://tritium.fis.unb.br/Fis3Exp/fcim.csdc.com/fcimis/compid/ind/toroid.html

Or you can go back to the basic physics and solve the formula for
permeability.
http://hyperphysics.phy-astr.gsu.edu/hbase/magnetic/indtor.html

--
John Popelish

2766. Re: QRPp power meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 03:52:27 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <%%3dc.33002$vo5.1046033@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27003

"Richard" <translations@qdnet.pl> wrote in message
news:c528u1$5o2$1@atlantis.news.tpi.pl...
> Does anyone have a ny designs for a (low) power meter that would read
powers
> of up to 1w (down to say 50mw or even lower) up to and inc. 6m?

This is part of the description of a "Microwatter" from the 2003 ARRL
Handbook:

"This simple, easy to build terminating microwattmeter by Denton Bramwell,
K7OWJ appeared in June 1997 QST. It can measure power levels from below -50
dBm (10 nW) to -20 dBm (10 uW) with an accuracy of within 1 dB at
frequencies from below the broadcast band (540-1720 kHz in the U.S.) up to 2
meters."

The circuit uses a Burr Brown INA2128P amplifier; the Handbook says the part
is available from DigiKey but they are showing it as obsolete and out of
stock. That's dual instrumentation amplifier, specs here:
http://web.ics.purdue.edu/~fryecm/ina2128.pdf so perhaps there is a
more-recent and available chip that will work. From the datasheet:

"The INA2128 is a dual, low power, general purpose instrumentation amplifier
offering excellent accuracy. Its versatile 3-op amp design and small size
make it ideal for a wide range of applications. Current-feedback input
circuitry provides wide bandwidth even at high gain (200kHz at G = 100).

"A single external resistor sets any gain from 1 to 10,000. Internal input
protection can withstand up to ±40V without damage.

"The INA2128 is laser trimmed for very low offset voltage (50 mV), drift
(0.5 mV/°C) and high common-mode rejection (120 dB at G ≥ 100). It operates
with power supplies as low as ±2.25V, and quiescent current is only 700 mA
per IA-ideal for battery operated and multiple-channel systems."

I'm betting someone here knows a sub and hoping they will post it because
I'd like to build one of these myself. The only other uncommon part is a
CA3039/NTE907, IC diode array, of which two diodes are used.

Going to 1 W would be a simple matter of using a calibrated attenuator.

73,

"PM"

2767. Re: building a duplexer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 03:58:53 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <164dc.33017$vo5.1045747@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27004

"Jeremy Salch" <salchNOSPAM@tblx.net> wrote in message
news:c526rr$2nht27$2@ID-225834.news.uni-berlin.de...
> and i'm needing / wanting another one for the following purpose.
>
> I have one run of coax going from my radios to outside where my antennas
are
> and I need to try to use the coax for both HF and for VHF/UHF SO I need a
> one of these devices inside at the radio end to get both HF and 2m/440
onto
> the coax.. then another one at the other end to split it off again to goto
> seperate antennas.

http://www.texastowers.com/cmtduplx.htm

http://www.universal-radio.com/catalog/hamantm/cduplex.html

http://www.nevadaradio.co.uk/acatalog/comet-duplexers.html

Someone in Europe must be selling these, as I'm sure they're not made in the
U.S.

"PM"

2768. WTB:2 Meter HT

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 04:29:02 UTC
From: Charlie <okiemansc@yahoo.com>
Message-ID: <hy4dc.168$Ty5.100@okepread05>
Source record: 27005
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.swap

I am interested in buying a couple of cheap 2 meter HT's that are not
digital display.Something like a Kenwood TH-21 or an Icom IC-2A.
Please state price and condition.
THANKS !!!
...Charlie...KC0EH...

2769. Re: building a duplexer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 04:33:43 UTC
From: Jeremy Salch <salchNOSPAM@tblx.net>
Message-ID: <c52ko5$2mre83$1@ID-225834.news.uni-berlin.de>
Source record: 27006

Paul_Morphy wrote:

>
> "Jeremy Salch" <salchNOSPAM@tblx.net> wrote in message
> news:c526rr$2nht27$2@ID-225834.news.uni-berlin.de...
>> and i'm needing / wanting another one for the following purpose.
>>
>> I have one run of coax going from my radios to outside where my antennas
> are
>> and I need to try to use the coax for both HF and for VHF/UHF SO I need
a
>> one of these devices inside at the radio end to get both HF and 2m/440
> onto
>> the coax.. then another one at the other end to split it off again to
goto
>> seperate antennas.
>
> http://www.texastowers.com/cmtduplx.htm
>
> http://www.universal-radio.com/catalog/hamantm/cduplex.html
>
> http://www.nevadaradio.co.uk/acatalog/comet-duplexers.html
>
> Someone in Europe must be selling these, as I'm sure they're not made in
the
> U.S.
>
> "PM"

yes those are exactly what i'm looking into trying to build, I can't afford
to buy one and i thought it would be interesting to attempt to build one,
or at least see if it is possible

--
Registered Linux User #346565

2770. Re: building a duplexer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 04:50:32 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <sS4dc.33155$vo5.1051264@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27007

"Jeremy Salch" <salchNOSPAM@tblx.net> wrote in message
news:c52ko5$2mre83$1@ID-225834.news.uni-berlin.de...

> yes those are exactly what i'm looking into trying to build, I can't
afford
> to buy one and i thought it would be interesting to attempt to build one,
> or at least see if it is possible

They aren't cheap, I noticed that. Probably all of 3/10 of a Euro to make.

Maybe this will work:
http://home.datacomm.ch/hb9abx/diplhf6m-vuhf.html

Says he got up to 100 W on HF and 50 W on 70 cm. He has an email address,
too..

73,

"PM"

2771. Re: building a duplexer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 05:28:18 UTC
From: Jeremy Salch <salchNOSPAM@tblx.net>
Message-ID: <c52nug$2mre83$2@ID-225834.news.uni-berlin.de>
Source record: 27008

Paul_Morphy wrote:

>
> "Jeremy Salch" <salchNOSPAM@tblx.net> wrote in message
> news:c52ko5$2mre83$1@ID-225834.news.uni-berlin.de...
>
>> yes those are exactly what i'm looking into trying to build, I can't
> afford
>> to buy one and i thought it would be interesting to attempt to build one,
>> or at least see if it is possible
>
> They aren't cheap, I noticed that. Probably all of 3/10 of a Euro to make.
>
> Maybe this will work:
> http://home.datacomm.ch/hb9abx/diplhf6m-vuhf.html
>
> Says he got up to 100 W on HF and 50 W on 70 cm. He has an email address,
> too..
>
> 73,
>
> "PM"

thanks! That looks very promising. I might just give it a try

--
Registered Linux User #346565

2772. Re: QRPp power meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 05:37:50 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <1079p9k6mj98efc@corp.supernews.com>
Source record: 27009

"A Simple and Accurate QRP Directional Wattmeter", in Feb. 1990 QST fits the description. It also appeared in several ARRL Handbook editions shortly after the QST article was published, and in some reprint publications like ARRL's _QRP Classics_.

Roy Lewallen, W7EL

Richard wrote:

> Does anyone have a ny designs for a (low) power meter that would read powers
> of up to 1w (down to say 50mw or even lower) up to and inc. 6m?
>
> Rgds
> Richard SO5GB
>
>

2773. Re: Toriod core material?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 06:36:58 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c52rua$1ve$1@hercules.btinternet.com>
Source record: 27010

> Anybody have an idea how to determine what material a surplus toroid
> core might be made out of? I tried winding a known number of turns on
> one and then measured the inductance on a Q meter, but how would that
> relate to the the permability factor?

==========

Enter core dimensions, number of turns and permeability of core material
into program TOROID to obtain coil inductance.

Alternatively, do the reverse, measure inductance and obtain permeability of
the core material.

Covers square rings, tubes, flat discs and washers.

Also obtain value of capacitance to resonate coil at a particular frequency.

Download program TOROID in a few seconds from website below and run
immediately.

.....
Regards from Reg, G4FGQ
For Free Radio Design Software go to
http://www.btinternet.com/~g4fgq.regp
.....

2774. Re: QRPp power meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 06:42:51 UTC
From: PaoloC <ollollo@hotpop.com>
Message-ID: <c52s99$2mh9vv$2@ID-199778.news.uni-berlin.de>
Source record: 27011

Richard wrote:

> Does anyone have a ny designs for a (low) power meter that would read powers
> of up to 1w (down to say 50mw or even lower) up to and inc. 6m?

Check this out:
http://www.webx.dk/oz2cpu/radios/miliwatt.htm

It is based on Analog Devices' AD8307 chip. You can skip the PIC part if
you have a reliable DVM!

Happy Easter, if applicable
Paolo ik1zyw

2775. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 06:45:26 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BC9A6D3D.3F60%outhouse@midcoast.com>
Source record: 27012

Jim, after my calculation of the coil were wrong I thought it was about time to check everything and I did and to try and distinguish between radius and diameter...

Using the L/C meter I wound a proper coil, I checked the calibration of my plate current meter, I did a more thorough check of the grid current (it is between 1 and 2 mA) and so on and so forth.
And I did connect a dummy load (even though they don't respond or send out QSL cards when you tranmit into them).

None of the thing did make any real difference and the dip, the elusive dip, was in the order of magnitude of maybe 2 mA, nearly impossible to see on my meter.

Then I changed the circuit around as you suggested, testing the RFC and I got a dip the likes of which I had never seen. The meter went slowly from about 30 mA to 50 mA and then dropped to about 25 mA, I couldn't miss it.

But what does it mean. I gather my RFC is not ok. What is wrong??

I used a Series 4590 high current filter inductor I had around, it has the Digi Key number DN 4528.

Happy about the dip but still not clear on the deeper reasons...

73 Uwe

> Here's something else to try:
>
> Often trouble of this sort is due to the RF choke used. What RFCs are
> you suing, particularly in the plate circuit? Although the LC meter
> may say they are a certain L, in real life they may have all sorts of
> unwanted resonances.
>
> To test this idea out, do the following:
>
> - Remove the plate RFC
> - Connect the antenna end of the plate coil to the B+ where the RFC
> used to be connected. This point should already be bypassed to ground
> through a disk capacitor of about .01 uF
> - Disconnect the "loading" capacitor
> - Remove the plate coupling capacitor.
>
> What you will then have is the 200 volts being fed to the plate
> through the coil, with one end of the coil going to the plate supply
> and the other end connected directly to the plate of the 6V6. The
> plate tuning capacitor is connected between the plate of the 6V6 and

> ground.
>
> End result is no plate RFC and a parallel resonant circuit. There's no
> connection for an antenna yet, but that's not important right now.
>
> Test out the rig and look for the plate current dip. It should be very
> obvious because there is no load connected.
>
> This is just a temporary setup to see if the RFC is OK.
>
> 73 es GL de Jim, N2EY

2776. Re: QRPp power meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 06:47:25 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <1A6dc.21891$J56.1874@edtnps89>
Source record: 27013

Behold, PaoloC signalled from keyed 4-1000A filament:

> Richard wrote:
>
>> Does anyone have a ny designs for a (low) power meter that would read
>> powers of up to 1w (down to say 50mw or even lower) up to and inc. 6m?
>
> Check this out:
> http://www.webx.dk/oz2cpu/radios/miliwatt.htm
>
> It is based on Analog Devices' AD8307 chip. You can skip the PIC part if
> you have a reliable DVM!
>
> Happy Easter, if applicable
> Paolo ik1zyw

Oh, that is just too sweet! :))))))))))

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

2777. Re: QRPp power meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 11:32:25 UTC
From: pake@extrafoi.se
Message-ID: <pake-0101040546030001@dhcp-032-102.foi.se>
Source record: 27014

In article <c528u1$5o2$1@atlantis.news.tpi.pl>, "Richard"
<translations@qdnet.pl> wrote:

> Does anyone have a ny designs for a (low) power meter that would read powers
> of up to 1w (down to say 50mw or even lower) up to and inc. 6m?
>
> Rgds
> Richard SO5GB

Some tips power and swr:
http://www.njqrp.org/ghbextra/3/3i.html

Good in practise japanese (dont need to read):
http://www.geocities.jp/ja6hic/soku/swr/swr.html

http://www.qsl.net/mnqrp/swr.htm
http://www.g4wif.fsnet.co.uk/q_tech15.htm

With led-indicator:
http://ua70.faithweb.com/cgi-bin/i/minipig/qrp-tune.jpg

/Per-Ake

--
Remove "extra" in my e-mail adress !!

2778. someone should snatch these up

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 11:57:56 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <StSdnQS28O7goOjdRVn-vw@comcast.com>
Source record: 27015

Reliable End Mill has a couple HP3586C recievers for sale on EBay -- along with some other goodies -- I point this out since I am delighted with the ovenized 3586C which I own. There are also a lot of other HP goodies, probably going cheap, on his list of auctions. (This isn't a bald plug for REM, but I have dealt with them in the past and they are good guys.)

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=3807654750&category=4678&sspagename=STRK%3AMEBBI%3AIT&rd=1

2779. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 11:59:29 UTC
From: n2ey@aol.comSPAMNO
Message-ID: <20040408075929.16977.00000148@mb-m23.aol.com>
Source record: 27016

In article <BC9A6D3D.3F60%outhouse@midcoast.com>, Uwe <outhouse@midcoast.com>
writes:

>Using the L/C meter I wound a proper coil, I checked the calibration of my
>plate current meter, I did a more thorough check of the grid current (it is
>between 1 and 2 mA) and so on and so forth.

I think you mean "screen current".

>And I did connect a dummy load (even though they don't respond or send out
>QSL cards when you tranmit into them).

Yup!
>
>None of the thing did make any real difference and the dip, the elusive dip,
>was in the order of magnitude of maybe 2 mA, nearly impossible to see on my
>meter.
>
>Then I changed the circuit around as you suggested, testing the RFC and I
>got a dip the likes of which I had never seen. The meter went slowly from
>about 30 mA to 50 mA and then dropped to about 25 mA, I couldn't miss it.
>
>But what does it mean. I gather my RFC is not ok. What is wrong??
>
>I used a Series 4590 high current filter inductor I had around, it has the
>Digi Key number DN 4528.

The RFC you're using is not meant for the appliucation. It's intended for much
lower frequencies. You can't tell that just by looking at it.

RF choke design is a matter of compromises. For example, the use of a powdered
iron or ferrite core will raise the inductance. But that same core does not
work at all frequencies, and may saturate from DC current in the core.

The biggest problem is called "distributed capacitance". In order to get lots
of inductance, you put on lots of turns, closely spaced. But each turn has a
small amount of capacitance to the turns next to it. All these small
capacitances add up, and as the frequency is increased they become significant
to the total reactance of the choke. At one or more frequencies the choke will
actually resonate - these are called "self resonant" frequencies. At some
frequencies the choke may act like an inductor of much lower inductance, or
even like a capacitor, because of the self resonances. Self resonance in a
choke can be found with a suitable dip meter.

RF chokes that are meant for applications like the AC-1 are designed to have
self-resonant frequencies far from the amateur bands.

>Happy about the dip but still not clear on the deeper reasons...

Hope this helps.

73 de Jim, N2EY

2780. Re: QRPp power meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 12:10:44 UTC
From: Hans Summers <hans.summers@tudor.com>
Message-ID: <c53fg4$2ik013$1@ID-61331.news.uni-berlin.de>
Source record: 27017

"PaoloC" <ollollo@hotpop.com> wrote in message
news:c52s99$2mh9vv$2@ID-199778.news.uni-berlin.de...
> Richard wrote:
>
> > Does anyone have a ny designs for a (low) power meter that would read
powers
> > of up to 1w (down to say 50mw or even lower) up to and inc. 6m?
>
> Check this out:
> http://www.webx.dk/oz2cpu/radios/miliwatt.htm
>
> It is based on Analog Devices' AD8307 chip. You can skip the PIC part if
> you have a reliable DVM!
>
A nice chip the AD8307, very easy to use. I used one as the logarithmic
amplifier stage in my spectrum analyser. It's available at Farnell
http://www.farnell.com in 8-pin DIL, which is another nice thing for a
relatively new IC. Expensive though, and of all the chips I could've fried
when constructing my analyser, I had to fry that most expensive one and get
a replacement. I guess to do otherwise would probably be in violation of
Murphy's law, or Sod's law or someone's.

73 de Hans G0UPL
http://www.HansSummers.com

2781. Re: I receive voices from hell with my radio

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 12:12:47 UTC
From: Hans Summers <hans.summers@tudor.com>
Message-ID: <c53fjv$2obg5s$1@ID-61331.news.uni-berlin.de>
Source record: 27018

"Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:ek2dc.4249$ux4.2605@bignews5.bellsouth.net...
> JLB wrote:
> > The original post was not clear as to what frequency he was hearing the
> > voices on. Was it 75 meters? Sounds to me like a normal band opening
on
> > 75.
> >
> >
> >
> NO. Must be CB.

It could have been Hellschreiber mode I guess

2782. Need Hi-Z amplifier for RF-probe (Maxim?)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 14:14:57 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <glla70hk8c8d9vo27000cqn2imhbr2ieaf@4ax.com>
Source record: 27019

Hi

need info about active high impedance buffer amplifier for RF probe,
believe Maxim makes such. Made a temporary circuit with discrete
components, it is shown as item #2.16 on my page
http://home.online.no/~la8ak/m2.htm
this is good enough for one purpose, but could well be used for RF
mV-meter covering larger range. If it is available from Linear
Technologies it would be even easier to obtain a sample

73

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

2783. Re: someone should snatch these up

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 14:21:24 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <Edddc.59549$He5.1137931@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27020

"John Walton" <jdwalton@comcast.net> wrote in message
news:StSdnQS28O7goOjdRVn-vw@comcast.com...
> Reliable End Mill has a couple HP3586C recievers for sale on EBay -- along
> with some other goodies -- I point this out since I am delighted with the
> ovenized 3586C which I own. There are also a lot of other HP goodies,
> probably going cheap, on his list of auctions. (This isn't a bald plug
for
> REM, but I have dealt with them in the past and they are good guys.)
>
>
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=3807654750&category=4678&sspagename=STR
K%3AMEBBI%3AIT&rd=1

Does this one have LSB/USB?

"PM"

2784. Re: building a duplexer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 14:35:29 UTC
From: Gary Schafer <gaschafer@comcast.net>
Message-ID: <6poa70tp06t6kect57g1q6nfi9cafhgqrr@4ax.com>
Source record: 27021

On Thu, 08 Apr 2004 00:28:18 -0500, Jeremy Salch
<salchNOSPAM@tblx.net> wrote:

>Paul_Morphy wrote:
>
>>
>> "Jeremy Salch" <salchNOSPAM@tblx.net> wrote in message
>> news:c52ko5$2mre83$1@ID-225834.news.uni-berlin.de...
>>
>>> yes those are exactly what i'm looking into trying to build, I can't
>> afford
>>> to buy one and i thought it would be interesting to attempt to build one,
>>> or at least see if it is possible
>>
>> They aren't cheap, I noticed that. Probably all of 3/10 of a Euro to make.
>>
>> Maybe this will work:
>> http://home.datacomm.ch/hb9abx/diplhf6m-vuhf.html
>>
>> Says he got up to 100 W on HF and 50 W on 70 cm. He has an email address,
>> too..
>>
>> 73,
>>
>> "PM"
>
>
>thanks! That looks very promising. I might just give it a try

A device like this is also known as a "cross band coupler". You might
try a search for that and see what you come up with.

73
Gary K4FMX

2785. Making RF Chokes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 15:48:06 UTC
From: songoku_@ig.com.br
Message-ID: <9ec5b8a8.0404080748.23406f90@posting.google.com>
Source record: 27022

Hello,
I'm building a FM Tx and I'm having some problems to find 100uH RF Chokes here.
So I decide to wind a 100uH air-core inductor, is there any problems on that?
My inductor especifications are:
-Wire: AWG 24.
-Core diameter: 35 mm.
-Spires: 48, 2 layers of 24 spires each.

Thanks,
Hayato

2786. Re: Making RF Chokes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 16:31:26 UTC
From: "Dan Richardson"
Message-ID: <lgva70d2tos8s5oe4pfq2auqr61i18dh2o@4ax.com>
Source record: 27023

On 8 Apr 2004 08:48:06 -0700, songoku_@ig.com.br (Hayato) wrote:

>Hello,
>I'm building a FM Tx and I'm having some problems to find 100uH RF Chokes here.
>So I decide to wind a 100uH air-core inductor, is there any problems on that?
>My inductor especifications are:
>-Wire: AWG 24.
>-Core diameter: 35 mm.
>-Spires: 48, 2 layers of 24 spires each.
>
>Thanks,
>Hayato

Should be no problem, but I suggest you check the self-resonance
points when done.

Danny
K6MHE

2787. Re: QRPp power meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 17:01:09 UTC
From: mcalhoun@ksu.edu
Message-ID: <c540gl$j10@unix2.cc.ksu.edu>
Source record: 27024

"Richard" <translations@qdnet.pl> writes:
>Does anyone have any designs for a (low) power meter that would read powers
>of up to 1w (down to say 50mw or even lower) up to and inc. 6m?

I don't know what your intended use is, but if you just want to measure output power while testing a transmitter, what about just measuring the voltage across your dummy load, since, for the same resistor, power is proportional to voltage squared? (It may take a bit of work/ingenuity to measure RF voltage at six meters, but that's one of the things that being a ham is all about.)

--Myron, W0PBV.
--
Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge
PhD EE (retired). "Barbershop" tenor. CDL(PTXS). W0PBV. (785) 539-4448
NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle, Pistol)

2788. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 20:42:19 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BC9B3169.3F71%outhouse@midcoast.com>
Source record: 27025

in article 20040408075929.16977.00000148@mb-m23.aol.com, N2EY at
n2ey@aol.comSPAMNO wrote on 4/8/04 07:59:

> In article <BC9A6D3D.3F60%outhouse@midcoast.com>, Uwe <outhouse@midcoast.com>
> writes:
>
>> Using the L/C meter I wound a proper coil, I checked the calibration of my
>> plate current meter, I did a more thorough check of the grid current (it is
>> between 1 and 2 mA) and so on and so forth.
>
> I think you mean "screen current".
>
>> And I did connect a dummy load (even though they don't respond or send out
>> QSL cards when you tranmit into them).
>
> Yup!
>>
>> None of the thing did make any real difference and the dip, the elusive dip,
>> was in the order of magnitude of maybe 2 mA, nearly impossible to see on my
>> meter.
>>
>> Then I changed the circuit around as you suggested, testing the RFC and I
>> got a dip the likes of which I had never seen. The meter went slowly from
>> about 30 mA to 50 mA and then dropped to about 25 mA, I couldn't miss it.
>>
>> But what does it mean. I gather my RFC is not ok. What is wrong??
>>
>> I used a Series 4590 high current filter inductor I had around, it has the
>> Digi Key number DN 4528.
>
> The RFC you're using is not meant for the appliucation. It's intended for much
> lower frequencies. You can't tell that just by looking at it.
>
> RF choke design is a matter of compromises. For example, the use of a powdered
> iron or ferrite core will raise the inductance. But that same core does not
> work at all frequencies, and may saturate from DC current in the core.
>
> The biggest problem is called "distributed capacitance". In order to get lots
> of inductance, you put on lots of turns, closely spaced. But each turn has a
> small amount of capacitance to the turns next to it. All these small
> capacitances add up, and as the frequency is increased they become significant
> to the total reactance of the choke. At one or more frequencies the choke will
> actually resonate - these are called "self resonant" frequencies. At some
> frequencies the choke may act like an inductor of much lower inductance, or

> even like a capacitor, because of the self resonances. Self resonance in a
> choke can be found with a suitable dip meter.
>
> RF chokes that are meant for applications like the AC-1 are designed to have
> self-resonant frequencies far from the amateur bands.
>
>> Happy about the dip but still not clear on the deeper reasons...
>
> Hope this helps.
>
> 73 de Jim, N2EY

Yes this is all very helpful. Indeed I was thinking that it would have taken me a very long time to figure this out by myself, if at all.

I put another choke in there, a Hammond 1535B, the self resonant min. frequ. is 1.3Mhz.

I guess it does take some deeper inside what parameters to look for since this one improves things slightly but not yet altogether (slightly more pronounced dip).

Who carries the sort of chokes you were refering to?

73 Uwe

2789. Statement on Spam and VoteNader.org

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 20:43:11 UTC
From: jonas@votenader.org
Message-ID: <a6e149ae.90f4119d@host-69-48-73-244.roc.choiceone.net>
Source record: 27029
Cross-posted to: rec.photo.darkroom,rec.radio.amateur.homebrew,rec.drugs.chemistry,rec.arts.movies.production

Spam from VoteNader.org? (Or naderexplore04.org)

You may have received spam email recently that appears to come from our campaign, or be about our campaign -- perhaps the "From" and or "Reply-to" addresses look like they are coming from VoteNader.org. Or perhaps you have received a message that appears to come from an individual (if the address is real, the real owner probably did not send this email either) with suppressed recipients. Or maybe you received an email that appeared to come from yourself promoting our site.

These messages are NOT from Nader for President 2004, and these email tactics are NOT condoned by our campaign in any way.

UPDATE: Some of the latest forged emails have been made to appear to be coming from naderexplore04.org. Again, we are not responsible for this unfortunate abuse of email, and there is little in the technical sense that we can do to prevent this as it has nothing to do with our actual infrastructure. We are collecting information.

NOTE: The emails with malicious code (viruses, worms, etc.) often have attachments. Our campaign will NEVER send attachments in our announcement emails to you. Please be sure that you have anti-virus software and have the latest updates available for your anti-virus software.

Our hosting service has alerted us to say that Nader for President 2004 appears to be the target of what is called a "Joe Job." Such an event is where a spammer forges email to make it appear to have come from some other domain (such as ours -- or yourself). This is hard to prevent on our end and part of the insecure nature of the email protocol in general.

Members of our actual email list must request to receive email from us (either through Ralph's signup sheets or subscribing during our exploratory phase, or now on our campaign site). When one signs up for email they must reply to a confirmation message before they receive our list announcements.

Our public announcement emails come from "campaign@votenader.org," contain a "Paid for by Nader for President 2004" statement at the bottom, and have "updates@lists.votenader.org" in the "To:" header. Unfortunately, some of these indicators can be forged as well.

Most of the Spam that we have received complaints about appear to be forged from email addresses not associated with votenader.org (often forged to appear to be coming from government email addresses), and have

our website code embedded in the body of the email with hidden tags that contain random words that work to subvert anti-spam software.

If you are on our lists, you can ALWAYS unsubscribe at ANY time by following the instructions included at the end of our announcements. You can also use our unsubscribe page using the email address you signed up with.

If you are receiving this SPAM, we extend our apologies.

We will pursue the spammers to the full extent of the law.

For more information, please review these resources:

How Do I Determine the Source of an Email?
http://www.aota.net/Email_Spam_Prevention_and_Mgmt/emailsource.php4

Why Does This Spam Look Like I Sent It?
http://www.aota.net/Email_Spam_Prevention_and_Mgmt/spamfrom.php4

Coping with a Joe Job
http://www.sitepoint.com/article/sabotage-coping-joe-job/2

Please contact abuse@votenader.org with any questions. We have received many samples of the spam and are working to identify the source, if possible.

Volunteer -------------- http://www.votenader.org/get_involved/index.php
Ballot Access ---------- http://www.votenader.org/ballot_access/index.php
Register to Vote ------- http://www.rockthevote.com/rtv_register.php
Contribute ------------- http://www.votenader.org/contribute/index.php
Contact Us ------------- http://www.votenader.org/contact/index.php

--
to come forward and
question what happened, these Jews who wanted me dead and had created false stories about me, never came back, they till today do not confront me and rapist and terrorists like Mahmud Kurchu and Amir butler are free to kill a few more.

Conspiracy theory?s real script: Punctured heart

All along I was thinking that this is a dream, as I though "I am too good for this". The third day cop woke me up in rude way, he said you have killed now "three" Australians (I wonder if he ever stopped to think I was a human child who had feeling who was raped his whole life by jews and I was telling the truth), anyway he told me the blood pressure in left side of my body keeps dropping. They did all the checks they found out my digestion system, some important body parts were injured. But decline in blood pressure was not from there, they did the heart scan, the lower part of my heart was punctured. He woke me up again (in rude way), saying what do I want to do, if I live like that I have three months to live or okay three years (I guess me telling the truth to world was more important to him at that time than my life and

feelings but then this is how the world is today), if I go for operation I might die during the operation. I asked him if I was dreaming he said yes I am. I told him okay I will go for heart operation, he reminded me once again I c

2790. Re: QRPp power meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 20:58:44 UTC
From: Richard Heindel <rheindel@neo.rr.com>
Message-ID: <82jdc.583$ng1.531@fe2.columbus.rr.com>
Source record: 27026

"Richard" <translations@qdnet.pl> wrote in message
news:c528u1$5o2$1@atlantis.news.tpi.pl...
> Does anyone have any designs for a (low) power meter that would read powers
> of up to 1w (down to say 50mw or even lower) up to and inc. 6m?
>
> Rgds
> Richard SO5GB
>
Oak Hills Research Has a real nice little meter, http://www.ohr.com/wattmeter.htm

Richard WB8KRN

2791. Re: QRPp power meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 21:31:47 UTC
From: Lou <FFSTA17NO@SPAMACCESS995.COM>
Message-ID: <mxjdc.20$Ho2.1022@dfw-read.news.verio.net>
Source record: 27027

I have a schematic of a device I built for testing and servicing. While mine isn't designed to read in watts or milliwatts, it does detect the smallest amount of RF . There is a pot on it to adjust sensitivity. I'm sure it could be adapted somehow for your needs. Knowing my repairs and such, I'm going to say 3-5 watts pegs the meter. So, as I said, you can scale it back or design the thing to work for you. Cost is about $10 IF you have to buy any thing. It can be made from junk box parts and a spare case from a scrapped piece of equipment or housing from the shack - or just about anything. If interested, e-mail me for info.

Lou

--
Clearing out shop, shack and house. I have a list of things for sale.
NOS/New/Used, Parts, radio accessories, etc. All are AS IS. Interested?
E-Mail me.

"Richard Heindel" <rheindel@neo.rr.com> wrote in message
news:82jdc.583$ng1.531@fe2.columbus.rr.com...
>
> "Richard" <translations@qdnet.pl> wrote in message
news:c528u1$5o2$1@atlantis.news.tpi.pl...
> > Does anyone have any designs for a (low) power meter that would read
powers
> > of up to 1w (down to say 50mw or even lower) up to and inc. 6m?
> >
> > Rgds
> > Richard SO5GB
> >
> Oak Hills Research Has a real nice little meter,
http://www.ohr.com/wattmeter.htm
>
> Richard WB8KRN
>
>

2792. Re: Making RF Chokes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-08 23:12:57 UTC
From: songoku_@ig.com.br
Message-ID: <9ec5b8a8.0404081512.7e752c73@posting.google.com>
Source record: 27028

Thanks!

2793. Re: someone should snatch these up

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-09 01:27:56 UTC
From: shephed <smokey@twist1up.com>
Message-ID: <w_mdc.1290$T86.1034@fe2.columbus.rr.com>
Source record: 27030

"Paul_Morphy" <nopaul_morphy2@coolgoose.com> wrote in message
news:Edddc.59549$He5.1137931@bgtnsc04-news.ops.worldnet.att.net...
>
> "John Walton" <jdwalton@comcast.net> wrote in message
> news:StSdnQS28O7goOjdRVn-vw@comcast.com...
> > Reliable End Mill has a couple HP3586C recievers for sale on EBay --
along
> > with some other goodies -- I point this out since I am delighted with
the
> > ovenized 3586C which I own. There are also a lot of other HP goodies,
> > probably going cheap, on his list of auctions. (This isn't a bald plug
> for
> > REM, but I have dealt with them in the past and they are good guys.)
> >
> >
>
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=3807654750&category=4678&sspagename=STR
K%3AMEBBI%3AIT&rd=1
>
> Does this one have LSB/USB?
>
> "PM"
>
What about RTTY, can I work PSK on it?

2794. FA: Heath Heathkit SB SB-610 Monitor Scope Assembly Manual

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-09 01:48:28 UTC
From: Will <willbrown@nospamsympatico.ca>
Message-ID: <Vgndc.38974$wq4.1965815@news20.bellglobal.com>
Source record: 27031

http://cgi.ebay.ca/ws/eBayISAPI.dll?ViewItem&item=3090396736&category=4671

2795. Re: FullDuplex like 10Ghz gunn.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-09 02:23:53 UTC
From: Scott <acepilot@bloomer.net>
Message-ID: <0Iodc.875$KG2.1660@reggie.win.bright.net>
Source record: 27032

OK, I see what you're up to. SHF Microwave has gunnplexers, etc. The website is at http://www.shfmicro.com/ I believe you will need two gunnplexer modules and two I.F. receivers of some sort to run full duplex. Most people running WBFM on 10 GHz use an I.F. of either 30 MHz (to be used with an HF rig) or 100 MHz (to use a standard AM/FM radio as the I/F. rig. That's the way I ran mine back in the 90's). Hope this gives you a starting point...

Scott
N0EDV

pbreed@netburner.com wrote:
> I want to do it on 6M.
> I'm asking about a fullduplex link, "Like" is done with the 10Ghz Gunn.
> I don't intend to use 10Ghz.
>
> Fullduplex:
> Control up link, and Telemetry downlink, GPS position, Altitude Airspeed etc....
>
> I'm currently doing this with a 6M TX and a 900Mhz telemetry Tx, but it makes for two antennas,
> two radios in the plane etc.... I would kill for 100gm less weight.
>
>
> As for range, I'm trying to set some FAI records with the plane.
> See:
> http://records.fai.org/models/ Select the subclass:
> Sub-class F5-SOL (Aeroplane, electric motor (solar cells))
>
> The current Model Altitude record is about 7K ft.
> I'd like to do 10K and with some wind it could easily get several miles down range.
> Thus 20 miles to have some margin.
>
> Last Years Plane (With less efficient cells.)
> Launch: http://www.rasdoc.com/splinter/DCP01221.JPG
> Proof it flies: http://www.rasdoc.com/splinter/ItFlies.JPG
> Plane has 144 inch span and weighs about 2Kg or 4.4lbs.
>
>
> Paul (Kl7JG)
>

2796. Re: Making RF Chokes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-09 07:51:49 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404082351.4d3bd714@posting.google.com>
Source record: 27033

songoku_@ig.com.br (Hayato) wrote in message
news:<9ec5b8a8.0404080748.23406f90@posting.google.com>...
> Hello,
> I'm building a FM Tx and I'm having some problems to find 100uH RF Chokes here.
> So I decide to wind a 100uH air-core inductor, is there any problems on that?
> My inductor especifications are:
> -Wire: AWG 24.
> -Core diameter: 35 mm.
> -Spires: 48, 2 layers of 24 spires each.

You didn't say what frequency the choke will be used for, nor where in
the circuit. But it seems like 100uH is quite a large inductance for
the usual FM frequencies. Winding the choke as two layers will lower
the self-resonant frequency a lot. Even with a very carefully
designed 100uH choke, it will be very difficult to get the
self-resonant frequency up in the 100MHz region. And at 100MHz, 100uH
would give you 62kohms reactance (if you could actually construct it
with high enough self-resonant frequency), which would be more than
you would need in any 100MHz circuit I can think of. If it's a
low-impedance solid state circuit, 100nH might be enough!

Please tell us more. What current do you need to pass in this choke?
How is it used in the circuit? What frequency will it be used at?

Cheers,
Tom

2797. HT transformer value?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-09 13:17:49 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <g38d70hluskps2m91cl2r0pm8ibb5cvq7s@4ax.com>
Source record: 27034

Hi guys,

I've inherited a bunch of HT transformers from a an old ham who sadly went silent key a while back. They're all pretty old; typically around 1200V output and on average I guess about 9" cube in size. He used to pick them up at rallies and so forth to make linear amps with. I plan to keep a couple for myself, but if I sell the others, what sort of price should I ask roughly?

2798. RF filters and Impedance Matching

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-09 17:38:30 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <9bnd705lih7erbm4vjfbl4m9gjcgs090rj@4ax.com>
Source record: 27035
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Hi all,

On page 57 of RF circuit Design, Chris Bowick sets out a filter design example. I've posted this to a.b.s.e under the same subject header. He claims that the filter in question - a low pass Butterwoth - matches 50 ohms source to 500 ohms load. However, having checked this out with the aid of a Smith Chart, it appears there is some capacitive reactance present that would require the addition of a shunt inductor to neutralize. However, this would of course totally screw up the filter's characteristics. Upon closer examination, it appears impossible that this type of arrangement could ever be designed without introducing some reactance into the signal path. Or am I nuts? I'd always thought of these kind of filters as being purely resistive overall at Fo but is that really the case? It don't look like it...

Design criteria:

Centre frequency: 35Mhz
Response > -60dB at 105Mhz
zero ripple(!)
Rs 50 ohms
Rl 500 ohms

2799. Re: RF filters and Impedance Matching

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-09 18:29:00 UTC
From: Kevin Aylward <kevindotaylwardEXTRACT@anasoft.co.uk>
Message-ID: <CWBdc.108$YA6.43@newsfe1-win>
Source record: 27036
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Paul Burridge wrote:
> Hi all,
>
> On page 57 of RF circuit Design, Chris Bowick sets out a filter design
> example. I've posted this to a.b.s.e under the same subject header. He
> claims that the filter in question - a low pass Butterwoth - matches
> 50 ohms source to 500 ohms load. However, having checked this out with
> the aid of a Smith Chart, it appears there is some capacitive
> reactance present that would require the addition of a shunt inductor
> to neutralize. However, this would of course totally screw up the
> filter's characteristics. Upon closer examination, it appears
> impossible that this type of arrangement could ever be designed
> without introducing some reactance into the signal path. Or am I nuts?
> I'd always thought of these kind of filters as being purely resistive
> overall at Fo but is that really the case? It don't look like it...
>

Of course it isn't. A 1st order butterworth is a simple RC. At its
characteristic frequency, i.e. its 3db point, it has 45 degs of phase
shift in its impedance. Note, centre frequency is meaningless for a LP
and HP. In general the input impedance can be all over the place for a
filter.

Kevin Aylward
salesEXTRACT@anasoft.co.uk
http://www.anasoft.co.uk
SuperSpice, a very affordable Mixed-Mode
Windows Simulator with Schematic Capture,
Waveform Display, FFT's and Filter Design.

2800. Re: RF filters and Impedance Matching

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-09 19:28:38 UTC
From: John Larkin <jjlarkin@highSNIPlandTHIStechPLEASEnology.com>
Message-ID: <autd70dmbm582qcmd6av39fqaoolaa6uol@4ax.com>
Source record: 27037
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Fri, 09 Apr 2004 18:38:30 +0100, Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote:

>Hi all,
>
>On page 57 of RF circuit Design, Chris Bowick sets out a filter design
>example. I've posted this to a.b.s.e under the same subject header. He
>claims that the filter in question - a low pass Butterwoth - matches
>50 ohms source to 500 ohms load. However, having checked this out with
>the aid of a Smith Chart, it appears there is some capacitive
>reactance present that would require the addition of a shunt inductor
>to neutralize. However, this would of course totally screw up the
>filter's characteristics. Upon closer examination, it appears
>impossible that this type of arrangement could ever be designed
>without introducing some reactance into the signal path. Or am I nuts?
>I'd always thought of these kind of filters as being purely resistive
>overall at Fo but is that really the case? It don't look like it...
>
>Design criteria:
>
>Centre frequency: 35Mhz
>Response > -60dB at 105Mhz
>zero ripple(!)
>Rs 50 ohms
>Rl 500 ohms

Most LC filters are designed to produce the advertised frequency
response, given a resistive generator and a resistive load, but they
don't generally look like nice resistors themselves, at either port.

There are filters designed to look like a resistor, or nearly so,
wideband. Picosecond Pulse Labs, among others, sell such. We had a
thread on s.e.d. a while back, and Jeroen Belleman posted some nice
work, some original techniques to make constant-resistance filters.

John

2801. Re: HT transformer value?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-09 19:35:24 UTC
From: averyfineman@aol.com
Message-ID: <20040409153524.23344.00000284@mb-m14.aol.com>
Source record: 27038

In article <g38d70hluskps2m91cl2r0pm8ibb5cvq7s@4ax.com>, Paul Burridge
<pb@notthisbit.osiris1.co.uk> writes:

>I've inherited a bunch of HT transformers from a an old ham who sadly
>went silent key a while back. They're all pretty old; typically around
>1200V output and on average I guess about 9" cube in size. He used to
>pick them up at rallies and so forth to make linear amps with. I plan
>to keep a couple for myself, but if I sell the others, what sort of
>price should I ask roughly?

I'd suggest looking at www.hammond.com and going to their
relatively new transformer division page. There are prices there
for the "old" tube (excuse, valve) type transformers that they
have available from the Canadian subsidiary.

Hammond products, including the transformer line, are listed
on the DigiKey and Mouser distributor sites here across the
pond...can also be a guide.

To sell "HT transformers" over here, labeling them "high voltage"
instead of "high tension" might be better for getting sales bites.
"HT" over here generally means "Handheld Transceiver." A
9-inch cube of iron and copper might be "handheld" by a
California Governor but few others... :-)

Bon chance.

Len Anderson
retired (from regular hours) electronic engineer person

2802. Re: RF filters and Impedance Matching

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-09 20:06:47 UTC
From: Helmut Sennewald <HelmutSennewald@t-online.de>
Message-ID: <c56voq$q8j$01$1@news.t-online.com>
Source record: 27039
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"Paul Burridge" <pb@notthisbit.osiris1.co.uk> schrieb im Newsbeitrag
news:9bnd705lih7erbm4vjfbl4m9gjcgs090rj@4ax.com...
> Hi all,
>
> On page 57 of RF circuit Design, Chris Bowick sets out a filter design
> example. I've posted this to a.b.s.e under the same subject header. He
> claims that the filter in question - a low pass Butterwoth - matches
> 50 ohms source to 500 ohms load.

Hello Paul,
to be honest, the circuit filters exactly as written. It is designed for
an input impedance of 50 Ohm and an output impedance of 500 Ohm.

> However, having checked this out with
> the aid of a Smith Chart, it appears there is some capacitive
> reactance present that would require the addition of a shunt inductor
> to neutralize. However, this would of course totally screw up the
> filter's characteristics. Upon closer examination, it appears
> impossible that this type of arrangement could ever be designed
> without introducing some reactance into the signal path. Or am I nuts?

You are wrong here. I assume that the book doesn't claim to do an
impedance match to 50 Ohm input resistance for max. output power.
It's just designed as a passive lowpass filter with different source
and load resistor having a flat amplitude response. Nothing more.
The input resistance of this filter is for example 5 Ohm at f=12MHz.
According to the seven reactive parts, it has 3 notches and 3 resonances
for the input resistance over the frequency band from 0 to 200Mhz and
an additional zero at infinity frequency.

> I'd always thought of these kind of filters as being purely resistive
> overall at Fo but is that really the case? It don't look like it...
>

There is always a phase shift at the 3dB corner frequency
of any lowpass filter.

> Design criteria:
>
> Centre frequency: 35Mhz
This the -3dB corner frequency!
> Response > -60dB at 105Mhz
> zero ripple(!)
> Rs 50 ohms
> Rl 500 ohms

>

Paul's filter from a.b.s.e.

A netlist file for the old SPICE people.

```
* Butter50_500_35MHz.asc
Rs N003 in 50
L1 in N001 152n
L2 N001 N002 323n
L3 N002 out 414n
RL out 0 500
C4 out 0 143p
C3 N002 0 153p
C2 N001 0 97p
C1 in 0 21p
V1 N003 0 AC 1
.ac dec 100 10k 200MEG
.end
```

Best Regards,
Helmut

PS: Such filters are analyzed with the .AC command in (LT)-SPICE.

The simulation type: .AC DEC 100 10k 1G
The SPICE voltage source: V1 0 AC 1

V(in) is the node after the source resistor Rs.
The frequency response: Logarithmic Bode Plot V(out)
The input impedance: Logarithmic Bode Plot V(in)/I(Rs)

If you want the output impedance, then you have to add a source in
series with the load RL and stimulate from the output side only.
The output impedance: Logarithmic Bode Plot: V(out)/I(RL)

For the newcomers to this group:

LTSPICE is free SPICE with graphical GUI from www.linear.com/software
There is a special newsgroup for LTSPICE:
http://groups.yahoo.com/group/LTspice/

This is the schematic file of this filter for LTSPICE.
Save it in a file named "Butter50_500_35MHz.asc".

```
Version 4
SHEET 1 880 708
WIRE 0 176 32 176
WIRE 208 176 240 176
WIRE 368 176 400 176
WIRE 512 176 560 176
WIRE 688 336 560 336
WIRE 688 336 688 304
```

```
WIRE 400 224 400 176
WIRE 400 176 432 176
WIRE 240 224 240 176
WIRE 240 176 288 176
WIRE 64 224 64 176
WIRE 64 176 128 176
WIRE 64 288 64 336
WIRE 64 336 -80 336
WIRE 240 288 240 336
WIRE 240 336 64 336
WIRE 400 288 400 336
WIRE 400 336 240 336
WIRE 560 288 560 336
WIRE 560 336 400 336
WIRE 560 224 560 176
WIRE 560 176 688 176
WIRE 688 176 688 224
WIRE -80 176 -224 176
WIRE -224 176 -224 224
WIRE -80 368 -80 336
WIRE -80 336 -224 336
WIRE -224 336 -224 304
WIRE 32 176 64 176
FLAG -80 368 0
FLAG 688 176 out
FLAG 32 176 in
SYMBOL res -96 192 R270
WINDOW 0 32 56 VTop 0
WINDOW 3 0 56 VBottom 0
SYMATTR InstName Rs
SYMATTR Value 50
SYMBOL ind 112 192 R270
WINDOW 0 32 56 VTop 0
WINDOW 3 5 56 VBottom 0
SYMATTR InstName L1
SYMATTR Value 152n
SYMBOL ind 272 192 R270
WINDOW 0 32 56 VTop 0
WINDOW 3 5 56 VBottom 0
SYMATTR InstName L2
SYMATTR Value 323n
SYMBOL ind 416 192 R270
WINDOW 0 32 56 VTop 0
WINDOW 3 5 56 VBottom 0
SYMATTR InstName L3
SYMATTR Value 414n
SYMBOL res 672 208 R0
SYMATTR InstName RL
SYMATTR Value 500
SYMBOL cap 544 224 R0
```

```
SYMATTR InstName C4
SYMATTR Value 143p
SYMBOL cap 384 224 R0
SYMATTR InstName C3
SYMATTR Value 153p
SYMBOL cap 224 224 R0
SYMATTR InstName C2
SYMATTR Value 97p
SYMBOL cap 48 224 R0
SYMATTR InstName C1
SYMATTR Value 21p
SYMBOL voltage -224 208 R0
WINDOW 123 21 106 Left 0
WINDOW 39 0 0 Left 0
SYMATTR InstName V1
SYMATTR Value ""
SYMATTR Value2 AC 1
TEXT -192 24 Left 0 !.ac dec 100 10k 200MEG
```

2803. Re: RF filters and Impedance Matching

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-09 20:08:18 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <107e0lkkskbh94d@corp.supernews.com>
Source record: 27040
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Filters can be lossy or, in theory, lossless. An example of a lossy filter is a first order lowpass, consisting of a series R and shunt C. But let's talk about the passive lossless variety, made solely of inductors and capacitors, since I think that's what you're asking about. In practice, inductors in particular can have appreciable loss, and this complicates analysis a great deal. But for many applications, for example HF filters that aren't too sharp, loss can be negligible for practical purposes. So I'll further simplify things by talking about only theoretically lossless LC filters.

A passive lossless filter can't achieve any frequency selection by means of loss, so it depends entirely on mismatch. Among other things, that means that a passive filter works properly only when both the source and load impedances are the ones it was designed for. A lossless lowpass filter has zero loss only at DC. At DC, or very low frequencies, then, the input is matched to the output. If the filter is designed for 50 ohms in and out, for example, you'd see 50 ohms resistive at the filter input when the output is terminated in 50 ohms. It can also be designed for other transformation ratios -- imagine the same filter with a broadband 10:1 impedance transformer at one end. There are other ways to effect the transformation, but the end result is the same.

But as you go up in frequency, the attenuation of the filter increases. In the case of an LC filter, that means -- it has to mean -- that a mismatch is occurring. The attenuation typically rises slowly and not too much until you approach the cutoff frequency, but there are an infinite number of possible filter shapes, and some can vary pretty wildly in the pass band (the frequency range from DC to cutoff). Butterworth, Chebyshev, and a number of other canonical types have a substantial amount of attenuation, and therefore mismatch, at frequencies quite a bit below cutoff.

An interesting passive LC filter type is a "quarter wave" lowpass filter. It's so called because it mimics a quarter wave transmission line over a moderate range of frequencies. This is a pi section filter (although like any other pi, it can also be realized as a tee) consisting of a series inductor and shunt capacitors. Each has a reactance at the operating frequency equal to the source and load resistance, which for the simple form I'm describing, are equal. This filter is unusual(*) in that it *is* perfectly matched at the operating frequency, which is just below the cutoff frequency. The cutoff isn't particularly sharp, but sections can be cascaded for better high frequency attenuation without changing the impedance match at the operating frequency. It's a really handy tool for homebrew transmitters,

where additional harmonic attenuation is needed, since sections can be added without necessitating output circuit redesign.

(*) It's unusual in my experience with modern filter design, but I suspect this might be a common characteristic in "image parameter" designed filters -- a technique I never learned.

Roy Lewallen, W7EL

Paul Burridge wrote:

> Hi all,
>
> On page 57 of RF circuit Design, Chris Bowick sets out a filter design
> example. I've posted this to a.b.s.e under the same subject header. He
> claims that the filter in question - a low pass Butterwoth - matches
> 50 ohms source to 500 ohms load. However, having checked this out with
> the aid of a Smith Chart, it appears there is some capacitive
> reactance present that would require the addition of a shunt inductor
> to neutralize. However, this would of course totally screw up the
> filter's characteristics. Upon closer examination, it appears
> impossible that this type of arrangement could ever be designed
> without introducing some reactance into the signal path. Or am I nuts?
> I'd always thought of these kind of filters as being purely resistive
> overall at Fo but is that really the case? It don't look like it...
>
> Design criteria:
>
> Centre frequency: 35Mhz
> Response > -60dB at 105Mhz
> zero ripple(!)
> Rs 50 ohms
> Rl 500 ohms
>

2804. Re: HT transformer value?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-09 21:54:40 UTC
From: Bill <Bill@birchnet.demon.co.uk>
Message-ID: <tfzVVeLguxdAFwHO@birchnet.demon.co.uk>
Source record: 27041

In message <20040409153524.23344.00000284@mb-m14.aol.com>, Avery Fineman
<averyfineman@aol.com> writes
> I'd suggest looking at www.hammond.com and going to their
Appears to be a greetings card company!

Do you know the power rating of the transformers?
--
Bill

2805. Car problem homebrew group

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-09 23:01:25 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BC9CA384.40C9%outhouse@midcoast.com>
Source record: 27042

Would anybody here know of a group where car electrical systems and
modifications would be discussed,

I have more wires in my hand than my new rear light has connections for

that sort of problem

UWe

2806. Re: RF filters and Impedance Matching

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-09 23:08:20 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <107eb762m23n1f0@corp.supernews.com>
Source record: 27043
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Correction:

Roy Lewallen wrote:
> . . .
> A passive lossless filter can't achieve any frequency selection by means
> of loss, so it depends entirely on mismatch. Among other things, that
> means that a passive filter works properly only when both the source and
> load impedances are the ones it was designed for. A lossless lowpass
> filter has zero loss only at DC. . .

The last sentence should read:

A lossless lowpass filter has zero attenuation only at DC.

The attenuation is often called "mismatch loss", but in the remainder of what I wrote, I use the term loss only to mean dissipative loss -- which "mismatch loss" isn't.

Roy Lewallen, W7EL

2807. Re: building a duplexer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-09 23:45:50 UTC
From: Rick Karlquist N6RK <richard@karlquist.removethis.com>
Message-ID: <OAGdc.107922$w54.759834@attbi_s01>
Source record: 27044

This link might be useful

http://www.n6rk.com/diplexer/diplexer.pdf

Rick N6RK

"Jeremy Salch" <salchNOSPAM@tblx.net> wrote in message
news:c501nc$1lfn08$3@ID-225834.news.uni-berlin.de...
> Paul_Morphy wrote:
>
> >
> > "Jeremy Salch" <salchNOSPAM@tblx.net> wrote in message
> > news:c4vto6$1lfn08$2@ID-225834.news.uni-berlin.de...
> >>
> >> Does anyone have plans or a website that has plans for building a
> duplexer
> >> with 2m / HF inputs ?
> >
> > A duplexer is a set of quarter-wavelength sections of transmission line.
> On
> > 10 meters your duplexer elements would be about eight feet tall. Are you
> > sure you want one for HF?
> >
> > If you google for "2 meter duplexer" you will find quite a few plans on
> > websites. Most people avoid the trouble of making their own and just buy
a
> > set.
> >
> > "PM"
>
> I have one which has a input for 0-90Mhz then 120-500Mhz on the other
side,
> and it puts them both onto one coax line. Is that called a duplexer as
well
> or is it called something else ?
>
>
> --
> Registered Linux User #346565
>

2808. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-09 23:59:12 UTC
From: n2ey@aol.comSPAMNO
Message-ID: <20040409195912.12769.00000222@mb-m16.aol.com>
Source record: 27045

In article <BC9B3169.3F71%outhouse@midcoast.com>, Uwe <outhouse@midcoast.com>
writes:

>Yes this is all very helpful. Indeed I was thinking that it would have taken
>me a very long time to figure this out by myself, if at all.
>
>I put another choke in there, a Hammond 1535B, the self resonant min. frequ.
>is 1.3Mhz.

That should be a good one.
>
>I guess it does take some deeper inside what parameters to look for since
>this one improves things slightly but not yet altogether (slightly more
>pronounced dip).
>
>Who carries the sort of chokes you were refering to?

"Play Things of The Past" (www.oldradioparts.com) is one. Antique Electric
Supply (www.tubesandmore.com) is another. JWMiller still makes pie-wound 2.5
millihenry chokes with phenolic (no iron) cores. Check Digi-Key and Mouser.

Also google "AC1 ameco" - several websites with more info. One site I visited
(whose url I didn't save!) listed the plate voltage as approximately 325 volts.
This site also cautioned that the original grid resistor (47 K?) is way too
high, and that better results are obtained with a grid resistor of 4.7 K to 15
K. The author says the smaller value grid resistor gives less chirp.

The traditional amateur way to measure grid current is with a small lamp in
series with the xtal. "Small" means a #48 or #49 bulb - 2 volts at 60 ma. The
common #47 lamp needs 6.3 volts at 150 ma. and is way too insensitive. Small
flashlight lamps such as used in single-cell penlights may also be useful.

But the lamp should only be used for testing. Its resistance may cause chirp.

and before I forget:

CONGRATS ON YOUR GENERAL, Uwe!

73 de Jim, N2EY

2809. Only 16 Hours Left to Bid - Heathkit SB-620 Scanalyser Monitor Scope

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 00:38:10 UTC
From: Will <willbrown@nospamsympatico.ca>
Message-ID: <2lHdc.42777$wq4.2358645@news20.bellglobal.com>
Source record: 27046

Only one like it on Ebay. Soon to be gone!

http://cgi.ebay.ca/ws/eBayISAPI.dll?ViewItem&item=3089902768&category=4671

2810. Re: HT transformer value?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 01:02:33 UTC
From: averyfineman@aol.com
Message-ID: <20040409210233.03943.00000201@mb-m29.aol.com>
Source record: 27047

In article <tfzVVeLguxdAFwHO@birchnet.demon.co.uk>, Bill
<Bill@birchnet.demon.co.uk> writes:

>In message <20040409153524.23344.00000284@mb-m14.aol.com>, Avery Fineman
><averyfineman@aol.com> writes
>> I'd suggest looking at www.hammond.com and going to their
>Appears to be a greetings card company!
>
>Do you know the power rating of the transformers?

Ooops, my fault.

http://www.hammondmfg.com/claspg.htm

Gets everyone to Hammond's transformer page. Interesting stuff
on links from there.

http://www.hammondmfg.com/

is the Hammond home page with lots of enclosures, chassis, etc.,
plus a link to transformers.

www.hammond.com is indeed the home page of Hammond
Promotions with some good prices on bulk orders of cards
by companies. Was there last week. But for business, not
transformers. :-)

Len Anderson
retired (from regular hours) electronic engineer person

2811. Re: RF filters and Impedance Matching

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 01:19:48 UTC
From: "Peter O. Brackett" <no_such_address@ix.netcom.com>
Message-ID: <UYHdc.2738$zj3.2682@newsread3.news.atl.earthlink.net>
Source record: 27048
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Roy:
[snip]
> The last sentence should read:
>
> A lossless lowpass filter has zero attenuation only at DC.
:
:
> Roy Lewallen, W7EL

Ummmm... no that statement is only true for one type of approximation
polynomial.

A lossless low pass filter has zero attenuation at its' reflection
coefficient zeros.

If it is a maximally flat low pass. a.k.a. Butterworth. then all of the
reflection zeros
are located at DC, but for any other type, e.g. Chebychev, Cauer/Darlington,
General Parameter,
etc, etc... this is not true.

Such a filter will have zero loss at the designed reflection zeros which are
distributed at various
appropriate frequencies across the passband according to the dictates of the
approximation
polynomials.

Aside: Reflection zeros are also known as Return Loss [Echo Loss] poles.
These are the
pass band frequencies of zero loss for lossless LC filters designed
according to modern
insertion loss methods. No one really knows where the reflection zeros of
an image
parameter LC filter are, one has to find them by analysis after the design.
Whereas
with insertion loss design the frequencies of zero loss [the reflection
zeros] are specified
by the approximation polynomials, specifically the reflection zero
polynomial usually
designated by F(s). In fact modern insertion loss design begins with a
specification
of attenuation ripple between zero loss and the maximum loss in the pass
band. The
frequencies of zero loss then become the zeros of the reflection zero
polynomial F(s).

The attenuation in the stop band results in the specification of the loss pole polynomial
P(s) whose zeros are the so called loss poles or attenuation poles. The natural mode
polynomial of the filter E(s) whose zeros are known as the natural modes or sometimes
just "the filter poles" is formed from the loss poles and reflection zeros using Feldtkeller's
Equation.

E(s)E(-s) = P(s)P(-s) +k^2F(s)F(-s)

In the approximation process the stopband attenuation is set first by "placing" the loss poles
in the stopband, i.e. determining the polynomial P(s). Then from the desired passband
attenuation and type of approximation desired; maximally flat, equiripple, etc... the
reflection zeros F(s) are determined and finally from Feldtkeller's Equation and the ripple
factor k, the natural modes or E(s) is determined.

Then the LC filter is synthesized from either or both of the short circuit or open circuit
reactance functions which are formed from even and odd parts of E and F, for example.

X = (Eev - Fev)/(Eod + Fod), etc...

You can review all of this in the very practical and professionally oriented textbook:

Adel S. Sedra and Peter O. Brackett, "Filter Theory and Design: Active and Passive",
Matrix Publishers, Champaign, IL 1978.

Another good practical and professionally oriented textbook is:

Louis Weinberg, "Network Analysis and Synthesis", McGraw-Hill, New York, 1962.

If you can get a copy of:

R. Saal and E. Ulbrich, "On the design of filters by synthesis", IRE Trans. Vol. CT-5,
No. 4, pp.284-327, Dec. 1958.

Bind it firmly and keep it in your library forever... you will have the whole story in a nutshell.

Saal and Ulbrich is "the bible" on LC filter design.

--
Peter

Freelance Professional Consultant
Signal Processing and Analog Electronics
Indialantic By-the-Sea, FL

2812. Re: RF filters and Impedance Matching

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 03:48:20 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <107erk72dqdb3be@corp.supernews.com>
Source record: 27049
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

You're correct, and I apologize. In fact, the example I gave of a "quarter wave" filter contradicts the statement about the attenuation. I was thinking of a Butterworth when I wrote it, but as you point out and as my own example shows, there are many other types for which the statement is wrong.

I apologize for the error. Thanks for the correction.

Roy Lewallen, W7EL

Peter O. Brackett wrote:

> Roy:
> [snip]
>
>>The last sentence should read:
>>
>>A lossless lowpass filter has zero attenuation only at DC.
>
> :
> :
>
>>Roy Lewallen, W7EL
>
>
> Ummmm... no that statement is only true for one type of approximation
> polynomial.
>
> . . .

2813. Re: Car problem homebrew group

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 11:51:20 UTC
From: Rv! <no@spam.here.thanks>
Message-ID: <1081597881.36772.0@iris.uk.clara.net>
Source record: 27050

try

News://uk.rec.cars.maintenance if it is available to you.
These guys know about most cars and are based around the
world. Also worth lookin at the server for your make of car
as there are plenty on newsgroups for car makers.

Rv!

2814. Re: Car problem homebrew group

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 11:52:41 UTC
From: Rv! <no@spam.here.thanks>
Message-ID: <1081597962.36846.0@iris.uk.clara.net>
Source record: 27051

Meant uk.rec.cars.maintenance

2815. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 12:20:34 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <i1pf70dofqikft59g90q94f0ms7e2up6fp@4ax.com>
Source record: 27052
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Sat, 10 Apr 2004 08:22:21 GMT, Robert Baer
<robertbaer@earthlink.net> wrote:

> Not a varactor (diode), but a switching diode; fast. Snap-off is lotz
>better.
> And they are a *LOT* smaller!

Thanks, Robert (and all else)
I'd prefer a diode solution as there'd be no power supply requirements
for each device. The tiny size is an added bonus, of course. But
what's the drawback with superfast switching diodes as against active
inverters? I'm sure there must be (at least) one...

2816. Re: RF filters and Impedance Matching

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 12:29:00 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <irpf70d0iaacfr5ghuo2a00vobsu5ve0ns@4ax.com>
Source record: 27053
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Fri, 9 Apr 2004 22:06:47 +0200, "Helmut Sennewald"
<HelmutSennewald@t-online.de> wrote:

>You are wrong here. I assume that the book doesn't claim to do an
>impedance match to 50 Ohm input resistance for max. output power.
>It's just designed as a passive lowpass filter with different source
>and load resistor having a flat amplitude response. Nothing more.
>The input resistance of this filter is for example 5 Ohm at f=12MHz.
>According to the seven reactive parts, it has 3 notches and 3 resonances
>for the input resistance over the frequency band from 0 to 200Mhz and
>an additional zero at infinity frequency.

Thanks, Helmut (and others)
You're right as usual. I'd carried out my checks at 35Mhz which is of
course the cut-off frequency. I'd forgot I was dealing with a LPF and
had proceeded on the basis that 35Mhz was the centre frequency of a
BPF. D'oh!
Sometimes I'm amazed by my own carelessness. No doubt my regular
admirers won't be, though. :-(
I'll do another series of plots for 20, 10 and 5 Mhz later and expect
to see the input impedance point shift accordingly.
Thanks for your sterling efforts, BTW.
p.

2817. Re: Car problem homebrew group

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 12:40:20 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <UWRdc.4248$K_.124213@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27054

"Rv!" <no@spam.here.thanks> wrote in message
news:1081597881.36772.0@iris.uk.clara.net...
> try
>
> News://uk.rec.cars.maintenance if it is available to you.
> These guys know about most cars and are based around the
> world. Also worth lookin at the server for your make of car
> as there are plenty on newsgroups for car makers.

And who would know more about automobile electrical problems than the
British? :>

"PM" (ex MGB owner)

2818. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 13:02:32 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <IfSdc.2360$xn4.16202@attbi_s51>
Source record: 27055
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

> I'd prefer a diode solution as there'd be no power supply requirements
> for each device. The tiny size is an added bonus, of course. But
> what's the drawback with superfast switching diodes as against active
> inverters? I'm sure there must be (at least) one...
>
Well for starters, they often, (VERY often) act as parametric devices and
oscillate on their own at the frequency of their choosing.

W4ZCB

2819. Re: Car problem homebrew group

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 13:03:51 UTC
From: "Gary S." <Idontwantspam@net>
Message-ID: <cvrf701mricn6h3f2vrnpjjf5rba55i0pa@4ax.com>
Source record: 27056

On Sat, 10 Apr 2004 12:40:20 GMT, "Paul_Morphy"
<nopaul_morphy2@coolgoose.com> wrote:

>"Rv!" <no@spam.here.thanks> wrote in message
>news:1081597881.36772.0@iris.uk.clara.net...
>> try
>>
>> News://uk.rec.cars.maintenance if it is available to you.
>> These guys know about most cars and are based around the
>> world. Also worth lookin at the server for your make of car
>> as there are plenty on newsgroups for car makers.
>
>And who would know more about automobile electrical problems than the
>British? :>
>
>"PM" (ex MGB owner)
>
Lucas, Prince of Darkness?

Q: Why do the British drink warm beer?
A: They have Lucas refrigerators.

and so on.

Happy trails,
Gary (net.yogi.bear)
---
at the 51st percentile of ursine intelligence

Gary D. Schwartz, Needham, MA, USA
Please reply to: garyDOTschwartzATpoboxDOTcom

2820. Homebrew dipole help please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 14:08:15 UTC
From: Bob <nubob5001@yahoo.com>
Message-ID: <pkTdc.12082$R37.8318@read1.cgocable.net>
Source record: 27057

Hi
We have put together a dipole, each leg is 66 feet. We put a 1:1 balun and it is running about 60 feet of 50 ohm coax. Presently it is about half way up the tower it is intended for so we could check the SWR before getting it up to the highest point. Presently each leg has some lags and dips, no major bends but it is just hanging there, over some bushes and the entire thing is over top of the house, and not touching anything but is very close to some steel guy wires (uninsulated).
Now we can only tune this down to a useable SWR on the 80m band. On all other bands we cannot tune it down to a safe operating range. We are using a good antenna tuner but cannot get anything useable except for 80m. Here we are able to tune the SWR right down.

Questions???
Would we be better without that balun?

Is the fact that the dipole is still too low and close to the guy wires (but not touching) our problem?

Any suggestions please??

Thank you.
Bob

2821. Re: Car problem homebrew group

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 15:18:29 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <6r3g70l4h6rb8n31msj58mhqescsc0ibnu@4ax.com>
Source record: 27058

On Sat, 10 Apr 2004 13:03:51 GMT, Gary S. <Idontwantspam@net> wrote:

>On Sat, 10 Apr 2004 12:40:20 GMT, "Paul_Morphy"
><nopaul_morphy2@coolgoose.com> wrote:
>
>>"Rv!" <no@spam.here.thanks> wrote in message
>>news:1081597881.36772.0@iris.uk.clara.net...
>>> try
>>>
>>> News://uk.rec.cars.maintenance if it is available to you.
>>> These guys know about most cars and are based around the
>>> world. Also worth lookin at the server for your make of car
>>> as there are plenty on newsgroups for car makers.
>>
>>And who would know more about automobile electrical problems than the
>>British? :>
>>
>>"PM" (ex MGB owner)
>>
>Lucas, Prince of Darkness?

So they say - and with good reason. IME Lucas electrical components
are total *crap.*

>
>Q: Why do the British drink warm beer?
>A: They have Lucas refrigerators.
>
>and so on.

Indeed.

2822. Re: Car problem homebrew group

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 16:16:44 UTC
From: "Gary S." <Idontwantspam@net>
Message-ID: <da7g70dbuiqh9i9curpr8lmp1qs759699j@4ax.com>
Source record: 27059

On Sat, 10 Apr 2004 16:18:29 +0100, Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote:

>On Sat, 10 Apr 2004 13:03:51 GMT, Gary S. <Idontwantspam@net> wrote:
>
>>On Sat, 10 Apr 2004 12:40:20 GMT, "Paul_Morphy"
>><nopaul_morphy2@coolgoose.com> wrote:
>>
>>>And who would know more about automobile electrical problems than the
>>>British? :>
>>>
>>Lucas, Prince of Darkness?
>
>So they say - and with good reason. IME Lucas electrical components
>are total *crap.*
>
>>Q: Why do the British drink warm beer?
>>A: They have Lucas refrigerators.
>>
>>and so on.
>
>Indeed.

On the other hand, it means that British sports cars have an excellent
safety record. Hard to have a crash when the car is up on a lift.

Happy trails,
Gary (net.yogi.bear)
---
at the 51st percentile of ursine intelligence

Gary D. Schwartz, Needham, MA, USA
Please reply to: garyDOTschwartzATpoboxDOTcom

2823. Re: Homebrew dipole help please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 17:08:28 UTC
From: Doug Smith W9WI <w9wi@invalid.invalid>
Message-ID: <40782A05.5020109@invalid.invalid>
Source record: 27060

Bob wrote:
> We have put together a dipole, each leg is 66 feet. We put a 1:1 balun and
> it is running about 60 feet of 50 ohm coax. Presently it is about half way
> up the tower it is intended for so we could check the SWR before getting it
> up to the highest point. Presently each leg has some lags and dips, no major
> bends but it is just hanging there, over some bushes and the entire thing is
> over top of the house, and not touching anything but is very close to some
> steel guy wires (uninsulated).
> Now we can only tune this down to a useable SWR on the 80m band. On all
> other bands we cannot tune it down to a safe operating range. We are using a
> good antenna tuner but cannot get anything useable except for 80m. Here we
> are able to tune the SWR right down.
>
> Questions???
> Would we be better without that balun?
>
> Is the fact that the dipole is still too low and close to the guy wires (
> but not touching) our problem?

My inclination is to believe there's something wrong with your antenna tuner. Are you certain it isn't in bypass? (of course, that antenna should be reasonably resonant in the 80m band *without* the tuner, so if the tuner isn't working at all you may well still have a reasonable SWR on 80) Can you get your hands on a 50-ohm dummy load? (try to load up the dummy load through the tuner, it should work on every band)

Can you get the SWR to dip on other bands? (i.e., is it just that the dips aren't deep enough to give a usable SWR?)

What kind of tuner are you using?

Having it low and close to guy wires will affect the resonances and efficiency, but with a good tuner you should still be able to tune out the reactance and get a reasonable match to 50 ohms, at least on *some* bands if not all.

Do you have access to a SWR analyzer?

FWIW, I've had good luck using 44 feet on one side, 88 feet on the other, and a 4:1 balun instead of 1:1. That's the same total length. It gives a decent SWR on every HF band except 160 and 15 meters - and it's close enough on 15 that the autotuner in my rig will match it.
--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com

2824. Re: Car problem homebrew group

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 18:31:55 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <b4fg709bd0m0vaq5o5m8r466bb9h9gsvcj@4ax.com>
Source record: 27061

On Sat, 10 Apr 2004 16:16:44 GMT, Gary S. <Idontwantspam@net> wrote:

>On the other hand, it means that British sports cars have an excellent
>safety record. Hard to have a crash when the car is up on a lift.

Not if the lift's switchgear is made by Lucas.

2825. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 20:16:23 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BC9DADD1.42BE%outhouse@midcoast.com>
Source record: 27062

in article 20040409195912.12769.00000222@mb-m16.aol.com, N2EY at
n2ey@aol.comSPAMNO wrote on 4/9/04 19:59:

> In article <BC9B3169.3F71%outhouse@midcoast.com>, Uwe <outhouse@midcoast.com>
> writes:
>
>> Yes this is all very helpful. Indeed I was thinking that it would have taken
>> me a very long time to figure this out by myself, if at all.
>>
>> I put another choke in there, a Hammond 1535B, the self resonant min. frequ.
>> is 1.3Mhz.
>
> That should be a good one.
>>
>> I guess it does take some deeper inside what parameters to look for since
>> this one improves things slightly but not yet altogether (slightly more
>> pronounced dip).
>>
>> Who carries the sort of chokes you were refering to?
>
> "Play Things of The Past" (www.oldradioparts.com) is one. Antique Electric
> Supply (www.tubesandmore.com) is another. JWMiller still makes pie-wound 2.5
> millihenry chokes with phenolic (no iron) cores. Check Digi-Key and Mouser.
>
> Also google "AC1 ameco" - several websites with more info. One site I visited
> (whose url I didn't save!) listed the plate voltage as approximately 325
> volts.
> This site also cautioned that the original grid resistor (47 K?) is way too
> high, and that better results are obtained with a grid resistor of 4.7 K to 15
> K. The author says the smaller value grid resistor gives less chirp.
>
> The traditional amateur way to measure grid current is with a small lamp in
> series with the xtal. "Small" means a #48 or #49 bulb - 2 volts at 60 ma. The
> common #47 lamp needs 6.3 volts at 150 ma. and is way too insensitive. Small
> flashlight lamps such as used in single-cell penlights may also be useful.
>
> But the lamp should only be used for testing. Its resistance may cause chirp.
>
> and before I forget:
>
> CONGRATS ON YOUR GENERAL, Uwe!
>
> 73 de Jim, N2EY
>

>

Thanks for the good wishes. Yes I got the ticket and I am out there with my 5 wpm but sometimes I really feel I don't belong there, 5 wpm in the "laboratory conditons" of the test is one thing, out there with all that noise and distraction is an altogether different thing and "stagefright" takes over sometimes.

(www.oldradioparts.com) seems like a good source, I might buy from them sometimes, I still need a transformer for the little transmitter. By the way about specifying these transformers, to get those 320Volt with a tube rectifier do you need a centertapped transformer with roughly 160V in each winding, what they call a 160-0-160??

I did see these other AC-1 sites and yes I do use the smaller resistor parallel to the crystal.

I read a little more about chokes in old radio amateur handbooks and it seems that even their placement in the chassis can be tricky.

I would love to know a way, because even with the 'new' choke the rig is not 'there' yet, to possibly make a test setup for this entire pi section and 'bench test it. Is there such a thing?
If I terminate it with a 50 load and feed my HF generator signal on the input (plate) side this would not be appropriate because the tx and the test generator have a different output impedance??

And what do you want the pi section to do, resonate at the transmitter frequency?

Ways to go...

73 Uwe

2826. Re: Homebrew dipole help please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 20:21:15 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.000000af.004d1cec@btinternet.com>
Source record: 27063

Hi,

Where is the tuner and where are you measuring the SWR?

Your range of antenna impedances is probably too great
for your particular arrangement. A ferrite cored balun is
not a magic device for matching oddball impedances to coax.
In this case it will be seeing about 50 ohms on 80m and a
1000 ohms or more on 40m.

Also they aren't a simple device but part transformer
and part transmission line and even their 1:1 ratio can be
in doubt unless presented with a certain range of
impedances. The much-used G5RV with balun suffers from this
problem but there at least Louis Varney did pick an antenna
and feeder length/impedance to try to keep the numbers
reasonable.

Cheers - Joe, G3LLV

2827. Re: Homebrew dipole help please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 20:58:54 UTC
From: Paul <paul@localhost.here>
Message-ID: <pan.2004.04.10.20.58.54.538587@localhost.here>
Source record: 27064

On Sat, 10 Apr 2004 10:08:15 -0400, Bob wrote:

> Hi
> We have put together a dipole, each leg is 66 feet. We put a 1:1 balun and
> it is running about 60 feet of 50 ohm coax. Presently it is about half way
> up the tower it is intended for so we could check the SWR before getting it
> up to the highest point. Presently each leg has some lags and dips, no major
> bends but it is just hanging there, over some bushes and the entire thing is
> over top of the house, and not touching anything but is very close to some
> steel guy wires (uninsulated).
> Now we can only tune this down to a useable SWR on the 80m band. On all
> other bands we cannot tune it down to a safe operating range. We are using a
> good antenna tuner but cannot get anything useable except for 80m. Here we
> are able to tune the SWR right down.
>
> Questions???
> Would we be better without that balun?
>
> Is the fact that the dipole is still too low and close to the guy wires (
> but not touching) our problem?
>
> Any suggestions please??
>
> Thank you.
> Bob

Hi Bob,

There's someone asked exactly the same question on
rec.radioamateur.antennas & rec.radio.amateur.equipment.

Perhaps you should see what their responses have been.

paul M

2828. Re: Homebrew dipole help please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 21:39:29 UTC
From: Marty <NOSPAM_vk2umj@yahoo.com.au_NOSPAM>
Message-ID: <c59pkm$qb8$1@austar-news.austar.net.au>
Source record: 27065

"Paul" <paul@localhost.here> wrote in message
news:pan.2004.04.10.20.58.54.538587@localhost.here...
> On Sat, 10 Apr 2004 10:08:15 -0400, Bob wrote:
>
> > Hi
> > We have put together a dipole, each leg is 66 feet. We put a 1:1 balun
and
> > it is running about 60 feet of 50 ohm coax. Presently it is about half
way
> > up the tower it is intended for so we could check the SWR before getting
it
> > up to the highest point. Presently each leg has some lags and dips, no
major
> > bends but it is just hanging there, over some bushes and the entire
thing is
> > over top of the house, and not touching anything but is very close to
some
> > steel guy wires (uninsulated).
> > Now we can only tune this down to a useable SWR on the 80m band. On all
> > other bands we cannot tune it down to a safe operating range. We are
using a
> > good antenna tuner but cannot get anything useable except for 80m. Here
we
> > are able to tune the SWR right down.
> >
> > Questions???
> > Would we be better without that balun?
> >
> > Is the fact that the dipole is still too low and close to the guy wires
(
> > but not touching) our problem?
> >
> > Any suggestions please??
> >
> > Thank you.
> > Bob
>
> Hi Bob,
>
> There's someone asked exactly the same question on
> rec.radioamateur.antennas & rec.radio.amateur.equipment.
>
> Perhaps you should see what their responses have been.
>

> paul M
>

That's because it's the same poster - rather than linking his posts he has posted to each NG seperately.....

2829. Re: Car problem homebrew group

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 22:06:59 UTC
From: "Gary S." <Idontwantspam@net>
Message-ID: <errg705niccnu2ub9e212iqtcl0dl3bngm@4ax.com>
Source record: 27066

On Sat, 10 Apr 2004 19:31:55 +0100, Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote:

>On Sat, 10 Apr 2004 16:16:44 GMT, Gary S. <Idontwantspam@net> wrote:
>
>
>>On the other hand, it means that British sports cars have an excellent
>>safety record. Hard to have a crash when the car is up on a lift.
>
>Not if the lift's switchgear is made by Lucas.

Yikes!

Hadn't thought of that.

One would think that a competitor would spring up.

Happy trails,
Gary (net.yogi.bear)
---
at the 51st percentile of ursine intelligence

Gary D. Schwartz, Needham, MA, USA
Please reply to: garyDOTschwartzATpoboxDOTcom

2830. Re: Car problem homebrew group

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-10 22:30:53 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <xA_dc.10313$i74.201694@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27067

"Gary S." <Idontwantspam@net> wrote in message
news:errg705niccnu2ub9e212iqtcl0dl3bngm@4ax.com...

> One would think that a competitor would spring up.

Well, when your competition is Renault and Fiat, you can afford to be
sloppy!

"PM"

2831. filter capacitor in series

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 00:31:00 UTC
From: Gordin <Gor_din@noSPAm.co>
Message-ID: <407891ab$1@news.iconz.co.nz>
Source record: 27068

Hello
I know that this may be a dumb question but I have found conflicting info about this on a few web pages.

If one takes say 5 capacitors each with a value of 500wv @ 150uf and connects them in series the result wold be 2500v @ 30uf. Correct?

Now if one takes another string just like the one above, and connects both strings across the output of the rectifier parallel to each other does this still give the 2500v but @ 60uf? or does the voltage drop?

Thanks

Gordon

2832. Need part for Tektronix 491 Spectrum Analyzer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 01:38:30 UTC
From: Dave Woolf <NOSPAMdwoolf@worldnet.att.net>
Message-ID: <4078A1A9.1050001@worldnet.att.net>
Source record: 27069
Cross-posted to: sci.electronics.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.boatanchors

I am looking for a part for a Tektronix
491 spectrum analyzer. It is called the
RFI filter or the Low Pass 275 V AC Filter
The Tek part number as listed in my
service manual is 119-0095-00. It is a
metal can that on one end has the male
connector that the AC cord plugs into.
The other end feeds out the line voltage
to the internal fuses.

The failure is interesting. At some AC
voltage around 105 - 110 volts there is
a breakdown and short that blows a 20 amp
circuit breaker. The short is not permanent
as I can turn the unit off/on and it will again
work below the above voltage. I know it is
the filter as this is the only thing that is
before the internal fuse which never blows.

I have a work-around by running the unit
on a variac and keeping the voltage at
around 100 volts. But I am not sure how
long this will work, so I would like to
replace the filter.

Anyone know of a source?

Please remove NOSPAM from my e-mail address
if replying directly to me.

Thanks,
Dave Woolf - K8RSP

2833. Re: filter capacitor in series

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 01:52:10 UTC
From: Allan Butler <ka0ies@hotmail.com>
Message-ID: <ex1ec.9943$rg5.37333@attbi_s52>
Source record: 27071

You are basically correct in your assumptions Gordon.

One thing to think about though is the balancing of voltages and currents across the string of capacitors. This is done by putting a high value resistor in parallel with each one of the capacitors.

The method can be seen in some of the plans for high boltage power supplies in the ARRL handbooks. If the voltages are not equally divided among the capacitors, one will get too much voltage and it will arc over internally.

This will effectively destroy that capacitor and then the rest of them will go bad in rapid succesion.

2834. Re: filter capacitor in series

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 01:52:19 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <4078A4D3.A21AF48D@rica.net>
Source record: 27070

Gordin wrote:
>
> Hello
> I know that this may be a dumb question but I have found conflicting
> info about this on a few web pages.
>
> If one takes say 5 capacitors each with a value of 500wv @ 150uf and
> connects them in series the result wold be 2500v @ 30uf. Correct?

Under ideal conditions (perfect capacitors with no leakage resistance, etc.) the effective capacitance would be 30 uf and the voltage capability would be 2500 volts. If the original capacitors were pre charged to 500 volts, the series connected capacitors would produce 2500 volts. As a practical matter 5 capacitors connected in series would require ballast resistors to equalize the leakage current, and some voltage derating to allow for incomplete equalization.

> Now if one takes another string just like the one above, and connects
> both strings across the output of the rectifier parallel to each other
> does this still give the 2500v but @ 60uf? or does the voltage drop?

Capacitors in parallel retain their voltage rating, and their capacitances add.

> Thanks
>
> Gordon

--
John Popelish

2835. Re: filter capacitor in series

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 01:59:04 UTC
From: Pasta chef <linguine@noodlefactory.com>
Message-ID: <r59h70579ia4s43tnrmrjn0t0j9ou2te98@4ax.com>
Source record: 27072

On Sun, 11 Apr 2004 12:31:00 +1200, Gordin <Gor_din@noSPAm.co> wrote:

>Hello
>I know that this may be a dumb question but I have found conflicting
>info about this on a few web pages.
>
>If one takes say 5 capacitors each with a value of 500wv @ 150uf and
>connects them in series the result wold be 2500v @ 30uf. Correct?
>
>Now if one takes another string just like the one above, and connects
>both strings across the output of the rectifier parallel to each other
>does this still give the 2500v but @ 60uf? or does the voltage drop?
>
>Thanks
>
>Gordon

Gordon,

That is correct with a 'but' thrown in. If the capacitor values are
different voltage will be unevenly distributed. With the typical + or
- 20% tolerance using the string at 2500 volts is living on the edge.

It might work. If it doesn't you will find out in a few minutes. You
don't want to have your face in the circuit when it fails.

2836. Re: filter capacitor in series

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 02:50:17 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <Jn2ec.6477$K_.205600@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27073

"Allan Butler" <ka0ies@hotmail.com> wrote in message
news:ex1ec.9943$rg5.37333@attbi_s52...

> This will effectively destroy that capacitor and then the rest of them
will
> go bad in rapid succesion.

And you will be among the select few who have experienced the Big Bang.

73,

"PM"

2837. Re: Need part for Tektronix 491 Spectrum Analyzer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 02:50:18 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <Kn2ec.6478$K_.206647@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27074
Cross-posted to: sci.electronics.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.boatanchors

"Dave Woolf" <NOSPAMdwoolf@worldnet.att.net> wrote in message
news:4078A1A9.1050001@worldnet.att.net...
>
> I am looking for a part for a Tektronix
> 491 spectrum analyzer. It is called the
> RFI filter or the Low Pass 275 V AC Filter

Well, with some care, you could make one. It's a lp filter that cuts off somewhere above 60 Hz. If you don't want to build one, try to find some discarded hospital electrical equipment. They all have filters that are tested for low leakage to the chassis.

73,

"PM"

2838. Re: filter capacitor in series

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 05:25:02 UTC
From: ehsjr@bellatlantic.net
Message-ID: <4078D6D5.7260D78C@bellatlantic.net>
Source record: 27075

Gordin wrote:
>
> Hello
> I know that this may be a dumb question but I have found conflicting
> info about this on a few web pages.
>
> If one takes say 5 capacitors each with a value of 500wv @ 150uf and
> connects them in series the result wold be 2500v @ 30uf. Correct?
>
> Now if one takes another string just like the one above, and connects
> both strings across the output of the rectifier parallel to each other
> does this still give the 2500v but @ 60uf? or does the voltage drop?
>
> Thanks
>

Others have correctly answered your question. I'll
add something: one should always derate the voltage
that a capacitor "sees" in a circuit from the cap's
rating. Using a 500 volt cap at 500 volts is asking
for trouble. (Or using 5 of them in series at 2500
volts.) If your circuit runs at 2500 volts, add at
least one cap to the string.

And do not forget the bleeder/equalizing resistors.
You'll need 2 resistors in series per cap. I'd use
2 51K 2 watt resistors in series across each cap, to
give a very good safety margin on the resistors' power
dissipation and voltage exposure. Others might recommend
a single 100K 2 watt resistor across each cap. But that
way, each resistor "sees" about 416 volts, and dissipates
a little over 1.7 watts. With two in series, each resistor
"sees" about half the voltage - and the power dissipation
capability is doubled.

> Gordon

2839. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 10:12:52 UTC
From: Robert Baer <robertbaer@earthlink.net>
Message-ID: <407927FA.CAE088B9@earthlink.net>
Source record: 27076
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Paul Burridge wrote:
>
> On Sat, 10 Apr 2004 08:22:21 GMT, Robert Baer
> <robertbaer@earthlink.net> wrote:
>
> > Not a varactor (diode), but a switching diode; fast. Snap-off is lotz
> >better.
> > And they are a *LOT* smaller!
>
> Thanks, Robert (and all else)
> I'd prefer a diode solution as there'd be no power supply requirements
> for each device. The tiny size is an added bonus, of course. But
> what's the drawback with superfast switching diodes as against active
> inverters? I'm sure there must be (at least) one...

An active inverter is S L O W by comparison; a good, fast diode can
have turnoff times in the tens of picoseconds region.

2840. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 12:14:56 UTC
From: Fred Bartoli <fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo>
Message-ID: <407936cf$0$17501$626a14ce@news.free.fr>
Source record: 27077
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"Robert Baer" <robertbaer@earthlink.net> a crit dans le message news:
407927FA.CAE088B9@earthlink.net...
> Paul Burridge wrote:
> >
> > On Sat, 10 Apr 2004 08:22:21 GMT, Robert Baer
> > <robertbaer@earthlink.net> wrote:
> >
> > > Not a varactor (diode), but a switching diode; fast. Snap-off is lotz
> > >better.
> > > And they are a *LOT* smaller!
> >
> > Thanks, Robert (and all else)
> > I'd prefer a diode solution as there'd be no power supply requirements
> > for each device. The tiny size is an added bonus, of course. But
> > what's the drawback with superfast switching diodes as against active
> > inverters? I'm sure there must be (at least) one...
>
> An active inverter is S L O W by comparison; a good, fast diode can
> have turnoff times in the tens of picoseconds region.

```
Don't let Paul dream too much about picoseconds.
In order to achieve results that good, one have to pay very careful
attention to "wiring". There's still a lot of room for Paul to improve his
PCB design skills ;-)

Thanks,
Fred.
```

2841. Re: Car problem homebrew group

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 13:14:15 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <ocgi70h4tc7147fvddu5ka3v88766ljf4l@4ax.com>
Source record: 27078

On Sat, 10 Apr 2004 22:06:59 GMT, Gary S. <Idontwantspam@net> wrote:

>One would think that a competitor would spring up.

One did: Bosch. :-)

2842. Re: Car problem homebrew group

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 13:14:16 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <vdgi70lgjsgoj08cc6vi9b5q4adbhdqds6@4ax.com>
Source record: 27079

On Sat, 10 Apr 2004 22:30:53 GMT, "Paul_Morphy"
<nopaul_morphy2@coolgoose.com> wrote:

>
>"Gary S." <Idontwantspam@net> wrote in message
>news:errg705niccnu2ub9e212iqtcl0dl3bngm@4ax.com...
>
>> One would think that a competitor would spring up.
>
>Well, when your competition is Renault and Fiat, you can afford to be
>sloppy!

It's tragic, really. With very few exceptions, the actual mechanical
engineering on British cars is typically of a very high standard. The
overall product, however, is let down by Lucas electrics (where used)
and not terribly good rust-prevention treatment (which is
unforgiveable in a climate like ours).

2843. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 13:14:18 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <orgi7059cq67v28ihp5fr561omseps329r@4ax.com>
Source record: 27080
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Sun, 11 Apr 2004 14:14:56 +0200, "Fred Bartoli"
<fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo> wrote:

>Don't let Paul dream too much about picoseconds.

Well, quite. I wouldn't know what to do with all those extra
harmonics, anyway. :-)
Diodes sound great, but I'm heavily put off by that comment earlier in
the thread that they're prone to self oscillation. :-(What's a
"parametric device" anyway?

>In order to achieve results that good, one have to pay very careful
>attention to "wiring". There's still a lot of room for Paul to improve his
>PCB design skills ;-)

Fair comment. But I *am* working on it!

2844. Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 14:11:03 UTC
From: maxfoo <maxfooHeadFromButt@punkass.com>
Message-ID: <l4ki70p7om5t8ekfph50o03ckfdrldcjij@4ax.com>
Source record: 27081
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

```
Anyone know of any solar cell vendors that sell
solar cell modules that put out 6-9volt @ 100mA?

TIA,

Remove "HeadFromButt", before replying by email.
```

2845. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 14:19:05 UTC
From: Leon Heller <leon_heller@hotmail.com>
Message-ID: <407953da$0$6543$cc9e4d1f@news-text.dial.pipex.com>
Source record: 27082
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"Paul Burridge" <pb@notthisbit.osiris1.co.uk> wrote in message
news:orgi7059cq67v28ihp5fr561omseps329r@4ax.com...
> On Sun, 11 Apr 2004 14:14:56 +0200, "Fred Bartoli"
> <fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo> wrote:
>
> >Don't let Paul dream too much about picoseconds.
>
> Well, quite. I wouldn't know what to do with all those extra
> harmonics, anyway. :-)
> Diodes sound great, but I'm heavily put off by that comment earlier in
> the thread that they're prone to self oscillation. :-(What's a
> "parametric device" anyway?

Parametric operation is when you have a parameter such as diode capacitance that varies with voltage. The non-linearity of the parameter makes it act as a multiplier, mixer or an amplifier. Parametric amplifiers (they need to be 'pumped' with an oscilllator) used to be very popular for microwave use. If you have inadvertently make yourself a parametric amplifier with your diode it could oscillate given the right conditions and do all sorts of strange things. In your hands, this is a strong possibility. 8-)

Leon

2846. SON-Y-DIGITAL???help

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 15:14:41 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1081696610.337942@smtp-1.griffin.com>
Source record: 27083

hi there.

this what the fet rf power tr is marked with..
Does anyone know who this is???

simon g0zen

2847. SON-Y-DIGITAL???help

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 15:16:45 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1081696623.149389@smtp-1.griffin.com>
Source record: 27084

hi there.

this what the fet rf power tr is marked with..
Does anyone know who this is???

simon g0zen

2848. Re: Need part for Tektronix 491 Spectrum Analyzer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 15:19:51 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1081696795.19389@smtp-1.griffin.com>
Source record: 27085
Cross-posted to: sci.electronics.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.boatanchors

well in the uk these are easy to find..RS FARNELL etc all stock them..they
must be available in the states...

check on the net..g0zen
"Dave Woolf" <NOSPAMdwoolf@worldnet.att.net> wrote in message
news:4078A1A9.1050001@worldnet.att.net...
>
> I am looking for a part for a Tektronix
> 491 spectrum analyzer. It is called the
> RFI filter or the Low Pass 275 V AC Filter
> The Tek part number as listed in my
> service manual is 119-0095-00. It is a
> metal can that on one end has the male
> connector that the AC cord plugs into.
> The other end feeds out the line voltage
> to the internal fuses.
>
> The failure is interesting. At some AC
> voltage around 105 - 110 volts there is
> a breakdown and short that blows a 20 amp
> circuit breaker. The short is not permanent
> as I can turn the unit off/on and it will again
> work below the above voltage. I know it is
> the filter as this is the only thing that is
> before the internal fuse which never blows.
>
> I have a work-around by running the unit
> on a variac and keeping the voltage at
> around 100 volts. But I am not sure how
> long this will work, so I would like to
> replace the filter.
>
> Anyone know of a source?
>
> Please remove NOSPAM from my e-mail address
> if replying directly to me.
>
> Thanks,
> Dave Woolf - K8RSP
>
>
>

2849. Buy and Sell Your Tube Gear!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 16:48:44 UTC
From: Jeff James <cbstv@optonline.net>
Message-ID: <MFeec.30932$Eg.6995163@news4.srv.hcvlny.cv.net>
Source record: 27086

```
The Boatanchor Classifieds
http://www.dealamerica.com/deal/cgi-bin/ads/bcads.cgi
Truly dedicated to vintage amateur radio
```

2850. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 16:50:19 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <fHeec.12267$_K3.48136@attbi_s53>
Source record: 27087
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

> Parametric operation is when you have a parameter such as diode
capacitance
> that varies with voltage. The non-linearity of the parameter makes it act
as
> a multiplier, mixer or an amplifier. Parametric amplifiers (they need to
be
> 'pumped' with an oscilllator) used to be very popular for microwave use.
If
> you have inadvertently make yourself a parametric amplifier with your
diode
> it could oscillate given the right conditions and do all sorts of strange
> things. In your hands, this is a strong possibility. 8-)
>

I think you have a point Leon. Paul, use a Schottky diode, (HP 5082-2835 or similar), use ZERO lead lengths. Make your PCBoard for the multiplier double sided, drill a hole the diameter of the diode length, wrap a copper tape ground from top to bottom on one edge of the hole, and drop the diode in the hole and solder both ends. One end to the ground tape, the other to the land to the filter for the harmonic you want. Then, drive with not more than +10 dBm of fundamental and hope a lot. It may STILL oscillate, but you've maximized your chances. When you start getting output from the filter (on the desired frequency which ought to be the only output you can get with the filter in place) you can start matching the input to the diode with "L" networks to maximize the output. Generally, the diode looks like a quite low impedance so the capacitor used, ought to wind up on the side of the inductor AWAY from the diode.

You can use an MMIC in the same manner to generate harmonics. Overdrive it and under feed it with DC. More output, more chance of self oscillation if you don't pay attention to detail.

A superior (less touchy) method of harmonic generation is just a full wave diode rectifier. Using signal diodes and a center tapped transformer, make a full wave doubler. Ground the DC out with an RF choke and you have 2F the input frequency with good suppression of the fundamental and odd harmonics built in. It's then a lot easier to filter the rest of the undesired out. Do two of those to get 4F out rather than trying to do it all in one stage. LOTS more efficiency.

W4ZCB

2851. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 16:52:25 UTC
From: Johnboy <jondne@knology.net>
Message-ID: <107itufeu94grfa@corp.supernews.com>
Source record: 27088
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

I think Harbor Freight had something.
Lots of stuff from places like Electronic Goldmine,
and others, real cheap.

> Anyone know of any solar cell vendors that sell
> solar cell modules that put out 6-9volt @ 100mA?
> TIA,

2852. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 17:06:23 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <40797B0F.B6211C76@rica.net>
Source record: 27089
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

maxfoo wrote:
>
> Anyone know of any solar cell vendors that sell
> solar cell modules that put out 6-9volt @ 100mA?
>
> TIA,
>
> Remove "HeadFromButt", before replying by email.

JC Whitney sells 12 volt panels competitively. These are not as
efficient when loaded to 6-9 volts, but they put out at least as much
current as when run with a 12 volt load.
http://www.jcwhitney.com/webapp/wcs/stores/servlet/ProductDisplay?catalogId=10101&storeId=10101&langId=-1&productId=218359&mediaCode=ZX&appId=385939
--
John Popelish

2853. Need MAX232's and 4 pin 1/8" plug - swap?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 17:17:57 UTC
From: Phillip Jockell <philj@xxspearnet.net>
Message-ID: <Xns94C88747D757Bpj12345pjpj@216.196.97.132>
Source record: 27090

I need 2 MAX232 level converters (DIP package).

Would like to swap for them. Have 2 MAX489CPD's
(RS485 transceivers) et al.
What do you need if these are not usable?
(active or passive parts, etc.)

Also need 2 4-pin 1/8" (3.5 mm) plugs.

Thanks for any offer,

Phil - N4GWV
(remove x's in email address for direct reply)

2854. Re: Homebrew dipole help please?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 17:25:43 UTC
From: Bob <nubob5001@yahoo.com>
Message-ID: <ccfec.21695$n37.1832239@read2.cgocable.net>
Source record: 27091

Hi all

I have it back up without the balun, and still have to use the coax for now.
I am able to tune it now on all bands but I am sure there is a lot of power
loss from the tuner. I grounded out all devices in the shack but still
receiving a lot of RF interference on tv, computer, and home alarm.
Thanks for all the advice, really appreciate it.

"Marty" <NOSPAM_vk2umj@yahoo.com.au_NOSPAM> wrote in message
news:c59pkm$qb8$1@austar-news.austar.net.au...
> "Paul" <paul@localhost.here> wrote in message
> news:pan.2004.04.10.20.58.54.538587@localhost.here...
> > On Sat, 10 Apr 2004 10:08:15 -0400, Bob wrote:
> >
> > > Hi
> > > We have put together a dipole, each leg is 66 feet. We put a 1:1 balun
> and
> > > it is running about 60 feet of 50 ohm coax. Presently it is about half
> way
> > > up the tower it is intended for so we could check the SWR before
getting
> it
> > > up to the highest point. Presently each leg has some lags and dips, no
> major
> > > bends but it is just hanging there, over some bushes and the entire
> thing is
> > > over top of the house, and not touching anything but is very close to
> some
> > > steel guy wires (uninsulated).
> > > Now we can only tune this down to a useable SWR on the 80m band. On
all
> > > other bands we cannot tune it down to a safe operating range. We are
> using a
> > > good antenna tuner but cannot get anything useable except for 80m.
Here
> we
> > > are able to tune the SWR right down.
> > >
> > > Questions???
> > > Would we be better without that balun?
> > >
> > > Is the fact that the dipole is still too low and close to the guy
wires
> (
> > > but not touching) our problem?

> > >
> > > Any suggestions please??
> > >
> > > Thank you.
> > > Bob
> >
> > Hi Bob,
> >
> > There's someone asked exactly the same question on
> > rec.radioamateur.antennas & rec.radio.amateur.equipment.
> >
> > Perhaps you should see what their responses have been.
> >
> > paul M
> >
>
> That's because it's the same poster - rather than linking his posts he has
> posted to each NG seperately.........
>
>

2855. Re: Need part for Tektronix 491 Spectrum Analyzer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 20:10:57 UTC
From: Tweetldee <masondg4499@comcast99.net>
Message-ID: <IDhec.119647$K91.332650@attbi_s02>
Source record: 27092
Cross-posted to: sci.electronics.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.boatanchors

"Dave Woolf" <NOSPAMdwoolf@worldnet.att.net> wrote in message
news:4078A1A9.1050001@worldnet.att.net...
>
> I am looking for a part for a Tektronix
> 491 spectrum analyzer. It is called the
> RFI filter or the Low Pass 275 V AC Filter
> The Tek part number as listed in my
> service manual is 119-0095-00. It is a
> metal can that on one end has the male
> connector that the AC cord plugs into.
> The other end feeds out the line voltage
> to the internal fuses.
>
> The failure is interesting. At some AC
> voltage around 105 - 110 volts there is
> a breakdown and short that blows a 20 amp
> circuit breaker. The short is not permanent
> as I can turn the unit off/on and it will again
> work below the above voltage. I know it is
> the filter as this is the only thing that is
> before the internal fuse which never blows.
>
> I have a work-around by running the unit
> on a variac and keeping the voltage at
> around 100 volts. But I am not sure how
> long this will work, so I would like to
> replace the filter.
>
> Anyone know of a source?
>
> Please remove NOSPAM from my e-mail address
> if replying directly to me.
>
> Thanks,
> Dave Woolf - K8RSP
>

http://www.sphere.bc.ca/test/tekparts.html
http://www.mpja.com/productview.asp?product=11184+FH
http://www.allelectronics.com/cgi-bin/category.cgi?category=485&type=store
http://www.alltronics.com/passive.htm

Google search for "power input module", "emi filter", or "line filter"

--
Dave M

Good judgement comes from experience, and a lot of that comes from bad judgement.

2856. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 21:40:25 UTC
From: Joerg <notthisjoergsch@removethispacbell.net>
Message-ID: <4079BC38.686A6AC8@removethispacbell.net>
Source record: 27093
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Another option might be to use a different voltage panel,
whatever has a good price, and then use a small switcher to run
the cells at their optimum load.

Regards, Joerg.

2857. Re: Message To America's Students: The War, The Draft, Your Future

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-11 23:23:21 UTC
From: Edward <reply@thegropup.thx>
Message-ID: <Jrkec.4186$l75.2555@newsread2.news.atl.earthlink.net>
Source record: 27094
Cross-posted to:
rec.radio.amateur.homebrew,psi.pipelineusa.literature,sunet.biomed.neurosci.neurophysiol,alt.buffy.europe,ubc.eus

Vote for Nader! Four more years!!!

<thomas@Vote.Nader> wrote in message
news:192c5efd.c8cfa430@host-69-48-73-244.roc.choiceone.net...
> We have been down this road before.

2858. Re: Message To America's Students: The War, The Draft, Your Future

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 00:01:06 UTC
From: shephed <smokey@twist1up.com>
Message-ID: <6%kec.17777$ng1.16980@fe2.columbus.rr.com>
Source record: 27095
Cross-posted to: rec.radio.amateur.homebrew,psi.pipelineusa.literature,sunet.biomed.neurosci.neurophysiol,alt.buffy.europe,sci.astro.amateur,ubc.eus

Don't matter who you vote for, Florida will screw it up again.

GO BLUEBIRDS!

2859. GS35B bias

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 01:25:52 UTC
From: Ron <ron_73@nomail.com>
Message-ID: <4079f007@news.iconz.co.nz>
Source record: 27096

Hi All,

I am working on an HF Amp project. This is my first tube (valve) project and it is all most finished and to my delight has great output. The question I have is about bias. I am using a 2N3055 transistor controlled by a 20 volt 1 watt zener with a rotary switch with s string of 3.3 volt 1 watt zeners that can be switched in or out to adjust the bias. This works great as I can adjust the key down no drive idle current from any where from 60 to 140ma. Now the problem is that in standby mode there is still about 20 at 30ma of plate current because of the so called "cut off" resistor (50K @ 10W) is still letting B- flow to the bias circuit. So can I simply eliminate this cut off resistor? Or would that cause the tube to open up and draw a massive amount of current? Or should I try to increase the value of the cutoff resistor?

Sorry if this is a simple question, But I just don't have much experience with power tube.

Thanks for your help
Ron

2860. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 04:16:32 UTC
From: wrongaddress@att.net
Message-ID: <ad025737.0404112016.2838de66@posting.google.com>
Source record: 26947
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

maxfoo <maxfooHeadFromButt@punkass.com> wrote in message
news:<l4ki70p7om5t8ekfph50o03ckfdrldcjij@4ax.com>...
> Anyone know of any solar cell vendors that sell
> solar cell modules that put out 6-9volt @ 100mA?
>
>
> TIA,
>

Lots of solar panels for sale on ebay. Here's a 12 volt 200mA
unit for 11 dollars.

Http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=41981&item=3187173830&rd=1

-Bill

2861. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 07:11:36 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <107kg9djqllki3c@corp.supernews.com>
Source record: 26948
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

You've asked for a module that puts out 6-9 volts @ 100 mA. A more accurate description of a solar panel would be that it puts out 100 mA at 6-9 volts. Solar cells act a lot more like a current source than a voltage source. So a panel that's rated at 100 mA at 12 volts will also put out about 100 mA at 6 or 9 volts. (It'll be a bit more than 100 mA, but not a whole lot more.) The open circuit voltage of a "12 volt" solar panel (one intended to deliver current to a 12-14 volt load) will be somewhere around 18 or 20 volts, and one specifically designed to work at 6 volts will be about half that, 9 or 10 volts. So if you have a 6 - 9 volt device that you want to power with solar cells, you'll have to float the panel across a battery, or use a voltage regulator to limit the voltage. (A properly sized zener diode would be adequate for the power level you're dealing with.) A 12 volt panel will be physically larger than you need, but it might be easier to find and less expensive.

If you're looking for a module that includes a built in voltage regulator to limit the voltage to 6 - 9 volts, you need to make it clear. Most of the responses seem to be referring to 12 volt panels, which will be fine if you limit the voltage, but won't be suitable if you need voltage regulation to be included in the external module.

Roy Lewallen, W7EL

Bill Bowden wrote:

> maxfoo <maxfooHeadFromButt@punkass.com> wrote in message
news:<l4ki70p7om5t8ekfph50o03ckfdrldcjij@4ax.com>...
>
>>Anyone know of any solar cell vendors that sell
>>solar cell modules that put out 6-9volt @ 100mA?
>>
>>
>>TIA,
>>
>
>
> Lots of solar panels for sale on ebay. Here's a 12 volt 200mA
> unit for 11 dollars.
>
> Http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=41981&item=3187173830&rd=1
>
>
> -Bill

2862. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 12:00:08 UTC
From: N2EY@AOL.COM
Message-ID: <c2356669.0404120400.7fbc484c@posting.google.com>
Source record: 26949

Uwe <outhouse@midcoast.com> wrote in message news:<BC9DADD1.42BE%outhouse@midcoast.com>...
> in article 20040409195912.12769.00000222@mb-m16.aol.com, N2EY at
> n2ey@aol.comSPAMNO wrote on 4/9/04 19:59:
>
> > In article <BC9B3169.3F71%outhouse@midcoast.com>, Uwe <outhouse@midcoast.com>
> > writes:
> >
> >> Yes this is all very helpful. Indeed I was thinking that it would have taken
> >> me a very long time to figure this out by myself, if at all.
> >>
> >> I put another choke in there, a Hammond 1535B, the self resonant min. frequ.
> >> is 1.3Mhz.
> >
> > That should be a good one.
> >>
> >> I guess it does take some deeper inside what parameters to look for since
> >> this one improves things slightly but not yet altogether (slightly more
> >> pronounced dip).
> >>
> >> Who carries the sort of chokes you were refering to?
> >
> > "Play Things of The Past" (www.oldradioparts.com) is one. Antique Electric
> > Supply (www.tubesandmore.com) is another. JWMiller still makes pie-wound 2.5
> > millihenry chokes with phenolic (no iron) cores. Check Digi-Key and Mouser.
> >
> > Also google "AC1 ameco" - several websites with more info. One site I visited
> > (whose url I didn't save!) listed the plate voltage as approximately 325
> > volts.
> > This site also cautioned that the original grid resistor (47 K?) is way too
> > high, and that better results are obtained with a grid resistor of 4.7 K to 15
> > K. The author says the smaller value grid resistor gives less chirp.
> >
> > The traditional amateur way to measure grid current is with a small lamp in
> > series with the xtal. "Small" means a #48 or #49 bulb - 2 volts at 60 ma. The
> > common #47 lamp needs 6.3 volts at 150 ma. and is way too insensitive. Small
> > flashlight lamps such as used in single-cell penlights may also be useful.
> >
> > But the lamp should only be used for testing. Its resistance may cause chirp.
> >
> > and before I forget:
> >
> > CONGRATS ON YOUR GENERAL, Uwe!
> >
> > 73 de Jim, N2EY

> >
> >
>
> Thanks for the good wishes. Yes I got the ticket and I am out there with my
> 5 wpm but sometimes I really feel I don't belong there, 5 wpm in the
> "laboratory conditons" of the test is one thing, out there with all that
> noise and distraction is an altogether different thing and "stagefright"
> takes over sometimes.

You do belong there, Uwe. You just need to develop skills, that's all.
And the only way to get them is on-the-air.
>
> (www.oldradioparts.com) seems like a good source, I might buy from them
> sometimes, I still need a transformer for the little transmitter. By the way
> about specifying these transformers, to get those 320Volt with a tube
> rectifier do you need a centertapped transformer with roughly 160V in each
> winding, what they call a 160-0-160??

No! That will get you far less than what you need.

With theoretically "perfect" rectifiers and transformers, the output
voltage depends entirely on the type of filter and the transformer
voltage. With a full-wave center-tap rectifier and a choke-input
filter, the maximum voltage obtainable is 0.9 times the transformer
voltage, and with a capacitor input filter, the maximum voltage
obtainable is 1.414 times the transformer voltage. With the full-wave
center-tap rectifier, "transformer voltage" means "each side of center
tap".

The above numbers assume perfect components whose ratings are big
enough to do the job.

With real world components, it's a little more complicated, but the
results are always that you get less voltage.

The AC-1 uses a capacitor-input filter and a 6X5GT rectifier. Also,
the transformer is not "perfect" - just good enough to do the job. End
result is that the transformer is about 320-0-320 and the resulting DC
is about 325 volts.

Easiest way to work with tube rectifiers is to look them up in the
tube manuals (there are several tube manuals on-line) and look at the
design curves.
>
> I did see these other AC-1 sites and yes I do use the smaller resistor
> parallel to the crystal.

Excellent. May take some experimentation.

btw, check out AF4K's website for crystal suppliers.
>
> I read a little more about chokes in old radio amateur handbooks and it
> seems that even their placement in the chassis can be tricky.

>
> I would love to know a way, because even with the 'new' choke the rig is not
> 'there' yet, to possibly make a test setup for this entire pi section and
> 'bench test it. Is there such a thing?

Yes, but it's not necessary. You know the capacitors are the right
ones, so it's merely a matter of the chokes and coil.

> If I terminate it with a 50 load and feed my HF generator signal on the
> input (plate) side this would not be appropriate because the tx and the test
> generator have a different output impedance??

That's exactly right.
>
> And what do you want the pi section to do, resonate at the transmitter
> frequency?
>
Yes. But more than just resonate, it transforms the load impedance
from 50 ohms to whatever the tube needs.

> Ways to go...
>
Good luck & congrats again!

73 de Jim, N2EY

2863. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 15:34:45 UTC
From: dirtpoorglenn@shaw.ca
Message-ID: <407ab64f.41638733@shawnews>
Source record: 26950
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Hi;
I must say that this last responce was well writen and informitive, it
was a pleasure to read.

Thank you Mr. Lewallen

On Mon, 12 Apr 2004 00:11:36 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>You've asked for a module that puts out 6-9 volts @ 100 mA. A more
>accurate description of a solar panel would be that it puts out 100 mA
>at 6-9 volts. Solar cells act a lot more like a current source than a
>voltage source. So a panel that's rated at 100 mA at 12 volts will also
>put out about 100 mA at 6 or 9 volts. (It'll be a bit more than 100 mA,
>but not a whole lot more.) The open circuit voltage of a "12 volt" solar
>panel (one intended to deliver current to a 12-14 volt load) will be
>somewhere around 18 or 20 volts, and one specifically designed to work
>at 6 volts will be about half that, 9 or 10 volts. So if you have a 6 -
>9 volt device that you want to power with solar cells, you'll have to
>float the panel across a battery, or use a voltage regulator to limit
>the voltage. (A properly sized zener diode would be adequate for the
>power level you're dealing with.) A 12 volt panel will be physically
>larger than you need, but it might be easier to find and less expensive.
>
>If you're looking for a module that includes a built in voltage
>regulator to limit the voltage to 6 - 9 volts, you need to make it
>clear. Most of the responses seem to be referring to 12 volt panels,
>which will be fine if you limit the voltage, but won't be suitable if
>you need voltage regulation to be included in the external module.
>
>Roy Lewallen, W7EL
>
>Bill Bowden wrote:
>
>> maxfoo <maxfooHeadFromButt@punkass.com> wrote in message
news:<l4ki70p7om5t8ekfph50o03ckfdrldcjij@4ax.com>...
>>
>>>Anyone know of any solar cell vendors that sell
>>>solar cell modules that put out 6-9volt @ 100mA?
>>>
>>>
>>>TIA,
>>>
>>

>>
>> Lots of solar panels for sale on ebay. Here's a 12 volt 200mA
>> unit for 11 dollars.
>>
>> Http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=41981&item=3187173830&rd=1
>>
>>
>> -Bill

2864. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 17:14:22 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404120914.dae6cbe@posting.google.com>
Source record: 26951
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

If I understand correctly, you're interested in harmonics up in the 70MHz region. To me it seems silly to use diodes capable of generating a comb of harmonics out to 20GHz for that. An advantage--a big advantage--of the tiny logic is that you get considerable power gain in the stage, and the sot-23 package is likely no larger than the diode you might have used anyway. The edges, as others have pointed out, are PLENTY fast enough for what I believe you want to do.

Whether you use diodes or gates, your size problem will be the harmonic-selection filter. As you've learned (and I trust not forgotten already), you need either multiple poles in your filter or a rather high Q. You _could_ get the high Q with crystals, but of course then you're locked down to particular frequencies. For high multiplication factors to low-VHF frequencies, it's probably hard to beat a PLL for (potentially) small size.

In offering suggestions, it would also be helpful to us to know your actual needs for signal purity, both close-in (phase noise) and broadband (other harmonics, etc.)

If you do use diodes for higher-order harmonic generation, and not just a simple full-wave-rectifier type frequency doubler, I suppose you want something of the nature of a step recovery diode. That implies minority carrier stored charge in the diode, and that would preclude using a Schottky diode (which would work great in the full-wave-rectifier type doubler). If you get into actually wanting to generate harmonic combs out to microwave frequencies, it's probably worthwhile looking for diodes actually characterized for step recovery service. But I really think that's way beyond what you are trying to accomplish right now.

Cheers,
Tom

Paul Burridge <pb@notthisbit.osiris1.co.uk> wrote in message news:<orgi7059cq67v28ihp5fr561omseps329r@4ax.com>...
> On Sun, 11 Apr 2004 14:14:56 +0200, "Fred Bartoli"
> <fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo> wrote:
>
> >Don't let Paul dream too much about picoseconds.
>
> Well, quite. I wouldn't know what to do with all those extra
> harmonics, anyway. :-)
> Diodes sound great, but I'm heavily put off by that comment earlier in
> the thread that they're prone to self oscillation. :-(What's a

> "parametric device" anyway?
>
> >In order to achieve results that good, one have to pay very careful
> >attention to "wiring". There's still a lot of room for Paul to improve his
> >PCB design skills ;-)
>
> Fair comment. But I *am* working on it!

2865. Re: Need part for Tektronix 491 Spectrum Analyzer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 19:08:16 UTC
From: kludge@panix.com
Message-ID: <c5epf0$5b0$1@panix2.panix.com>
Source record: 26952
Cross-posted to: sci.electronics.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.boatanchors

Dave Woolf <NOSPAMdwoolf@worldnet.att.net> wrote:
>
> I am looking for a part for a Tektronix
> 491 spectrum analyzer. It is called the
> RFI filter or the Low Pass 275 V AC Filter
> The Tek part number as listed in my
> service manual is 119-0095-00. It is a
> metal can that on one end has the male
> connector that the AC cord plugs into.
> The other end feeds out the line voltage
> to the internal fuses.

You can replace it with a stock Corcom EMI filter from Digi-Key.

> The failure is interesting. At some AC
> voltage around 105 - 110 volts there is
> a breakdown and short that blows a 20 amp
> circuit breaker. The short is not permanent
> as I can turn the unit off/on and it will again
> work below the above voltage. I know it is
> the filter as this is the only thing that is
> before the internal fuse which never blows.

This thing is a pi filter with an inductor inside and some shunt
capacitors. One of the capacitors is on the way out.

> I have a work-around by running the unit
> on a variac and keeping the voltage at
> around 100 volts. But I am not sure how
> long this will work, so I would like to
> replace the filter.
>
> Anyone know of a source?

Open it with a can opener and replace the ceramic caps.
--scott
--
"C'est un Nagra. C'est suisse, et tres, tres precis."

2866. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 19:09:51 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <3QBec.21137$_K3.55643@attbi_s53>
Source record: 26953
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

> If you do use diodes for higher-order harmonic generation, and not
> just a simple full-wave-rectifier type frequency doubler, I suppose
> you want something of the nature of a step recovery diode. That
> implies minority carrier stored charge in the diode, and that would
> preclude using a Schottky diode (which would work great in the
> full-wave-rectifier type doubler). If you get into actually wanting
> to generate harmonic combs out to microwave frequencies, it's probably
> worthwhile looking for diodes actually characterized for step recovery
> service. But I really think that's way beyond what you are trying to
> accomplish right now.

My turn to learn something here. Tom, would you elaborate a bit on the above please? I know SRD's are comb generators out to visible light, but they're also 50 percent hard to find and 50 percent magic. I've been using Schottky's for X16 multipliers to 2 GHz, am I doing something wrong? (I keep promising myself that I'm gonna substitute an MMIC for that one day, I DID find the "Filter Gain" in the line length from generator to filter), THAT was both impressive AND helpful. If I go with the MMIC, any preference of Silicon over GaAs?

Regards

W4ZCB

2867. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 19:23:09 UTC
From: John Larkin <jjlarkin@highSNIPlandTHIStechPLEASEnology.com>
Message-ID: <lnql70dmj658i0rvfd4vt6ami0durr9oom@4ax.com>
Source record: 26954
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Mon, 12 Apr 2004 19:09:51 GMT, "Harold E. Johnson"
<W4ZCB@mchsi.com> wrote:

>
>> If you do use diodes for higher-order harmonic generation, and not
>> just a simple full-wave-rectifier type frequency doubler, I suppose
>> you want something of the nature of a step recovery diode. That
>> implies minority carrier stored charge in the diode, and that would
>> preclude using a Schottky diode (which would work great in the
>> full-wave-rectifier type doubler). If you get into actually wanting
>> to generate harmonic combs out to microwave frequencies, it's probably
>> worthwhile looking for diodes actually characterized for step recovery
>> service. But I really think that's way beyond what you are trying to
>> accomplish right now.
>
>My turn to learn something here. Tom, would you elaborate a bit on the above
>please? I know SRD's are comb generators out to visible light, but they're
>also 50 percent hard to find and 50 percent magic. I've been using
>Schottky's for X16 multipliers to 2 GHz, am I doing something wrong? (I keep
>promising myself that I'm gonna substitute an MMIC for that one day, I DID
>find the "Filter Gain" in the line length from generator to filter), THAT
>was both impressive AND helpful. If I go with the MMIC, any preference of
>Silicon over GaAs?
>
>Regards
>
>W4ZCB
>

The only distributor-stock SRDs I know of are the M/Acom MA44767,
MA44768, MA44769 parts, all SOT-23 and dirt cheap. I think Penstock
carries them. The '68 or '69 should be good for multiplication to 2
GHz. For high ratios, an SRD will beat a plain diode by a huge amount.
There are lots of appnotes around about using them as multipliers.

I have a bunch in stock and can send a few to anybody who wants to
play.

John

2868. FA: Heath Heathkit SB SB-610 Monitor Scope Assembly Manual

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 19:27:58 UTC
From: Will <willbrown@nospamsympatico.ca>
Message-ID: <f4Cec.4126$vF3.575002@news20.bellglobal.com>
Source record: 26956

Heathkit SB-610 Assembly Manual Complete. If you know the equipment, then you know what the assembly manual was all about. The manual is in good condition with no tears or doggie ears. Only writing is some telephone number.
http://cgi.ebay.ca/ws/eBayISAPI.dll?ViewItem&item=3090396736&category=4671

2869. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 19:29:29 UTC
From: maxfoo <maxfooHeadFromButt@punkass.com>
Message-ID: <qlql70lp0lke6pj9qv4k1egho1d16mujac@4ax.com>
Source record: 26955
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On Mon, 12 Apr 2004 00:11:36 -0700, Roy Lewallen <w7el@eznec.com> wrote:

>If you're looking for a module that includes a built in voltage
>regulator to limit the voltage to 6 - 9 volts, you need to make it
>clear. Most of the responses seem to be referring to 12 volt panels,
>which will be fine if you limit the voltage, but won't be suitable if
>you need voltage regulation to be included in the external module.

my pcb has a Linear Tech LT1117-5 LDO regulator on board, regulates 5volts with a min input Voltage of 6 volts, so I'm currently using 4 AA batteries in a battery pack with a 9v type clip. Wanted to be able to charge the batteries with solar cells basically.

But after searching the web a bit it seems cheapest to buy individual cells then tie them in series...No?

thanks,

Remove "HeadFromButt", before replying by email.

2870. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 20:00:52 UTC
From: "Watson A.Name \"Watt Sun - the Dark Remover\"" <NOSPAM@dslextreme.com>
Message-ID: <c5eses$6mdtv$2@hades.csu.net>
Source record: 26957
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

maxfoo wrote:

> Anyone know of any solar cell vendors that sell
> solar cell modules that put out 6-9volt @ 100mA?

Try All ELectronics. www.allcorp.com.

> TIA,
> Remove "HeadFromButt", before replying by email.

2871. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 20:02:38 UTC
From: "Watson A.Name \"Watt Sun - the Dark Remover\"" <NOSPAM@dslextreme.com>
Message-ID: <c5esi5$6mdtv$3@hades.csu.net>
Source record: 26958
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Joerg wrote:

> Another option might be to use a different voltage panel,
> whatever has a good price, and then use a small switcher to run
> the cells at their optimum load.

> Regards, Joerg.

Seems foolhardy to me, to use a boost circuit, and waste a lot of power.
Just put more PV cells in series to increase the voltage.

2872. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 20:19:49 UTC
From: "Watson A.Name \"Watt Sun - the Dark Remover\"" <NOSPAM@dslextreme.com>
Message-ID: <c5etid$6me57$1@hades.csu.net>
Source record: 26959
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Roy Lewallen wrote:

> You've asked for a module that puts out 6-9 volts @ 100 mA. A more
> accurate description of a solar panel would be that it puts out 100 mA
> at 6-9 volts.

Also the currewnt outputdepends somewhat on the latitude you're at. You
won't get all that current at the arctic circle.

2873. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 20:52:35 UTC
From: Joel Kolstad <JKolstad71HatesSpam@Yahoo.Com>
Message-ID: <c5evbt$4e8$1@news.oregonstate.edu>
Source record: 26960
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Watson A.Name "Watt Sun - the Dark Remover" <NOSPAM@dslextreme.com> wrote:
> Also the currewnt outputdepends somewhat on the latitude you're at. You
> won't get all that current at the arctic circle.

He might actually have a better chance there during the periods when the sun never sets than at, e.g., the equator... solar cells are noticably more efficient when they're keep cold, which is typically a lot earier to do in the arctic than at the equator!

2874. Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 21:29:32 UTC
From: "H. Peter Friedrichs" <XXXhpfuopZZZ@mindspring.com>
Message-ID: <0TDec.7141$A_4.6041@newsread1.news.pas.earthlink.net>
Source record: 26961

Hello, All:

Rumor has it that QST featured an article in a January/1930 or January/1935 issue on the subject of homebrew transmitter crystals - how cut, lap, and mount them. If anyone has QST on CDROM for those years, I'd sure appreciate if you could take a look.

Remove XXX's and ZZZ's if you wish to reply directly, and thanks.

Pete
AC7ZL

2875. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 22:16:01 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <ByEec.22249$_K3.57010@attbi_s53>
Source record: 26962
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

>
> The only distributor-stock SRDs I know of are the M/Acom MA44767,
> MA44768, MA44769 parts, all SOT-23 and dirt cheap. I think Penstock
> carries them. The '68 or '69 should be good for multiplication to 2
> GHz. For high ratios, an SRD will beat a plain diode by a huge amount.
> There are lots of appnotes around about using them as multipliers.
>
> I have a bunch in stock and can send a few to anybody who wants to
> play.

I'd like to talk you out of a couple, and thanks for the supplier info.
Wonder what MaCom's min order is? Anything you need in trade or a few green
stamps?

W4ZCB
Call Book Address.

2876. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 22:43:30 UTC
From: averyfineman@aol.com
Message-ID: <20040412184330.05715.00000253@mb-m25.aol.com>
Source record: 26963

In article <c5evbt$4e8$1@news.oregonstate.edu>, "Joel Kolstad"
<JKolstad71HatesSpam@Yahoo.Com> writes:

>Watson A.Name "Watt Sun - the Dark Remover" <NOSPAM@dslextreme.com> wrote:
>> Also the currewnt outputdepends somewhat on the latitude you're at. You
>> won't get all that current at the arctic circle.
>
>He might actually have a better chance there during the periods when the sun
>never sets than at, e.g., the equator... solar cells are noticably more
>efficient when they're keep cold, which is typically a lot earier to do in
>the arctic than at the equator!

Ahem, Joel, consider the location of "the land of the midnight sun..."

:-)

Ackshully, based on a little bit of experience on Solar One, the
first (of two) experimental 50 MWe solar plant in Barstow, CA,
(in the middle desert of California with not much else), sunlight
has a considerable variance in energy over the course of a day.
A combined buck-boost switching power supply would be a
consideration for reliable solar cell charging of a secondary
battery during daylight. There are several different ICs just for
the purpose of wide-voltage-range inputs from National, Linear,
and Maxim along with application notes from all three.

Roy Lewallen hit the subject nail on the head in saying, correctly,
that solar cells behave more as constant-current sources than
constant-voltage (as batteries are) sources. Those who care to
test that will find out from connecting a fixed resistor to solar cell
outputs and measuring the voltage during the course of daylight,
especially the differences between clear and cloudy skies.

Solar One was a boiler system, over 500 independent mirrors were
used as a giant reflector array to focus sunlight on a central boiler
made from the same stainless-steel-like tubing used in rocket engine
bell structures. Rocketdyne Division of Rockwell International was
the subcontractor to MacDonnell-Douglas that made the boiler and
the underground steam-heat storage system of Solar One. The peak
daylight energy was in excess of 100 MWe equivalent but the extra
heat had to be stored overnight for the steam-turbine-powered
generators to run 24/7. Rocketdyne, now purchased by Boeing,
made the Space Shuttle Main Engines. Rocket engine bells
are made from tubing to circulate fuel before entering combustion.
That pre-warms the fuel as well as cooling down the tail of the
engine's output.

Not exactly what a QRP operator would need... :-)

Len Anderson
retired (from regular hours) electronic engineer person

2877. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 23:09:31 UTC
From: "Watson A.Name \"Watt Sun - the Dark Remover\"" <NOSPAM@dslextreme.com>
Message-ID: <c5f7gi$6map8$1@hades.csu.net>
Source record: 26965
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

maxfoo wrote:
> On Mon, 12 Apr 2004 00:11:36 -0700, Roy Lewallen <w7el@eznec.com> wrote:

>>If you're looking for a module that includes a built in voltage
>>regulator to limit the voltage to 6 - 9 volts, you need to make it
>>clear. Most of the responses seem to be referring to 12 volt panels,
>>which will be fine if you limit the voltage, but won't be suitable if
>>you need voltage regulation to be included in the external module.

> my pcb has a Linear Tech LT1117-5 LDO regulator on board, regulates 5volts with
> a min input Voltage of 6 volts, so I'm currently using 4 AA batteries in a
> battery pack with a 9v type clip. Wanted to be able to charge the batteries with
> solar cells basically.

> But after searching the web a bit it seems cheapest to buy individual cells
> then tie them in series...No?

For 6V, I would put two of these in series, along with a 1N5817 schottky
diode to prevent reverse current. Each cell is encapsulated with epoxy
and the wires can be soldered to the pads on the back. Each puts out an
honest 30 mA, or more in bright sunlight. Price is reasonable too.

http://www.allelectronics.com/cgi-bin/category.cgi?category=565&item=SPL-60&type=store

You can also put two pairs in parallel to get a faster charge.

> thanks,

2878. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-12 23:17:20 UTC
From: Joel Kolstad <JKolstad71HatesSpam@Yahoo.Com>
Message-ID: <c5f7s4$7op$1@news.oregonstate.edu>
Source record: 26964

Avery Fineman <averyfineman@aol.com> wrote:
> In article <c5evbt$4e8$1@news.oregonstate.edu>, "Joel Kolstad"
> <JKolstad71HatesSpam@Yahoo.Com> writes:
>
>> He might actually have a better chance there during the periods when the
>> sun never sets than at, e.g., the equator... solar cells are noticably
>> more efficient when they're keep cold, which is typically a lot earier
>> to do in the arctic than at the equator!
>
> Ahem, Joel, consider the location of "the land of the midnight sun..."

That's why I said 'during the periods when the sun never sets' -- it's about half the year with no light, and half with no darkness, no? :-)

After all, during the 'no light' periods he doesn't have to run the air condtioner anyway, right? Just kidding!

2879. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 00:41:41 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <107mdppnv2ouief@corp.supernews.com>
Source record: 26966

H. Peter Friedrichs wrote:
> Hello, All:
>
> Rumor has it that QST featured an article in a January/1930 or January/1935
> issue on the subject of homebrew transmitter crystals - how cut, lap, and
> mount them. If anyone has QST on CDROM for those years, I'd sure appreciate
> if you could take a look.
>
> Remove XXX's and ZZZ's if you wish to reply directly, and thanks.
>
> Pete
> AC7ZL
>
>

"Cutting Quartz Crystal Plates". QST, January 1935, page 36.
Unfortunately that's from my swiftly-rotting paper issue, and I don't
have a scanner.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

2880. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 01:41:01 UTC
From: qtc333@hotmail.com
Message-ID: <7a43e28a.0404121741.7ba65abd@posting.google.com>
Source record: 26967
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

> But after searching the web a bit it seems cheapest to buy individual cells
> then tie them in series...No?
>
> thanks,
>
>

My experience with tying together solar cells is that you'll probably
destroy a few along the way (the pads lift very easily when heated
with soldering iron), so either get extras or go with a solution which
does not require you to solder cells together (or be more careful than
I was, I guess).

2881. Re: filter capacitor in series

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 01:57:38 UTC
From: ehsjr@bellatlantic.net
Message-ID: <407B492E.C74BB7BC@bellatlantic.net>
Source record: 26968

Bill Turner wrote:
>
> On Sun, 11 Apr 2004 05:25:02 GMT, ehsjr@bellatlantic.net wrote:
>
> >I'd use
> >2 51K 2 watt resistors in series across each cap, to
> >give a very good safety margin on the resistors' power
> >dissipation and voltage exposure.
>
> --
>
> Also, avoid carbon composition resistors. They are notorious for
> gradually changing their resistance over time. Metal oxide film (MOF)
> types are much more stable over the long run. Richard, AG6K, sells them
> pretty reasonable. See http://www.somis.org/
>
> Richard's resistors are 100K and are rated at three watts. With 416
> volts applied per your example, they dissipate 1.7 watts, which should
> be a sufficient safety factor. The truly paranoid may connect four of
> them in a series-parallel arrangement across each capacitor.
>
> --
> Bill, W6WRT
> QSLs via LoTW

Thanks! Those are good resistors - I didn't know
about the site. My paranoia extends to the caps, too.
I would use 7, myself, yielding a total of 3500 volts
or about 360 across each cap and resistor. That would
also reduce the power the resistors would dissipate to
about 1.3 watts, but the reduction in cap voltage
is more important. The last one I built (for 1800V)
used 6 450 volt caps and 12 51K 2w resistors. Wish
I had known about that site when I built it - I would
have used those resistors.

2882. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 03:07:17 UTC
From: John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com>
Message-ID: <r7mm70937untuevdj2mndsddnlc8qs95ge@4ax.com>
Source record: 26969
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Mon, 12 Apr 2004 22:16:01 GMT, "Harold E. Johnson"
<W4ZCB@mchsi.com> wrote:

>
>
>>
>> The only distributor-stock SRDs I know of are the M/Acom MA44767,
>> MA44768, MA44769 parts, all SOT-23 and dirt cheap. I think Penstock
>> carries them. The '68 or '69 should be good for multiplication to 2
>> GHz. For high ratios, an SRD will beat a plain diode by a huge amount.
>> There are lots of appnotes around about using them as multipliers.
>>
>> I have a bunch in stock and can send a few to anybody who wants to
>> play.
>
>I'd like to talk you out of a couple, and thanks for the supplier info.
>Wonder what MaCom's min order is? Anything you need in trade or a few green
>stamps?
>
>W4ZCB
>Call Book Address.
>
^^^^^^^^^^^^^^^^^^ don't have one. Email me, with hopefully obvious
despam.

John

2883. Help Finding Latching Relay

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 03:32:04 UTC
From: randy
Message-ID: <konm70h13pqe0jhg14o2rtpke86qioqcc2@4ax.com>
Source record: 26970

I'm looking for a source of new latching relays.

Coil needs to be 12 to 24 volt and contacts of 10 amps at 120 volts AC.

The catch is I don't want any dual coil type relays. I have an application in which I want a contact closure on the coil to turn the relay on and another closure will turn it off again.

I would even be receptive to a solid-state module that would give me the pulse on / pluse off action that I could use to control a relay.

Randy

XXXrand@farmtel.netABC

2884. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 04:00:11 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <fBJec.24341$i74.473352@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26971
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"John Larkin" <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> wrote in
message news:r7mm70937untuevdj2mndsddnlc8qs95ge@4ax.com...

> >
> >W4ZCB
> >Call Book Address.
> >
> ^^^^^^^^^^^^^^^^^^ don't have one. Email me, with hopefully obvious
> despam.

http://qrz.com/callsign/w4zcb

"PM"

2885. Re: Help Finding Latching Relay

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 04:22:28 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <407B6B04.6838F1E@rica.net>
Source record: 26972

randy wrote:
>
> I'm looking for a source of new latching relays.
>
> Coil needs to be 12 to 24 volt and contacts of 10 amps at 120 volts
> AC.
>
> The catch is I don't want any dual coil type relays. I have an
> application in which I want a contact closure on the coil to turn the
> relay on and another closure will turn it off again.
>
> I would even be receptive to a solid-state module that would give me
> the pulse on / pluse off action that I could use to control a relay.
>
> Randy
>
> XXXrand@farmtel.netABC

http://www.kussmaul.com/091-98-12.html
http://www.weisd.com/store2/CD%20692-24.html
http://www.broadcast.harris.com/product_portfolio/product_details.asp?sku=RDLST-LCR2

--
John Popelish

2886. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 06:18:00 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <glum709qtfa5ej9thbjlncojs4qm0n09p2@4ax.com>
Source record: 26973
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On Mon, 12 Apr 2004 13:02:38 -0700, "Watson A.Name \"Watt Sun - the Dark Remover\"" <NOSPAM@dslextreme.com> wrote:

>Joerg wrote:
>
>> Another option might be to use a different voltage panel,
>> whatever has a good price, and then use a small switcher to run
>> the cells at their optimum load.
>
>> Regards, Joerg.
>
>Seems foolhardy to me, to use a boost circuit, and waste a lot of power.
> Just put more PV cells in series to increase the voltage.

The solar cell operates as a (badly) regulated power supply with current limiting. At low load currents, the cell operates nearly as a constant voltage source, but after a specific current (for a given illumination) it operates nearly as a constant current source and deliver approximately that current even into a short circuit.

The largest power from the cell (for a specific illumination) is obtained at the point it switches from constant voltage to constant current mode, in which both the voltage is quite close (within 30 %) of both the maximum voltage (as measured at open circuit) and maximum current (as measured at short circuit).

This maximum power point varies with illumination, but if the switcher always loads the cell at this maximum power point, the largest available energy at a specific time is extracted from the cell independent of illumination.

Even if the losses in the maximum power point tracker is 10-20 %, usually more energy can be obtained than running the module in some non-optimal constant voltage or constant current mode.

Paul

2887. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 06:18:02 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <850n70lq09ts4tlqimiv14hmopuu81japu@4ax.com>
Source record: 26974
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On Mon, 12 Apr 2004 13:52:35 -0700, "Joel Kolstad"
<JKolstad71HatesSpam@Yahoo.Com> wrote:

>Watson A.Name "Watt Sun - the Dark Remover" <NOSPAM@dslextreme.com> wrote:
>> Also the currewnt outputdepends somewhat on the latitude you're at. You
>> won't get all that current at the arctic circle.

The difference for panels perpendicular to the sun on the equator and
the arctic circle in the summer noon is about 10-15 %, due to the
atmospheric absorbtion. The difference between the equator and pole is
about 30 % in the same conditions.

If the panel is tracking the sun, the panel on the pole during the
summer will produce electricity for 24 h each day, while the other
panel on the equator will produce for less than 12 h. On the arctic
circle about 18-20 h each day will give usable electric output.
Exactly at the arctic circle, the midnight sunlight is strongly
attenuated by the atmosphere, so you can look at it even with your
naked eyes or ordinary sunglasses, thus the electric output is also
minimal.

>He might actually have a better chance there during the periods when the sun
>never sets than at, e.g., the equator... solar cells are noticably more
>efficient when they're keep cold, which is typically a lot earier to do in
>the arctic than at the equator!

The silicon cell behaves quite in the same way as a silicon diode
which has a 0,7 V threshold voltage and -2 mV/C temperature constant,
thus the cell output voltage (and hence power) drops with temperature.

However, the cells are heated by solar radiation at nearly at constant
flux on the equator and arctic circle, thus, the main issue is how
well the heat will be removed from the cell to the environment. At the
arctic summer the air temperature can be well over 20 C for longer
periods of time, so this does not help a lot in keeping the cells
cool.

Paul

2888. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 06:27:37 UTC
From: Joel Kolstad <JKolstad71HatesSpam@Yahoo.Com>
Message-ID: <c5g11fgji1@news.oregonstate.edu>
Source record: 26975
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Paul Keinanen <keinanen@sci.fi> wrote:
> At the
> arctic summer the air temperature can be well over 20 C for longer
> periods of time, so this does not help a lot in keeping the cells
> cool.

...and the windchill is also reasonably comparable? I didn't realize the arctic could be so 'balmy!' Thanks for the info.

I suppose that if you wanted to push the issue, a heat pipe stuck in the ice going back to a metal layer on the back of the panel would be quite effective in cooling the panel...

2889. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 08:23:42 UTC
From: "Watson A.Name - \"Watt Sun, the Dark Remover\"" <NOSPAM@dslextreme.com>
Message-ID: <107n8pmbortoc1a@corp.supernews.com>
Source record: 26976
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Paul Keinanen" <keinanen@sci.fi> wrote in message
news:glum709qtfa5ej9thbjlncojs4qm0n09p2@4ax.com...
> On Mon, 12 Apr 2004 13:02:38 -0700, "Watson A.Name \"Watt Sun - the
> Dark Remover\"" <NOSPAM@dslextreme.com> wrote:
>
> >Joerg wrote:
> >
> >> Another option might be to use a different voltage panel,
> >> whatever has a good price, and then use a small switcher to run
> >> the cells at their optimum load.
> >
> >> Regards, Joerg.
> >
> >Seems foolhardy to me, to use a boost circuit, and waste a lot of
power.
> > Just put more PV cells in series to increase the voltage.
>
> The solar cell operates as a (badly) regulated power supply with
> current limiting. At low load currents, the cell operates nearly as a
> constant voltage source, but after a specific current (for a given
> illumination) it operates nearly as a constant current source and
> deliver approximately that current even into a short circuit.
>
> The largest power from the cell (for a specific illumination) is
> obtained at the point it switches from constant voltage to constant
> current mode, in which both the voltage is quite close (within 30 %)
> of both the maximum voltage (as measured at open circuit) and maximum
> current (as measured at short circuit).
>
> This maximum power point varies with illumination, but if the switcher
> always loads the cell at this maximum power point, the largest
> available energy at a specific time is extracted from the cell
> independent of illumination.
>
> Even if the losses in the maximum power point tracker is 10-20 %,
> usually more energy can be obtained than running the module in some
> non-optimal constant voltage or constant current mode.
>
> Paul

Yeah, I see what you mean, sort of like an impedance match, but at DC.
But at the beginning or end of the day, or cloudy day, you can't pull
any more energy out of the cells than there is there. What it looks to

me is that you're adding circuitry to give a better match at the ends of the day or a cloudy day, and in return sacrificing a few percent overall.

My attitude is that rather than try to do this (and in the process lose reliability), it's better to go supersize on the cells, add more area and overall capacity to get you thru the cloudy days, and have a higher capacity overall.

2890. Refresh old capacitors. How to ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 09:55:33 UTC
From: pake@extrafoi.se
Message-ID: <pake-0101040332030001@dhcp-032-102.foi.se>
Source record: 26977

I have a powersupply which have been stored for 15 years.
Now I want to use it. But I think the high volt(500 V) capacitors
need to be refreshed (right word?). (To slowly increase the voltage.)

Questions are for ex.: how fast, how long time at each level.
Cant find any info on the net or in the handbook.
Is there any info on the net ? Or here ?

/Per-Ake

--
Remove "extra" in my e-mail adress !!

2891. Homebrewing a receiver question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 10:44:21 UTC
From: newbe_1957@yahoo.com
Message-ID: <f347c6b9.0404130244.4b6ff72c@posting.google.com>
Source record: 26978

How do you choose a I.F. when homebrewing a H.F. receiver with BFO? I want to build a receiver that covers all H. F. amateur bands. I am a little confused on how to pick the type of crystal filters to use. thanks

2892. Re: Homebrewing a receiver question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 10:59:26 UTC
From: Leon Heller <leon_heller@hotmail.com>
Message-ID: <407bc80d$0$6549$cc9e4d1f@news-text.dial.pipex.com>
Source record: 26979

"newbe_1957" <newbe_1957@yahoo.com> wrote in message
news:f347c6b9.0404130244.4b6ff72c@posting.google.com...
> How do you choose a I.F. when homebrewing a H.F. receiver with BFO? I
> want to build a receiver that covers all H. F. amateur bands. I am a
> little confused on how to pick the type of crystal filters to use.
> thanks

It's a good idea to choose an IF that is well away from any strong signals.
If you are making your own ladder filter you also need to choose a frequency
for which cheap crystals are readily available.

73, Leon

2893. Re: Refresh old capacitors. How to ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 12:37:04 UTC
From: Pasta chef <linguine@noodlefactory.com>
Message-ID: <o1ln709n6h8kttaf5jnmskbs3qbdogpse8@4ax.com>
Source record: 26980

On Tue, 13 Apr 2004 09:55:33 +0000 (UTC), pake@extrafoi.se (Per-Ake Andersson) wrote:

>I have a powersupply which have been stored for 15 years.
>Now I want to use it. But I think the high volt(500 V) capacitors
>need to be refreshed (right word?). (To slowly increase the voltage.)
>
>Questions are for ex.: how fast, how long time at each level.
>Cant find any info on the net or in the handbook.
>Is there any info on the net ? Or here ?
>
>/Per-Ake

Plug it in to a Variac and bring the voltage up very slowly. Do it over several hours. Better safe than sorry.

Also:
http://search.yahoo.com/search?fr=fp-pull-web-t&p=reforming+electrolytic+capacitors

2894. Re: Homebrewing a receiver question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 13:00:03 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <nvRec.8820$XM3.4965@newssvr23.news.prodigy.com>
Source record: 26981

First decide if it's going be to single or double conversion. Easiest woulb
be single with 455 KHz, readily available IF cans, filters and xtals. If
you go double conversion you need to decide if you going to a relatively
high IF such as 40 or 60 MHz but for starters 10.7 mhZwould be good as parts
are easier to get. Read the ARRL handbook.
Good luck
73
Hank WD5JFR
"newbe_1957" <newbe_1957@yahoo.com> wrote in message
news:f347c6b9.0404130244.4b6ff72c@posting.google.com...
> How do you choose a I.F. when homebrewing a H.F. receiver with BFO? I
> want to build a receiver that covers all H. F. amateur bands. I am a
> little confused on how to pick the type of crystal filters to use.
> thanks

2895. Re: Refresh old capacitors. How to ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 13:11:17 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <VFRec.8822$UV3.5653@newssvr23.news.prodigy.com>
Source record: 26982

Use a Variac if you have one or improvise. I have had excellent luck going up in 10 volt steps on the AC side going from zero to 120VAC with an hour or 2 at each level. In additIon I let the unit cool for about the same time between voltage increases. After each level feel the capacitor and see if it's getting warm as this usually means it's done for but sometimes smaller steps in voltage increase and longer cooling intervals may increase your luck, the electolyte runs out of luck and becomes too dry to reform! If the unit has tube rectifiers they won't start to conduct till you reach about 60% so you'll not have as nice a transistion as you would with solid state. Try it as yoiu've nothing to lose except some time. Units that have no signs of leakage have reformed and in many cases worked well for years but the odd will fail at the least desireable time.
73
Hank WD5JFR
"Per-Ake Andersson" <pake@extrafoi.se> wrote in message
news:pake-0101040332030001@dhcp-032-102.foi.se...
> I have a powersupply which have been stored for 15 years.
> Now I want to use it. But I think the high volt(500 V) capacitors
> need to be refreshed (right word?). (To slowly increase the voltage.)
>
> Questions are for ex.: how fast, how long time at each level.
> Cant find any info on the net or in the handbook.
> Is there any info on the net ? Or here ?
>
> /Per-Ake
>
> --
> Remove "extra" in my e-mail adress !!

2896. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 13:58:34 UTC
From: Ren&#65533; <rjz~nospam~@xs4all.nl>
Message-ID: <9csn70h0sdt04u5ngdnjnaaskvkmmquipj@4ax.com>
Source record: 26983
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On Tue, 13 Apr 2004 09:18:00 +0300, Paul Keinanen <keinanen@sci.fi>
wrote:

>
>The solar cell operates as a (badly) regulated power supply with
>current limiting. At low load currents, the cell operates nearly as a
>constant voltage source, but after a specific current (for a given
>illumination) it operates nearly as a constant current source and
>deliver approximately that current even into a short circuit.
>
>The largest power from the cell (for a specific illumination) is
>obtained at the point it switches from constant voltage to constant
>current mode, in which both the voltage is quite close (within 30 %)
>of both the maximum voltage (as measured at open circuit) and maximum
>current (as measured at short circuit).
>
>This maximum power point varies with illumination, but if the switcher
>always loads the cell at this maximum power point, the largest
>available energy at a specific time is extracted from the cell
>independent of illumination.
>
>Even if the losses in the maximum power point tracker is 10-20 %,
>usually more energy can be obtained than running the module in some
>non-optimal constant voltage or constant current mode.
>
>Paul
>
I have seen elegant ckts where a simple switcher was used, regulating
the *input* voltage coming from the solar cell, keeping it in max
efficiency mode at all loads. This obviously only works with flexible
loads such as slow chargers or such.

--
- Reni¿½

2897. Re: Homebrewing a receiver question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 14:08:15 UTC
From: xpyttl <xpyttl_NOSPAM@earthling.net>
Message-ID: <107nt2j2njo2ocb@corp.supernews.com>
Source record: 26984

You have a number of constraints here. Deciding to cover all the HF bands makes it particularly messy. You might consider building a few single banders to get a feel for the problem space.

As Leon said, you want to choose an IF that is well away from any strong signals.

However, you would also like the IF to be well away from both the received signal and the VFO. This helps with image rejection. This is the reason many commercial receivers have a first IF up around 60 MHz. In amateur homebrew practice, you often try to place the IF roughly midway between the received signal and the VFO. If you want to cover all the bands this isn't possible.

As Hank mentioned, selecting a "common" IF means that you can get crystal filters, transformers and the like. However, most of the stuff for common IF frequencies is intended for broadcast use, and is too wide to be useful for amateur practice, so be sure you know you can get what you want. 455 is nice because you can get nice Collins filters, but this almost forces you to double or triple conversion. A low IF makes it easier to build sharp filters. As Leon pointed out, you want to be able to get crystals for your selected IF very cheaply, assuming you will build the filter. You will want to select the best handful from a big bunch. Should you run across a deal on 100 5 MHz crystals then maybe you should pick 5 MHz.

I disagree with Hank on the 10.7 choice. 10.7 MHz parts suitable for amateur HF service are virtually impossible to get, and you probably have a dozen 10.7 MHz generating devices in your house. However, if you are building an FM Broadcast receiver 10.7 MHz parts are widely available. 455 is nice because sharp filters are available, but that is really only feasible in a double or triple conversion setup. There is no way you are going to eliminate images with a single conversion 455 KHz IF for the higher frequencies.

Finally, if you intend to use an analog VFO (which I recommend against) you want to pick a frequency that allows for a low frequency VFO. Stabilizing a VFO is a major pain, and it gets worse as you go up in frequency. You might choose to build a stable VFO for, say, the 3 MHz range, then mix it with crystal oscillators for each band. You do end up with a real challenge keeping the images under control, however. And on 10 meters you would need to have several bands because it's tough to get an oscillator to spread over a large range relative to it's frequency and keep it stable.

You can see this gets to be a huge math problem, constrained by what you can get in the way of filters or crystals to build filters. Your job is simplified somewhat by choosing a DDS approach rather than an analog VFO,

but you still need to sort out how to avoid images in a large number of VFO/IF/received frequency combinations.

Double or triple conversion simplifies this problem, but makes the whole rig a lot more complex. A high first IF solves a lot of problems, but it pretty much forces you to a DDS. A 60 MHz IF gives you a 56 (or 64) MHz VFO for 75 meters - there is no way you are going to build a 56 MHz analog oscillator that is sufficiently stable.

I have to ask why? Building a rig to cover all the bands is a nice technical challenge, but few folks work all, or even most, of the bands. Most people find a few that suits their operating preferences and largely stick to them. Also, you shouldn't imagine that building something will save you any money. You simply don't have the buying power of an Icom or Kenwood. On the other hand, there is nothing quite like operating your own rig, that you designed! But you can get that thrill a lot easier with a single band choice.

..

"newbe_1957" <newbe_1957@yahoo.com> wrote in message
news:f347c6b9.0404130244.4b6ff72c@posting.google.com...
> How do you choose a I.F. when homebrewing a H.F. receiver with BFO? I
> want to build a receiver that covers all H. F. amateur bands. I am a
> little confused on how to pick the type of crystal filters to use.
> thanks

2898. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 14:48:25 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <6aun701gsmnhn8hh0e84990h3rlqq5e774@4ax.com>
Source record: 26985

On Mon, 12 Apr 2004 17:41:41 -0700, Tim Wescott
<tim@wescottnospamdesign.com> wrote:

>H. Peter Friedrichs wrote:
>> Hello, All:
>>
>> Rumor has it that QST featured an article in a January/1930 or January/1935
>> issue on the subject of homebrew transmitter crystals - how cut, lap, and
>> mount them. If anyone has QST on CDROM for those years, I'd sure appreciate
>> if you could take a look.
>>
>> Remove XXX's and ZZZ's if you wish to reply directly, and thanks.
>>
>> Pete
>> AC7ZL
>>
>>
>
>"Cutting Quartz Crystal Plates". QST, January 1935, page 36.
>Unfortunately that's from my swiftly-rotting paper issue, and I don't
>have a scanner.

Aw, c'mon, Tim. Photocopy and snail it to the guy!

2899. Re: Homebrewing a receiver question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 15:49:03 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <107o2v5487lh959@corp.supernews.com>
Source record: 26986

newbe_1957 wrote:

> How do you choose a I.F. when homebrewing a H.F. receiver with BFO? I
> want to build a receiver that covers all H. F. amateur bands. I am a
> little confused on how to pick the type of crystal filters to use.
> thanks

Yes to all the OP, but you also need to pay attention to spurious responses caused by mixing harmonics of the LO with harmonics of the RF. The '76 ARRL handbook has a nice nomograph for this; I devised one for my own use but it would take a 5000 word article to explain it.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

2900. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 15:53:44 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <107o37t5008a151@corp.supernews.com>
Source record: 26987

Paul Burridge wrote:

> On Mon, 12 Apr 2004 17:41:41 -0700, Tim Wescott
> <tim@wescottnospamdesign.com> wrote:
>
>
>>H. Peter Friedrichs wrote:
>>
>>>Hello, All:
>>>
>>>Rumor has it that QST featured an article in a January/1930 or January/1935
>>>issue on the subject of homebrew transmitter crystals - how cut, lap, and
>>>mount them. If anyone has QST on CDROM for those years, I'd sure appreciate
>>>if you could take a look.
>>>
>>>Remove XXX's and ZZZ's if you wish to reply directly, and thanks.
>>>
>>>Pete
>>>AC7ZL
>>>
>>>
>>
>>"Cutting Quartz Crystal Plates". QST, January 1935, page 36.
>>Unfortunately that's from my swiftly-rotting paper issue, and I don't
>>have a scanner.
>
>
> Aw, c'mon, Tim. Photocopy and snail it to the guy!
>

Oh wait! Look -- out there, through that big thing that looks like an aluminum-framed monitor! There's trees! There's a sky! There's smelly old cars putting things into the box on the road by my driveway! It's it's -- the real world! Dang! I forgot about that.

Suitably chastised, the respondent offers:

If you're interested send me your address, I'll bleach out a few pages worth of my precious vintage ink (you'll see the irony of that when you get the copies), and send you the stuff.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

2901. Re: Message To America's Students: The War, The Draft, Your Future

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 16:14:23 UTC
From: MitchAlsup@aol.com
Message-ID: <e90782f7.0404130814.7a01eda0@posting.google.com>
Source record: 26988
Cross-posted to: rec.radio.amateur.homebrew,psi.pipelineusa.literature,sunet.biomed.neurosci.neurophysiol,alt.buffy.europe,sci.astro.amateur,ubc.eus

If they institute a draft, they should remember, they have already
given all the kids drafted an out: "I'm gay". They can't have it
both ways.

2902. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 16:21:36 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c5h468$5oe$1@newshost.mot.com>
Source record: 26991

"H. Peter Friedrichs" <XXXhpfuopZZZ@mindspring.com> wrote in message
news:0TDec.7141$A_4.6041@newsread1.news.pas.earthlink.net...
> Hello, All:
>
> Rumor has it that QST featured an article in a January/1930 or
January/1935
> issue on the subject of homebrew transmitter crystals - how cut, lap, and
> mount them. If anyone has QST on CDROM for those years, I'd sure
appreciate
> if you could take a look.
> Remove XXX's and ZZZ's if you wish to reply directly, and thanks.
> Pete
> AC7ZL

Pete,

I have my Dad's grinding stuff, but don't do it. One thing to keep in
mind, and I don't know the details, but remember that the crystal activity
is effected by the edges. Grinding the edges is one of the more esoteric
aspects.
--
Steve N, K,9;d, c. i My email has no u's.

2903. Re: Refresh old capacitors. How to ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 16:24:19 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c5h4bc$5ov$1@newshost.mot.com>
Source record: 26992

"Per-Ake Andersson" <pake@extrafoi.se> wrote in message
news:pake-0101040332030001@dhcp-032-102.foi.se...
> I have a powersupply which have been stored for 15 years.
> Now I want to use it. But I think the high volt(500 V) capacitors
> need to be refreshed (right word?). (To slowly increase the voltage.)
>
> Questions are for ex.: how fast, how long time at each level.
> Cant find any info on the net or in the handbook.
> Is there any info on the net ? Or here ?
>
> /Per-Ake

Wish I could remember where, but there was something within the last 6 mo
where it talked about monitoring the CURRENT. I would think that HOT caps
are a BAD thing and should be avoided. My guess is that t15 years isn't
long, but better safe...

2904. Re: Refresh old capacitors. How to ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 16:31:43 UTC
From: Eddie Haskel <wiseguy@clever.com>
Message-ID: <PBUec.51059$qO.26287@newssvr25.news.prodigy.com>
Source record: 26989

"Bill Turner" <noway@nohow.com> wrote in message
news:mg3o70htfp8r6vohef0e73r9h3jtj9ctqs@4ax.com...
> On Tue, 13 Apr 2004 09:55:33 +0000 (UTC), pake@extrafoi.se (Per-Ake
> Andersson) wrote:
>
> >I have a powersupply which have been stored for 15 years.
> >Now I want to use it. But I think the high volt(500 V) capacitors
> >need to be refreshed (right word?). (To slowly increase the voltage.)
>
> ----------
>
> This isn't quite what you asked, but I'd recommend just replacing them.
> Electrolytics are notorious for drying out and 15 years is really
> pushing it. I'd just replace them with some new ones.
>
> --
> Bill, W6WRT
> QSLs via LoTW
>
I agree with Bill, for the cost involved and the impending failure just
replace them. The power supply will be good for another 15 years and be
trustworthy. If one of the old caps fails it could take out the rectifiers
and chokes, not to mention the mess.......Eddie

2905. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 16:37:21 UTC
From: Eddie Haskel <wiseguy@clever.com>
Message-ID: <5HUec.51062$OO.10954@newssvr25.news.prodigy.com>
Source record: 26990

> > Rumor has it that QST featured an article in a January/1930 or January/1935
> > issue on the subject of homebrew transmitter crystals - how cut, lap, and
> > mount them. If anyone has QST on CDROM for those years, I'd sure appreciate
> > if you could take a look.

Ah yes..the good 'ol days of grinding FT-243 Xtals with toothpaste(or comet)to go up, and writing on the blank with #2 pencil lead to take them down a few Kilocycles....Eddie

2906. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 17:10:41 UTC
From: rover@hotmail.com
Message-ID: <c5h6uo$p55$1@newsg1.svr.pol.co.uk>
Source record: 26993

7 = G ood
3 = C heer

2907. Digital cable boxes as parts sources?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 17:35:43 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <PxVec.16737$K_.503166@bgtnsc05-news.ops.worldnet.att.net>
Source record: 26994

Used digital cable boxes are in plentiful supply for about $10 apiece. I've never had the chance to look inside one. Are there enough usable components inside one to justify the price, or are they using proprietary or SMT components that would be hard to use? Thanks.

73,

"PM"

2908. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 17:44:19 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404130944.67253e1a@posting.google.com>
Source record: 26995
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Hi Harold,

Nice of John to make that offer!

As for background and theory, I'll make copies of an artcile or two to send you, about the discovery of the effect and the optimization of diode structure to enhance it. I suppose that the effect you're seeing with the Schottkys is almost entirely capacitive stored charge, and that won't "sweep out" of the diode with the sharp step you get with a step-recovery diode. The articles I'll send have info about efficiency, which can be surprisingly high considering the high order of multiplication.

Cheers,
Tom

"Harold E. Johnson" <W4ZCB@mchsi.com> wrote in message news:<3QBec.21137$_K3.55643@attbi_s53>...
> > If you do use diodes for higher-order harmonic generation, and not
> > just a simple full-wave-rectifier type frequency doubler, I suppose
> > you want something of the nature of a step recovery diode. That
> > implies minority carrier stored charge in the diode, and that would
> > preclude using a Schottky diode (which would work great in the
> > full-wave-rectifier type doubler). If you get into actually wanting
> > to generate harmonic combs out to microwave frequencies, it's probably
> > worthwhile looking for diodes actually characterized for step recovery
> > service. But I really think that's way beyond what you are trying to
> > accomplish right now.
>
> My turn to learn something here. Tom, would you elaborate a bit on the above
> please? I know SRD's are comb generators out to visible light, but they're
> also 50 percent hard to find and 50 percent magic. I've been using
> Schottky's for X16 multipliers to 2 GHz, am I doing something wrong? (I keep
> promising myself that I'm gonna substitute an MMIC for that one day, I DID
> find the "Filter Gain" in the line length from generator to filter), THAT
> was both impressive AND helpful. If I go with the MMIC, any preference of
> Silicon over GaAs?
>
> Regards
>
> W4ZCB

2909. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 17:58:31 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c5h9o7$r2d$1@freenet9.carleton.ca>
Source record: 26996

"Eddie Haskel" (wiseguy@clever.com) writes:
>> > Rumor has it that QST featured an article in a January/1930 or
> January/1935
>> > issue on the subject of homebrew transmitter crystals - how cut, lap,
> and
>> > mount them. If anyone has QST on CDROM for those years, I'd sure
> appreciate
>> > if you could take a look.
>
> Ah yes..the good 'ol days of grinding FT-243 Xtals with toothpaste(or
> comet)to go up, and writing on the blank with #2 pencil lead to take them
> down a few Kilocycles....Eddie
>
>
Actually, considering the date of the magazine, they aren't talking
about shifting commercial crystals.

They must be talking about taking quartz, and making crystals. On
the same level as making your own capacitors. I gather it might
have been common back then. Does the date coincide with requirements
of "crystal like" stability? I can't remember when such rules came into
effect, but I can imagine it would have set off homebrewing of crystals.
For that matter, there may not have been that much choice; I have no
idea what the state of commercial crystal manufacturers were back
then. ANd considering it was the thirties, likely many hams had
no money to buy commercial crystals, but they could scrounge.

It was WWII that offered up all those surplus crystals in FT-243 holders.
If you were lucky, some would fall where you needed them. A bit less
luck, and you'd at least find some close enough to your needs that you
could grind them a bit and move them onto your frequency. With no luck,
you'd have to buy crystals.

One could reference the other thread about selecting a receiver's IF
frequency. Often, such selection resolved to what was available. If
you could buy a filter, you'd use that frequency. Likewise when hams
started making crystal lattice filters after WWII, they used frequencies
which were available (which luckily overlapped the common 455KHz IF).
Even today, the choice of frequency for a homemade crystal ladder filter
often depends on what crystals are available cheap. Not the only criteria,
but one of the criterias.

Michael VE2BVW

2910. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 18:07:01 UTC
From: Joel Kolstad <JKolstad71HatesSpam@Yahoo.Com>
Message-ID: <c5ha0c$tt5$1@news.oregonstate.edu>
Source record: 26897
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Watson A.Name - "Watt Sun, the Dark Remover" <NOSPAM@dslextreme.com> wrote:
> My attitude is that rather than try to do this (and in the process lose
> reliability), it's better to go supersize on the cells, add more area
> and overall capacity to get you thru the cloudy days, and have a higher
> capacity overall.

The argument usually goes that getting, say, 10-20% more power from a better charge controller (one of these so-called 'maximum power point controllers') can be cheaper (in additional expenditures) than getting 10-20% larger panels. It's sometimes difficult to show, though, particularly on small systems -- but MPPT controllers have been getting cheaper for awhile, now, and I expect that eventually all but the cheapest/smallest will have this functionality.

---Joel Kolstad

2911. Re: Refresh old capacitors. How to ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 18:32:36 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <107ocicpkn0ar84@corp.supernews.com>
Source record: 26898

Here are postings I made on this topic on this group on August 1, 2001 and April 22, 1999. I'm sure you can find a lot of other relevant postings with a google groups search.

You apply a variable DC voltage through a current limiting resistor. Adjust the voltage so that the capacitor draws a few mA of current. (What you want to avoid is excessive heating of the capacitor.) As the dielectric layer thickens, the current will slowly drop. When it does, increase the voltage again to get the current back up to a few mA. Continue this until you've applied the full rated voltage and the current at that voltage has dropped to a very low level. Or you can use a fixed voltage source equal to the rated capacitor voltage, and vary the resistance to maintain the desired current.

One point that hasn't been mentioned here is that the voltage-handling ability of electrolytic capacitors declines if they're stored for long periods without use. So a capacitor might be bad after long storage, but can be brought back to life.

The insulator is a coating which is plated onto one of the electrodes by an electroplating process. This process naturally occurs due to the applied voltage when the capacitor is in use. When stored for long periods, the coating deteriorates and must be re-formed to restore the capacitor to its original voltage rating. (An associated problem is that when in use, the dielectric coating will, over a long period, naturally degrade to match the applied voltage. So if changes are made in the circuit which raise the capacitor voltage, say by replacing an old rectifier tube, the capacitor can leak or explode due to the suddenly increased leakage current.)

An electrolytic capacitor is re-formed by applying a voltage through a current-limiting resistor. The voltage is slowly increased until the leakage current reaches some specified value, then left at that level until the leakage drops to a low value as the dielectric layer forms. Then the voltage is increased until the leakage current again increases to the limit and left at that value for forming, and so forth, until the leakage is adequately low at the rated voltage.

There are various rules of thumb for how large a leakage current can be tolerated during re-forming. One reference I have for modern capacitors gives 5 mA for small PC-board-mount capacitors, and 10 mA for large computer grade capacitors. It seems to me the important

thing is to limit the temperature rise, so the tolerable current would
really be a function of capacitor size and the voltage across it. A
quick look at the _ARRL Handbook_ index didn't reveal anything about
this topic, but I know it was in the Handbook many years ago. The
folks on the .boatanchors newsgroup should be able to provide a lot
more practical information on the topic for those who are interested.

Roy Lewallen, W7EL

Steve Nosko wrote:

> "Per-Ake Andersson" <pake@extrafoi.se> wrote in message
> news:pake-0101040332030001@dhcp-032-102.foi.se...
>
>>I have a powersupply which have been stored for 15 years.
>>Now I want to use it. But I think the high volt(500 V) capacitors
>>need to be refreshed (right word?). (To slowly increase the voltage.)
>>
>>Questions are for ex.: how fast, how long time at each level.
>>Cant find any info on the net or in the handbook.
>>Is there any info on the net ? Or here ?
>>
>>/Per-Ake
>
>
>
> Wish I could remember where, but there was something within the last 6 mo
> where it talked about monitoring the CURRENT. I would think that HOT caps
> are a BAD thing and should be avoided. My guess is that t15 years isn't
> long, but better safe...
>
>
>

2912. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 18:41:49 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <107od3irgcbd601@corp.supernews.com>
Source record: 26899
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

In my limited experience, you have to be a little careful using a switching, or even a series pass, regulator with a solar panel. Most are designed to regulate voltage coming from a relatively stiff source, and some become unstable when hooked to a high impedance source like a solar panel. This can often be overcome by putting a big capacitor across the panel, and it can of course be overcome by designing the regulator to function properly with the high impedance source in the first place. And quite a few regulators work just fine without modification. But it's something to keep in mind when using a regulator designed for more conventional applications.

Roy Lewallen, W7EL

Renï¿½ wrote:
>
> I have seen elegant ckts where a simple switcher was used, regulating
> the *input* voltage coming from the solar cell, keeping it in max
> efficiency mode at all loads. This obviously only works with flexible
> loads such as slow chargers or such.
>

2913. Re: What does "73" in hamspeak

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 18:50:51 UTC
From: Dick <dick@langwang.demon.co.uk>
Message-ID: <KbM+8ABLaDfAFwyH@langwang.demon.co.uk>
Source record: 26900

My copy of Tom French's Railway Telegrapher's Handbook has '73' as
railway telegraphese for 'Accept my compliments'. Funnily enough there
is no corresponding entry for '88' but I suppose as a predominantly male
profession in another era non-inclusion was only to be expected.
--
Dick
GM0MNL Fra' Auld Reekie

2914. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 19:11:47 UTC
From: Joerg <notthisjoergsch@removethispacbell.net>
Message-ID: <407C3C66.CFB13D0@removethispacbell.net>
Source record: 26902
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

That is exactly the point, Joel. Upsizing 20% is several times more expensive compared to providing an intelligent switcher to match to the illumination or to adapt a panel voltage that isn't matching the storage devices. That situation won't change unless there is a tremendous breakthrough in technology or serious new government subsidies.

As to reliability, a switcher that is designed correctly and conservatively should easily outlasts the cells. Even for small installations it is easy, especially in view of the large variety of micro controllers that retail for a few Dollars. One of these plus a few discretes and an inductor can do the trick.

Regards, Joerg.

2915. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 19:14:45 UTC
From: John Larkin <jjlarkin@highSNIPlandTHIStechPLEASEnology.com>
Message-ID: <7oeo70pm6ipnhq9otivu33ukl57qnngubp@4ax.com>
Source record: 26901
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On 13 Apr 2004 10:44:19 -0700, k7itm@aol.com (Tom Bruhns) wrote:

>Hi Harold,
>
>Nice of John to make that offer!
>
>As for background and theory, I'll make copies of an artcile or two to
>send you, about the discovery of the effect and the optimization of
>diode structure to enhance it. I suppose that the effect you're
>seeing with the Schottkys is almost entirely capacitive stored charge,
>and that won't "sweep out" of the diode with the sharp step you get
>with a step-recovery diode. The articles I'll send have info about
>efficiency, which can be surprisingly high considering the high order
>of multiplication.
>
>Cheers,
>Tom
>

Tom,

I'd appreciate a copy of that stuff. The history of the Boff Diode is
kinda neat.

I have some papers (hardcopy... faxable) on the Grehkov-effect drift
step-recovery diode; we use it to make 2400-volt, 3 ns wide pulses at
500 KHz, as long as the cold water keeps flowing.

John

2916. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 19:40:39 UTC
From: "J. Yazel" <jyazel@netset.com>
Message-ID: <4ego70d1evllftm6bf9uejopq43gpg68h2@4ax.com>
Source record: 26903

On Mon, 12 Apr 2004 21:29:32 GMT, "H. Peter Friedrichs"
<XXXhpfuopZZZ@mindspring.com> wrote:
>Hello, All:
>
>Rumor has it that QST featured an article in a January/1930 or January/1935
>issue on the subject of homebrew transmitter crystals - how cut, lap, and
>mount them. If anyone has QST on CDROM for those years, I'd sure appreciate
>if you could take a look.
>
>Remove XXX's and ZZZ's if you wish to reply directly, and thanks.
>
>Pete
>AC7ZL
> ============================

Here's a few more pointers:

CQ 01/49 p. 37 Grinding xtals simplified
CQ 11/57 p. 74 How to grind xtals
CQ 10/65 p. 52 Grinding surplus xtals
QST 02/54 p. 45 Using grid-dipper as aid to xtal grinding
QST 06/58 p. 19 Grinding xtals

Jack W8RAG

2917. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 20:15:53 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <ZTXec.32434$rg5.50253@attbi_s52>
Source record: 26904
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

> >Nice of John to make that offer!
> >
You bet! MaCom is no HP however, and their "data sheets" are awfully skimpy.
I can almost put money on losing at least one finding out how sturdy they
are.

> >As for background and theory, I'll make copies of an artcile or two to
> >send you, about the discovery of the effect and the optimization of
> >diode structure to enhance it.

Will appreciate that as well Tom. I don't have to know the physics to make
use of the device, but it's helpful to have that insight when you're trying
to optimize the circuitry.

W4ZCB

2918. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 21:09:11 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <107olna3gf5q437@corp.supernews.com>
Source record: 26905

Michael Black wrote:

> "Eddie Haskel" (wiseguy@clever.com) writes:
>
>>>>Rumor has it that QST featured an article in a January/1930 or
>>
>>January/1935
>>
>>>>issue on the subject of homebrew transmitter crystals - how cut, lap,
>>
>>and
>>
>>>>mount them. If anyone has QST on CDROM for those years, I'd sure
>>
>>appreciate
>>
>>>>if you could take a look.
>>
>>Ah yes..the good 'ol days of grinding FT-243 Xtals with toothpaste(or
>>comet)to go up, and writing on the blank with #2 pencil lead to take them
>>down a few Kilocycles....Eddie
>>
>>
>
> Actually, considering the date of the magazine, they aren't talking
> about shifting commercial crystals.
>
> They must be talking about taking quartz, and making crystals. On
> the same level as making your own capacitors. I gather it might
> have been common back then. Does the date coincide with requirements
> of "crystal like" stability? I can't remember when such rules came into
> effect, but I can imagine it would have set off homebrewing of crystals.
> For that matter, there may not have been that much choice; I have no
> idea what the state of commercial crystal manufacturers were back
> then. ANd considering it was the thirties, likely many hams had
> no money to buy commercial crystals, but they could scrounge.
>
> It was WWII that offered up all those surplus crystals in FT-243 holders.
> If you were lucky, some would fall where you needed them. A bit less
> luck, and you'd at least find some close enough to your needs that you
> could grind them a bit and move them onto your frequency. With no luck,
> you'd have to buy crystals.
>
> One could reference the other thread about selecting a receiver's IF

> frequency. Often, such selection resolved to what was available. If
> you could buy a filter, you'd use that frequency. Likewise when hams
> started making crystal lattice filters after WWII, they used frequencies
> which were available (which luckily overlapped the common 455KHz IF).
> Even today, the choice of frequency for a homemade crystal ladder filter
> often depends on what crystals are available cheap. Not the only criteria,
> but one of the criterias.
>
> Michael VE2BVW
>
>
>

This was actually just before then, when crystal stability was expected
but not (I believe) required. The '33 handbook "starter transmitter"
was just a TNT oscillator connected to an antenna.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

2919. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 21:11:30 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <107olrl4doe7re6@corp.supernews.com>
Source record: 26906

Eddie Haskel wrote:

>>>Rumor has it that QST featured an article in a January/1930 or
>
> January/1935
>
>>>issue on the subject of homebrew transmitter crystals - how cut, lap,
>
> and
>
>>>mount them. If anyone has QST on CDROM for those years, I'd sure
>
> appreciate
>
>>>if you could take a look.
>
>
> Ah yes..the good 'ol days of grinding FT-243 Xtals with toothpaste(or
> comet)to go up, and writing on the blank with #2 pencil lead to take them
> down a few Kilocycles....Eddie
>
>

No, the good _really_ 'ol days of taking a chunk of quartz, whacking pieces off of it with a mud saw, hand lapping the saw marks off and mounting it in a home-made holder. That namby-pamby FT-243 wasn't invented until just before WW-II.

The same magazine has an article about the blind ham who built his own equipment. Soldering by feel. There were giants in those days...

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

2920. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 22:22:24 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <407C6820.FB28F7A9@rica.net>
Source record: 26907
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Roy Lewallen wrote:
>
> In my limited experience, you have to be a little careful using a
> switching, or even a series pass, regulator with a solar panel. Most are
> designed to regulate voltage coming from a relatively stiff source, and
> some become unstable when hooked to a high impedance source like a solar
> panel. This can often be overcome by putting a big capacitor across the
> panel, and it can of course be overcome by designing the regulator to
> function properly with the high impedance source in the first place. And
> quite a few regulators work just fine without modification. But it's
> something to keep in mind when using a regulator designed for more
> conventional applications.

Just for efficiency reasons, I think you would want ot have enough
capacitance across the regulator input that the cell resistance drops
voltage only with respect ot the average output current, not the
switcher peak value. This can be a pretty big factor in the overall
efficiency. Using a switcher that has little ripple current on its
input (two phase boost, for instance) makes this much easier.

--
John Popelish

2921. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 22:31:01 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c5hpqsdju1@newshost.mot.com>
Source record: 26909

"Tim Wescott" <tim@wescottnospamdesign.com> wrote in message
news:107olrl4doe7re6@corp.supernews.com...
> Eddie Haskel wrote:
>
> >>>Rumor has it that QST featured an article in a January/1930 or
> >
> > January/1935
> >
> >>>issue on the subject of homebrew transmitter crystals - how cut, lap,
> >
> > and
> >
> >>>mount them. If anyone has QST on CDROM for those years, I'd sure
> >
> > appreciate
> >
> >>>if you could take a look.
> >
> >
> > Ah yes..the good 'ol days of grinding FT-243 Xtals with toothpaste(or
> > comet)to go up, and writing on the blank with #2 pencil lead to take
them
> > down a few Kilocycles....Eddie
> >
> >
>
> No, the good _really_ 'ol days of taking a chunk of quartz, whacking
> pieces off of it with a mud saw, hand lapping the saw marks off and
> mounting it in a home-made holder. That namby-pamby FT-243 wasn't
> invented until just before WW-II.
>
> The same magazine has an article about the blind ham who built his own
> equipment. Soldering by feel. There were giants in those days...
>
> --
>
> Tim Wescott
> Wescott Design Services
> http://www.wescottdesign.com

2922. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 22:32:17 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c5hpt9$dk4$1@newshost.mot.com>
Source record: 26908

"Tim Wescott" <tim@wescottnospamdesign.com> wrote in message
news:107olrl4doe7re6@corp.supernews.com...
> Eddie Haskel wrote:
>
> >>>Yes Mrs. Cleaver... ....Eddie
> > >
> > >
>
> [...snip...]

> The same magazine has an article about the blind ham who built his own
> equipment. Soldering by feel. There were giants in those days...
> Tim Wescott

O U C H !!

2923. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 23:12:02 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <htro70ph6rvoqush43e2va68tu3k8tlfvk@4ax.com>
Source record: 26910
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On 13 Apr 2004 10:44:19 -0700, k7itm@aol.com (Tom Bruhns) wrote:

>Hi Harold,
>
>Nice of John to make that offer!
>
>As for background and theory, I'll make copies of an artcile or two to
>send you, about the discovery of the effect and the optimization of
>diode structure to enhance it. I suppose that the effect you're
>seeing with the Schottkys is almost entirely capacitive stored charge,
>and that won't "sweep out" of the diode with the sharp step you get
>with a step-recovery diode. The articles I'll send have info about
>efficiency, which can be surprisingly high considering the high order
>of multiplication.

What's a sensible target for the multiplication factor using diodes
from say a 4Mhz source? I'd be nice to go straight to say 20X on
account of the large physical size of the filters at lower HF., not to
mention the savings on intermediate stages.

2924. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 23:26:09 UTC
From: rmonagha@engr.smu.edu
Message-ID: <c5hsuh$7m4$1@blaze.seas.smu.edu>
Source record: 26911

actually, it is a lot easier to simply etch or grind away some of the xtal, then check it with a grid dip oscillator for sharp dip, no need to remount and test ;-) An old Hints and Kinks IIRC. This could be really handy if you wanted to make a xtal filter and needed to really match and control the xtal freq offsets (what, 3.5179 Mhz xtals from TV color burst sources?) ;-)

and how about drilling a small hold in the holder so you could tread a small bolt to put pressure on the xtal holder plates, shifting the xtal freq. around like a xtal controlled VFO - but only a handful of khz ;-) Still, very solid (pun intended) freq. source that can be varied around enough to avoid QRM at minimal cost and effort for QRPers and so on? ;-)

Wasn't there a recent historical article in QST on the role of the quartz xtal industry in WWII, how they figured out overtone osc. issues and so on?

Given that some sources ask $12 and up for scanner and ham crystals, these costs add up rather fast if you need to replace a bunch of xtals in a scanner. So the search for alternatives seems quite worthwhile ;-)

regards bobm
--
****
* Robert Monaghan POB 752182 Southern Methodist Univ. Dallas Tx 75275 *
**********Standard Disclaimers Apply**********

2925. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 23:27:29 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <107otqmcii1b81a@corp.supernews.com>
Source record: 26912
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

John Popelish wrote:

> Roy Lewallen wrote:
>
>>In my limited experience, you have to be a little careful using a
>>switching, or even a series pass, regulator with a solar panel. Most are
>>designed to regulate voltage coming from a relatively stiff source, and
>>some become unstable when hooked to a high impedance source like a solar
>>panel. This can often be overcome by putting a big capacitor across the
>>panel, and it can of course be overcome by designing the regulator to
>>function properly with the high impedance source in the first place. And
>>quite a few regulators work just fine without modification. But it's
>>something to keep in mind when using a regulator designed for more
>>conventional applications.
>
>
> Just for efficiency reasons, I think you would want ot have enough
> capacitance across the regulator input that the cell resistance drops
> voltage only with respect ot the average output current, not the
> switcher peak value. This can be a pretty big factor in the overall
> efficiency. Using a switcher that has little ripple current on its
> input (two phase boost, for instance) makes this much easier.
>

That's not the point. Because a switcher tends to draw a constant power from a load it's input impedance has a negative resistive component. If you match this with a source that has a too-high impedance it'll be _unstable_; a big capacitor would just slow it down in this case.

Presumably what you need is a controller that detects when the supply voltage gets down to some threshold, then regulates the supply-side current rather than the load-side voltage.

Come to think of it that'd be a fun thing to design...

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

2926. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 23:55:31 UTC
From: Bill Janssen <billjNOTTHIS@ieee.org>
Message-ID: <T5%ec.1615$Kv3.324@news01.roc.ny>
Source record: 26914

Steve Nosko wrote:

>"H. Peter Friedrichs" <XXXhpfuopZZZ@mindspring.com> wrote in message
>news:0TDec.7141$A_4.6041@newsread1.news.pas.earthlink.net...
>
>
>>Hello, All:
>>
>>Rumor has it that QST featured an article in a January/1930 or
>>
>>
>January/1935
>
>
>>issue on the subject of homebrew transmitter crystals - how cut, lap, and
>>mount them. If anyone has QST on CDROM for those years, I'd sure
>>
>>
>appreciate
>
>
>>if you could take a look.
>>Remove XXX's and ZZZ's if you wish to reply directly, and thanks.
>>Pete
>>AC7ZL
>>
>>
>
>
> Pete,
>
> I have my Dad's grinding stuff, but don't do it. One thing to keep in
>mind, and I don't know the details, but remember that the crystal activity
>is effected by the edges. Grinding the edges is one of the more esoteric
>aspects.
>
>
The trick isn't the edges but keeping the two surfaces parallel and
flat. The procedure is to grind a little
and check the activity. If it is down try to grind the center or edges
and check again. If it gets better
then go back to to grinding and trying to keep it flat.

Anyway that is the method I used.

Bill K7NOM

2927. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-13 23:58:35 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <407C7EAB.E2812870@rica.net>
Source record: 26913
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Tim Wescott wrote:
>
> John Popelish wrote:

> > Just for efficiency reasons, I think you would want ot have enough
> > capacitance across the regulator input that the cell resistance drops
> > voltage only with respect ot the average output current, not the
> > switcher peak value. This can be a pretty big factor in the overall
> > efficiency. Using a switcher that has little ripple current on its
> > input (two phase boost, for instance) makes this much easier.
> >
>
> That's not the point. Because a switcher tends to draw a constant power
> from a load it's input impedance has a negative resistive component. If
> you match this with a source that has a too-high impedance it'll be
> _unstable_; a big capacitor would just slow it down in this case.
>
> Presumably what you need is a controller that detects when the supply
> voltage gets down to some threshold, then regulates the supply-side
> current rather than the load-side voltage.
>
> Come to think of it that'd be a fun thing to design...

Very few switchers draw an instantaneously constant power from the
unregulated source. Almost all can draw an average constant power
(over the switching period). The difference means a lot when you
consider what the variations do to the total losses in the solar
cells. You missed my point, completely.

--
John Popelish

2928. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 00:36:17 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <5I%ec.31265$wP1.102148@attbi_s54>
Source record: 26915
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

> What's a sensible target for the multiplication factor using diodes
> from say a 4Mhz source? I'd be nice to go straight to say 20X on
> account of the large physical size of the filters at lower HF., not to
> mention the savings on intermediate stages.

An 8 MHz filter doesn't have to be physically large Paul, and efficiency drops pretty fast (Think like a rock) as the multiplication factor goes up. Have you ever actually defined what it is you're trying to do? Some control thing in your 70 MHz band? Or real power for some application? Hard to hit a moving target. Or is that the idea?

W4ZCB

2929. Re: Help Finding Latching Relay

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 00:57:52 UTC
From: Markus Baertschi <markus.usenet@markus.org>
Message-ID: <c5i2du$203jt$1@ID-71449.news.uni-berlin.de>
Source record: 26916

randy wrote:
> I'm looking for a source of new latching relays.
>
> Coil needs to be 12 to 24 volt and contacts of 10 amps at 120 volts
> AC.
>
> Randy

The X10 Appliance modules contain a latching relay. At about $10 a piece
this might be your best choice.

Markus

2930. Re: Help Finding Latching Relay

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 01:05:51 UTC
From: dplatt@radagast.org
Message-ID: <107p3jf5me85ma7@corp.supernews.com>
Source record: 26917

>> I'm looking for a source of new latching relays.
>>
>> Coil needs to be 12 to 24 volt and contacts of 10 amps at 120 volts
>> AC.

>The X10 Appliance modules contain a latching relay. At about $10 a piece
>this might be your best choice.

The last time I looked at one of these, what I found wasn't a latching relay in the usual sense. It's a solenoid which drives a rotating two-position switching thingie. There isn't a separate "set" and "reset" coil.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

2931. Re: Help Finding Latching Relay

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 01:09:43 UTC
From: Gary Schafer <gaschafer@comcast.net>
Message-ID: <dp3p701nh1td21ucr9evbhccm8ipql07es@4ax.com>
Source record: 26918

I have a bunch of 15 or 20 amp latching relays that were used in house wiring. But they do have 2 coils. One to latch and one to unlatch. 24 vac coils.

73
Gary K4FMX

On Mon, 12 Apr 2004 22:32:04 -0500, randy wrote:

>I'm looking for a source of new latching relays.
>
>Coil needs to be 12 to 24 volt and contacts of 10 amps at 120 volts
>AC.
>
>The catch is I don't want any dual coil type relays. I have an
>application in which I want a contact closure on the coil to turn the
>relay on and another closure will turn it off again.
>
> I would even be receptive to a solid-state module that would give me
>the pulse on / pluse off action that I could use to control a relay.
>
>Randy
>
>XXXrand@farmtel.netABC

2932. Re: Message To America's Students: The War, The Draft, Your Future

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 01:18:56 UTC
From: CC <Admin@127.0.0.1>
Message-ID: <407C9342.2050706@127.0.0.1>
Source record: 26919
Cross-posted to: rec.radio.amateur.homebrew,psi.pipelineusa.literature,sunet.biomed.neurosci.neurophysiol,alt.buffy.europe,sci.astro.amateur,ubc.eus

Just remember, "They" are the Democrat's that want to reinstate the
Draft. The call for reinstating the Draft came from the liberal isle.

Bunch of lying dictator wanabe's.

Mitch Alsup wrote:
> If they institute a draft, they should remember, they have already
> given all the kids drafted an out: "I'm gay". They can't have it
> both ways.

2933. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 01:57:06 UTC
From: Tony <tony_roe@tpg.com.au>
Message-ID: <9fro70p8ej0qmsp1itv3660lka9lt4v9no@4ax.com>
Source record: 26921
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

This is a good learning experience for lots of us out here. Any chance of
scanning the printed material and posting , say on a.b.s.e?

On 13 Apr 2004 10:44:19 -0700, k7itm@aol.com (Tom Bruhns) wrote:

>Hi Harold,
>
>Nice of John to make that offer!
>
>As for background and theory, I'll make copies of an artcile or two to
>send you, about the discovery of the effect and the optimization of
>diode structure to enhance it. I suppose that the effect you're
>seeing with the Schottkys is almost entirely capacitive stored charge,
>and that won't "sweep out" of the diode with the sharp step you get
>with a step-recovery diode. The articles I'll send have info about
>efficiency, which can be surprisingly high considering the high order
>of multiplication.
>
>Cheers,
>Tom
>
>"Harold E. Johnson" <W4ZCB@mchsi.com> wrote in message
news:<3QBec.21137$_K3.55643@attbi_s53>...
>> > If you do use diodes for higher-order harmonic generation, and not
>> > just a simple full-wave-rectifier type frequency doubler, I suppose
>> > you want something of the nature of a step recovery diode. That
>> > implies minority carrier stored charge in the diode, and that would
>> > preclude using a Schottky diode (which would work great in the
>> > full-wave-rectifier type doubler). If you get into actually wanting
>> > to generate harmonic combs out to microwave frequencies, it's probably
>> > worthwhile looking for diodes actually characterized for step recovery
>> > service. But I really think that's way beyond what you are trying to
>> > accomplish right now.
>>
>> My turn to learn something here. Tom, would you elaborate a bit on the above
>> please? I know SRD's are comb generators out to visible light, but they're
>> also 50 percent hard to find and 50 percent magic. I've been using
>> Schottky's for X16 multipliers to 2 GHz, am I doing something wrong? (I keep
>> promising myself that I'm gonna substitute an MMIC for that one day, I DID
>> find the "Filter Gain" in the line length from generator to filter), THAT
>> was both impressive AND helpful. If I go with the MMIC, any preference of
>> Silicon over GaAs?
>>
>> Regards

>>
>> W4ZCB

Tony (remove the "_" to reply by email)

2934. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 02:05:11 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c5i68ngsf1@freenet9.carleton.ca>
Source record: 26920

Bob Monaghan (rmonagha@engr.smu.edu) writes:
>
> Wasn't there a recent historical article in QST on the role of the quartz
> xtal industry in WWII, how they figured out overtone osc. issues and so
> on?
>
> Given that some sources ask $12 and up for scanner and ham crystals, these
> costs add up rather fast if you need to replace a bunch of xtals in a
> scanner. So the search for alternatives seems quite worthwhile ;-)
>
But they already figured out the solution, thirty years ago, and
it did not require going to the quarry for quartz and digging out
old QSTs. The need for a lot of crystals luckily coincided with
digital ICs, so before most people could get around to paying for
all the crystals to fill out a mult-channel unit, synthesizers came
along so you only needed one crystal. About as soon as it could be
done practically, hams built them and wrote up articles in the ham
magazines.

Anyone who decides to make their own crystals today, other than
for the sake of doing so (and I admit it would be an interesting
thing to try), will likely find they can't go for the subminiature
look, and probably will find that putting effort into building
a synthesizer still makes sense if you need more than a few
crystals.

Michael VE2BVW

2935. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 03:32:17 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <107pc5kacsama5f@corp.supernews.com>
Source record: 26922

Michael Black wrote:
> Bob Monaghan (rmonagha@engr.smu.edu) writes:
>
>>Wasn't there a recent historical article in QST on the role of the quartz
>>xtal industry in WWII, how they figured out overtone osc. issues and so
>>on?
>>
>>Given that some sources ask $12 and up for scanner and ham crystals, these
>>costs add up rather fast if you need to replace a bunch of xtals in a
>>scanner. So the search for alternatives seems quite worthwhile ;-)
>>
>
> But they already figured out the solution, thirty years ago, and
> it did not require going to the quarry for quartz and digging out
> old QSTs. The need for a lot of crystals luckily coincided with
> digital ICs, so before most people could get around to paying for
> all the crystals to fill out a mult-channel unit, synthesizers came
> along so you only needed one crystal. About as soon as it could be
> done practically, hams built them and wrote up articles in the ham
> magazines.
>
> Anyone who decides to make their own crystals today, other than
> for the sake of doing so (and I admit it would be an interesting
> thing to try), will likely find they can't go for the subminiature
> look, and probably will find that putting effort into building
> a synthesizer still makes sense if you need more than a few
> crystals.
>
> Michael VE2BVW
>

Absolutely: You should only make your own crystals for the same reasons
you'd knap your own stone tools -- to understand how it was done back in
the day, and to have some thing to show off to friends. You could get
crystals much faster by cleaning toilets at McDonald's and buying them
at $12 a pop than you could making them from scratch.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

2936. Re: Help Finding Latching Relay

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 03:47:38 UTC
From: randy
Message-ID: <olcp709s897g9i3uov717l81dijchhg2vp@4ax.com>
Source record: 26923

This type of relay would work depending on the coil voltage. However
I would guess that voltage is also 120 volt.

What I am trying to do is have the ability to switch 4-5 different
lights (150-1000 watt) from several locations within the same building
without all the hassle of 2 and 3-way switches.

My plan is to have a relay bank that these lights would source from
(total wire run of 60-75 feet) then have small low voltage/current
pushbutton switches activate the relays. 4-5 small pushbuttons could
control any light in the building from that location.

I have thought about X10 but have also read more bad than good about
the wierd things they do or don't do.

Randy

>>> I'm looking for a source of new latching relays.
>>>
>>> Coil needs to be 12 to 24 volt and contacts of 10 amps at 120 volts
>>> AC.
>
>>The X10 Appliance modules contain a latching relay. At about $10 a piece
>>this might be your best choice.
>
>The last time I looked at one of these, what I found wasn't a latching
>relay in the usual sense. It's a solenoid which drives a rotating
>two-position switching thingie. There isn't a separate "set" and
>"reset" coil.

2937. Looking for a Drake 50KC IF Transformer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 04:42:13 UTC
From: George Curtis <gdcurtis@comcast.net>
Message-ID: <Fi3fc.138369$JO3.84376@attbi_s04>
Source record: 26924

Anyone got a junk R4B. I need T10

George K9GQ

2938. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 06:00:09 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <49kp705ldduu7e7jnccsogv2vedb2cru9d@4ax.com>
Source record: 26925
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On Tue, 13 Apr 2004 16:27:29 -0700, Tim Wescott
<tim@wescottnospamdesign.com> wrote:

>John Popelish wrote:

>>
>> Just for efficiency reasons, I think you would want ot have enough
>> capacitance across the regulator input that the cell resistance drops
>> voltage only with respect ot the average output current, not the
>> switcher peak value. This can be a pretty big factor in the overall
>> efficiency. Using a switcher that has little ripple current on its
>> input (two phase boost, for instance) makes this much easier.
>>
>
>That's not the point. Because a switcher tends to draw a constant power
>from a load it's input impedance has a negative resistive component. If
>you match this with a source that has a too-high impedance it'll be
>_unstable_; a big capacitor would just slow it down in this case.

While there certainly are going to be stability issues, using a
switcher with say 50 % duty cycle will draw 0 A half of the time (i.e.
the PV cell is operating in the constant voltage mode) and 2 Iave the
other half of the time (i.e. the cell would operate in the constant
current mode) and never operate at the maximum power point (here
assumed to be at Iave).

Sufficient parallel capacitances and/or series inductances or some
push-pull arrangement will keep the current constantly at Iave and
thus at the maximum power point.

Paul

2939. Re: Help Finding Latching Relay

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 06:40:38 UTC
From: ghldbrd@ccp.com
Message-ID: <598dc4be.0404132240.35f00cc1@posting.google.com>
Source record: 26926

randy wrote in message news:<konm70h13pqe0jhg14o2rtpke86qioqcc2@4ax.com>...
> I'm looking for a source of new latching relays.
>
> Coil needs to be 12 to 24 volt and contacts of 10 amps at 120 volts
> AC.
>
> The catch is I don't want any dual coil type relays. I have an
> application in which I want a contact closure on the coil to turn the
> relay on and another closure will turn it off again.
>
> I would even be receptive to a solid-state module that would give me
> the pulse on / pluse off action that I could use to control a relay.
>
> Randy
>
> XXXrand@farmtel.netABC

All latching relays have a dual coil setup, with a mechanical latching
arrangement on the armature.

If you want just one coil, you need a simple flip/flop driving a
transistor whose collector load is the relay coil. Lots of example
circuits in the Handbook of Electronic Circuits Vols 1-7.

Gary Hildebrand WA7KKP

2940. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 07:29:55 UTC
From: mike <spamme0@juno.com>
Message-ID: <407CE873.5080907@juno.com>
Source record: 26927
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Paul Keinanen wrote:
> On Mon, 12 Apr 2004 13:02:38 -0700, "Watson A.Name \"Watt Sun - the
> Dark Remover\"" <NOSPAM@dslextreme.com> wrote:
>
>
>>Joerg wrote:
>>
>>
>>>Another option might be to use a different voltage panel,
>>>whatever has a good price, and then use a small switcher to run
>>>the cells at their optimum load.
>>
>>>Regards, Joerg.
>>
>>Seems foolhardy to me, to use a boost circuit, and waste a lot of power.
>> Just put more PV cells in series to increase the voltage.
>
>
> The solar cell operates as a (badly) regulated power supply with
> current limiting. At low load currents, the cell operates nearly as a
> constant voltage source, but after a specific current (for a given
> illumination) it operates nearly as a constant current source and
> deliver approximately that current even into a short circuit.
>
> The largest power from the cell (for a specific illumination) is
> obtained at the point it switches from constant voltage to constant
> current mode, in which both the voltage is quite close (within 30 %)
> of both the maximum voltage (as measured at open circuit) and maximum
> current (as measured at short circuit).
>
> This maximum power point varies with illumination, but if the switcher
> always loads the cell at this maximum power point, the largest
> available energy at a specific time is extracted from the cell
> independent of illumination.
>
> Even if the losses in the maximum power point tracker is 10-20 %,
> usually more energy can be obtained than running the module in some
> non-optimal constant voltage or constant current mode.
>
> Paul
>

Anybody got any real data on this stuff.
I set out to build a constant power solar battery charger.
I was gonna just put a PIC to measure the voltage/current and
ratchet the switcher duty cycle up and down around peak power.

Went out in the yard at noon and plotted some curves. Yep,
there's a pronounced power peak right around 14V.
At lower intensities, the shape of the curve is the same, but
it moves sideways. Ok, my pulse width strategy should track that.
Cool.
Then I turned the panel ever so slightly away from the sun.
I was amazed at how dramatically things changed with just
a small angle. Looks like I'd gain WAY more watt-hours/day
by tracking the sun
than by anything else I could think of.

mike

--
Return address is VALID.
Bunch of stuff For Sale and Wanted at the link below.
Toshiba & Compaq LiIon Batteries, Test Equipment
Honda CB-125S $800 in PDX
Yaesu FTV901R Transverter, 30pS pulser
Tektronix Concept Books, spot welding head...
http://www.geocities.com/SiliconValley/Monitor/4710/

2941. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 07:50:28 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404132350.614ba1b4@posting.google.com>
Source record: 26928
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Paul Burridge <pb@notthisbit.osiris1.co.uk> wrote in message
news:<htro70ph6rvoqush43e2va68tu3k8tlfvk@4ax.com>...

> What's a sensible target for the multiplication factor using diodes
> from say a 4Mhz source? I'd be nice to go straight to say 20X on
> account of the large physical size of the filters at lower HF., not to
> mention the savings on intermediate stages.

Well, somewhat counter to what Harold wrote, the old HP Journal
article I've dredged out to copy says a step recovery diode can do 20X
at 30% efficiency. But that's guys who really understood what they
were doing! (Just coincidentally, the one table they have is for
20X!)

He's right...the filters don't have to be huge. But I'd think of them
as large compared with a SOT-23. The tradeoff is that if you do it
all in one step, you have to have a filter sharp enough to take the
19x and 21x down to your desired level, whatever that is. But with a
5x and a 4x, you can use a couple filters with wider percentage
bandwidths, since for the 5x you'll be using a square-wave input which
has practically no 4th and 6th anyway, and the 3rd and 7th are a big
percentage removed from the 5th...and the 4x can similarly avoid the
3rd and 5th if you do it right.

But again, a PLL can be very small indeed. And I never did see an
answer to the question about does it really need to be locked to your
low freq, or can it be a separate xtal at 70MHz or whatever?

Cheers,
Tom

2942. Re: Homebrewing a receiver question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 08:16:51 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <usrp70p4tg4osbap0tesb9qq7b0uncd866@4ax.com>
Source record: 26929

Hi,

>How do you choose a I.F. when homebrewing a H.F. receiver with BFO? I
>want to build a receiver that covers all H. F. amateur bands. I am a
>little confused on how to pick the type of crystal filters to use.
>thanks

First catch your rabbit (i.e. a filter).

That is how a certain rabbit pie recipe starts and the same is
often true of radio projects. Joe Ham comes back from the yard sale
with a pair of tubes or a large transformer and then builds a linear
around what he has found. So go look for a good SSB/AM filter and
design the rest to suite.

A good compromise is 9MHz, as you can probably get away with
single conversion. Some of the tighter spec filters are at 455kHz
however but then you will have to go the dual-conversion route. Both
work, it is simply 'horses for courses'. If you want to put a roofing
filter up front, you could try a narrow 10.7MHz from an old mobile
radio but you will still need a narrow one after it.

73 de Joe, G3LLV

2943. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 12:16:59 UTC
From: "J.S.Blackburn" <j.s.blackburn@ntlworld.com>
Message-ID: <fY9fc.105$Hj.102@newsfe3-win.server.ntli.net>
Source record: 26930
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

mike wrote:
> Anybody got any real data on this stuff.

There's no shortage of information about this. Useful keywords are "insolation" and "solar insolation" (the word "solar" is slightly redundant but it's commonly included). In summer, you can expect a maximum of 1 kWatt per square metre to reach the surface of the earth. The units most commonly used are kW-Hour per square metre per day - I'll call them Units here.

Insolation tables for the USA can be seen at:
http://www.suntrekenergy.com/sunhours.htm
These figures are somewhat suspect - the difference between "high" and "low" seems too small (a maximum of 6 Units is rather low), especially when compared with the following, which contains some good maps:

http://www.wattsun.com/resources/insolation_maps/map_index.html

On this page, click on Flat Plate Collector, Single Axis Tracker and Double Axis Tracker. The latter can produce up to 14 Units in summer. The improvement when tracking the sun's angle is very large. It pays to live in California.

I have seen a similar table somewhere for the UK, showing that 5 Units is the best that can be expected, and maybe less than 1 Unit in winter.

Bear in mind that the efficiency of Solar Cells is less than 20% in the very latest state-of-the-art devices, typically 10%, and maybe as low as 5% in reject/hobbyist cells. Generating hot water directly from flat solar collectors is probably more efficient, and certainly cheaper, but not much use if it's electricity you want.

If, on a bad day, the cell voltage is less than the battery voltage, you can still charge the battery. Look at:

http://www.elecdesign.com/Articles/ArticleID/6262/6262.html#
This article appeared in Electronic Design, Sept 14 1998.

It describes a circuit for a Maximum-power-point-tracking solar battery charger. The principle is simple: the duty-ratio of a switch-mode power supply is continuously modulated at about 50Hz. The change in output on each cycle

is used to determine whether a higher or lower duty-ratio would increase the output power. A phase-sensitive detector and feedback loop determines whether to increase or decrease the average duty-ratio. It settles at the point of maximum power.

As the article points out, it works for other energy sources such as water-wheels and other devices where the shape of the "energy curve" is not precisely known.

When used as a battery charger the voltage of the battery is fairly constant, so "maximum power" means "maximum current". At the solar cell end, we are working at maximum power, although the voltage may vary. The "maximum power transfer" condition is when 50% of the power goes to the load, and 50% is dissipated in the cell. I don't know if this is precisely true in a solar cell, but it certainly implies considerable power dissipation in the cell, which may shorten its life. On the other hand, a cell of 1 square metre will have 1000 watts of solar power falling on it, and may generate 100 watts of electrical power, of which we may get 50 watts into our battery. The 50 watts dissipated in the cell is much less than the 1000 watts from the sun - so maybe it doesn't matter.

J.S.Blackburn,
London UK.

2944. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 12:43:58 UTC
From: "Duane C. Johnson" <redrok@redrok.com>
Message-ID: <407D320E.D0718077@redrok.com>
Source record: 26931
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Hi J.S.;

"J.S.Blackburn" <j.s.blackburn@ntlworld.com> wrote:

> mike wrote:
> > Anybody got any real data on this stuff.

> There's no shortage of information about this. Useful
> keywords are "insolation" and "solar insolation" (the word
> "solar" is slightly redundant but it's commonly included).
> In summer, you can expect a maximum of 1 kWatt per square
> metre to reach the surface of the earth.

This is miss leading.
While there are places, nearer to the equator, that
can have 1KW/m^2 at noon this is not the norm.

The rule of thumb is 1KW/m^2 normal to the sun
not flat on the ground.
Or about 100W/ft^2.
This is a tilted surface directly facing the sun.

> The units most commonly used are
> kW-Hour per square metre per day -
> I'll call them Units here.

> Insolation tables for the USA can be seen at:
> http://www.suntrekenergy.com/sunhours.htm
> These figures are somewhat suspect - the difference between
> "high" and "low" seems too small (a maximum of 6 Units is
> rather low), especially when compared with the following,
> which contains some good maps:

> http://www.wattsun.com/resources/insolation_maps/map_index.html

> On this page, click on Flat Plate Collector, Single Axis
> Tracker and Double Axis Tracker. The latter can produce up
> to 14 Units in summer. The improvement when tracking the
> sun's angle is very large. It pays to live in California.

> I have seen a similar table somewhere for the UK, showing
> that 5 Units is the best that can be expected, and maybe
> less than 1 Unit in winter.

> Bear in mind that the efficiency of Solar Cells is less than
> 20% in the very latest state-of-the-art devices, typically
> 10%, and maybe as low as 5% in reject/hobbyist cells.

> Generating hot water directly from flat solar collectors is
> probably more efficient, and certainly cheaper, but not much
> use if it's electricity you want.

> If, on a bad day, the cell voltage is less than the battery
> voltage, you can still charge the battery. Look at:

> http://www.elecdesign.com/Articles/ArticleID/6262/6262.html#
> This article appeared in Electronic Design, Sept 14 1998.

> It describes a circuit for a Maximum-power-point-tracking
> solar battery charger. The principle is simple: the
> duty-ratio of a switch-mode power supply is continuously
> modulated at about 50Hz. The change in output on each cycle
> is used to determine whether a higher or lower duty-ratio
> would increase the output power. A phase-sensitive detector
> and feedback loop determines whether to increase or decrease
> the average duty-ratio. It settles at the point of maximum
> power.

> As the article points out, it works for other energy sources
> such as water-wheels and other devices where the shape of
> the "energy curve" is not precisely known.

> When used as a battery charger the voltage of the battery is
> fairly constant, so "maximum power" means "maximum
> current". At the solar cell end, we are working at maximum
> power, although the voltage may vary. The "maximum power
> transfer" condition is when 50% of the power goes to the
> load, and 50% is dissipated in the cell. I don't know if
> this is precisely true in a solar cell, but it certainly
> implies considerable power dissipation in the cell, which
> may shorten its life. On the other hand, a cell of 1 square
> metre will have 1000 watts of solar power falling on it, and
> may generate 100 watts of electrical power, of which we may
> get 50 watts into our battery. The 50 watts dissipated in
> the cell is much less than the 1000 watts from the sun - so
> maybe it doesn't matter.

> J.S.Blackburn,
> London UK.

Duane

--
Home of the $35 Solar Tracker Receiver
http://www.redrok.com/electron.htm#led3X [*]
Powered by \ \ \ //|
Thermonuclear Solar Energy from the Sun / |
Energy (the SUN) \ \ \ / / |
Red Rock Energy \ \ / / |
Duane C. Johnson Designer \ \ / \ / |
1825 Florence St Heliostat,Control,& Mounts |

White Bear Lake, Minnesota === \ / \ |
USA 55110-3364 === \ |
(651)426-4766 use Courier New Font \ |
redrok@redrok.com (my email: address) \ |
http://www.redrok.com (Web site) ===

2945. fa: QST'S,plugs, resistors, parts....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 13:34:18 UTC
From: Heytubeguy <heytubeguy@worldnet.att.net>
Message-ID: <u5bfc.29747$i74.627393@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26932

see at :
http://cgi6.ebay.com/ws/eBayISAPI.dll?ViewSellersOtherItems&userid=heytubeguy&completed=0&sort=3&since=-1&include=0&page=1&rows=25

check daily, heytubeguy

2946. Dayton:Scott all Wave 15

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 13:37:13 UTC
From: Heytubeguy <heytubeguy@worldnet.att.net>
Message-ID: <d8bfc.29756$i74.627301@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26933

```
Any interest in a All Wave 15, +external amp + original speaker?
for serious only , heytubeguy, at spaces: 3128,9
```

2947. Heavy metal at Dayton

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 13:42:16 UTC
From: Heytubeguy <heytubeguy@worldnet.att.net>
Message-ID: <Ycbfc.29778$i74.627673@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26934

At spaces: 3128,9:

hv transformers, chokes, antenna elements, antique tubes,variable caps :stop
by and help lighten the load.

2948. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 13:49:48 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <407D417C.44E5E303@rica.net>
Source record: 26935
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

mike wrote:

> Then I turned the panel ever so slightly away from the sun.
> I was amazed at how dramatically things changed with just
> a small angle. Looks like I'd gain WAY more watt-hours/day
> by tracking the sun
> than by anything else I could think of.

Yep. It doesn't take much of an angle from perpendicular for a
silicon cell to act as a pretty fair mirror.

--
John Popelish

2949. Re: Refresh old capacitors. How to ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 14:04:15 UTC
From: Mike Coslo <mjc5@psu.edu>
Message-ID: <407D44DF.5090406@psu.edu>
Source record: 26936

Bill Turner wrote:
> On Tue, 13 Apr 2004 09:55:33 +0000 (UTC), pake@extrafoi.se (Per-Ake
> Andersson) wrote:
>
>
>>I have a powersupply which have been stored for 15 years.
>>Now I want to use it. But I think the high volt(500 V) capacitors
>>need to be refreshed (right word?). (To slowly increase the voltage.)
>
>
> ----------
>
> This isn't quite what you asked, but I'd recommend just replacing them.
> Electrolytics are notorious for drying out and 15 years is really
> pushing it. I'd just replace them with some new ones.

Wow, I have lots of 15 y.o.+ electrolytics that are still going strong.

I didn't have a variac, so here's what I did to rejuvenate a SB-200 I restored a while back:

I made a fixture of a standard light bulb socket.

This socket was wired in series with the amplifier power cord.

Starting out with a 10 watt light bulb, I plugged it in, and turned it on. I left it running in this setup for an hour.

Next I replaced the 10 watt bulb with a 25 watt bulb. Repeat the burn in process.

I worked my way up the wattage scale until I reached 100 watts. At that point I put the tubes back in, turned it on and it worked just fine.

- Mike KB3EIA -

2950. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 14:46:49 UTC
From: "Watson A.Name \"Watt Sun - the Dark Remover\"" <NOSPAM@dslextreme.com>
Message-ID: <c5jiq0$6n8fa$1@hades.csu.net>
Source record: 26937
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Joel Kolstad wrote:
> Watson A.Name - "Watt Sun, the Dark Remover" <NOSPAM@dslextreme.com> wrote:
>
>>My attitude is that rather than try to do this (and in the process lose
>>reliability), it's better to go supersize on the cells, add more area
>>and overall capacity to get you thru the cloudy days, and have a higher
>>capacity overall.
>
>
> The argument usually goes that getting, say, 10-20% more power from a better
> charge controller (one of these so-called 'maximum power point controllers')
> can be cheaper (in additional expenditures) than getting 10-20% larger
> panels. It's sometimes difficult to show, though, particularly on small
> systems -- but MPPT controllers have been getting cheaper for awhile, now,
> and I expect that eventually all but the cheapest/smallest will have this
> functionality.

Last nite (Tue, 9pm) I watched a prog on PBS that was about getting
people to use more renewable resources, hosted by Cameron Diaz (hot
blonde movie star), who drives a Prius. They talked about getting every
home to have a solar panel, and selling power back to the utility co.
She also said that if everyone in the U.S. drove a hybrid vehicle, we
could completely eliminate oil shipments from the middle east. Well,
I'd go out and buy a Prius, but one of the guys at work has had his new
Prius since xmas and it took him 4 months or so to get it after
submitting a $500 earnest check to several dealerships to get on their
waiting list. They say they're trying to make more of them, but I think
they really don't want the prices to fall, since they're expensive to
make. In any case I'd like more solar power, but the initial outlay is
not cheap.

> ---Joel Kolstad

2951. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 14:54:34 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <f4jq70hcacr3iv3k06v0vnfl3vpmqkblrl@4ax.com>
Source record: 26938
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Wed, 14 Apr 2004 00:36:17 GMT, "Harold E. Johnson"
<W4ZCB@mchsi.com> wrote:

>An 8 MHz filter doesn't have to be physically large Paul,

Hi Q coils in that frequency range in compact sizes... they don't seem
to go together. :-(

>and efficiency
>drops pretty fast (Think like a rock) as the multiplication factor goes up.
>Have you ever actually defined what it is you're trying to do? Some control
>thing in your 70 MHz band? Or real power for some application? Hard to hit a
>moving target. Or is that the idea?

Yeah, moving target's good. Keep the discussion generalised and it
might help others as well. I'm not sure where the 70Mhz figure comes
from, but it's a good enough guess by whoever made it. However, the
final desired frequency in my particular case is in the region of
40Mhz which will be achieved by mixing down with the output from
another oscillator and filtering.

2952. Re: Help Finding Latching Relay

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 15:28:08 UTC
From: Gary Schafer <gaschafer@comcast.net>
Message-ID: <d1mq7017lhqd19rqdq74lhjoqefdm3p4i0@4ax.com>
Source record: 26939

Randy,

The relays that I described in my other post came out of a house that did exactly what you describe. The relays were made for just that purpose. Most of the light circuits were switched with these relays and low voltage wires were run to various places to control them. They had 2 push buttons for each relay. One for on and one for off.

Thinking about it, that is better than using only one button. With one button you are never sure if you are turning the circuit on or off. Especially if the light happens to be remote from where you are.

Each switch location had a 3 wire cable run to it. The 24 vac transformer was mounted where all the relays were mounted. Next to the breaker panel. I think there were around 40 relays that I got out of there. It was a big house.

With this setup you can control a circuit from as many places as you want to without getting into complicated wiring.

Not trying to sell you relays, just telling how it was done.

73
Gary K4FMX

On Tue, 13 Apr 2004 22:47:38 -0500, randy wrote:

>This type of relay would work depending on the coil voltage. However
>I would guess that voltage is also 120 volt.
>
>What I am trying to do is have the ability to switch 4-5 different
>lights (150-1000 watt) from several locations within the same building
>without all the hassle of 2 and 3-way switches.
>
>My plan is to have a relay bank that these lights would source from
>(total wire run of 60-75 feet) then have small low voltage/current
>pushbutton switches activate the relays. 4-5 small pushbuttons could
>control any light in the building from that location.
>
>I have thought about X10 but have also read more bad than good about
>the wierd things they do or don't do.
>
>Randy
>
>>>> I'm looking for a source of new latching relays.
>>>>
>>>> Coil needs to be 12 to 24 volt and contacts of 10 amps at 120 volts

>>>> AC.
>>
>>>The X10 Appliance modules contain a latching relay. At about $10 a piece
>>>this might be your best choice.
>>
>>The last time I looked at one of these, what I found wasn't a latching
>>relay in the usual sense. It's a solenoid which drives a rotating
>>two-position switching thingie. There isn't a separate "set" and
>>"reset" coil.

2953. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 15:35:43 UTC
From: Anthony Matonak <res04ijs@verizon.net>
Message-ID: <407D5A4F.1080806@verizon.net>
Source record: 26940
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Watson A.Name \"Watt Sun - the Dark Remover\" wrote:
> Last nite (Tue, 9pm) I watched a prog on PBS that was about getting
> people to use more renewable resources, hosted by Cameron Diaz (hot
> blonde movie star), who drives a Prius. They talked about getting every
> home to have a solar panel, and selling power back to the utility co.
> She also said that if everyone in the U.S. drove a hybrid vehicle, we
> could completely eliminate oil shipments from the middle east. Well,
> I'd go out and buy a Prius, but one of the guys at work has had his new
> Prius since xmas and it took him 4 months or so to get it after
> submitting a $500 earnest check to several dealerships to get on their
> waiting list. They say they're trying to make more of them, but I think
> they really don't want the prices to fall, since they're expensive to
> make. In any case I'd like more solar power, but the initial outlay is
> _not_ cheap.

While I'm all for using more renewable resources, and especially ones that are environmentally friendly, it doesn't make sense to cause yourself financial pain doing so. It makes sense to buy the must fuel efficient vehicle that fits your needs but not to overspend simply because it's a little better on the gas mileage.

That said, there are many things you can do that are quite affordable. First, you could conserve energy. Replace old appliances with more efficient ones, insulate your home better, weather-strip, storm windows, compact fluorescent lights, activate the power saving on your computer, use xeriscaping and all that lot. If you are a typical homeowners then conservation alone could be as effective as putting up a $30,000 solar panel setup.

Then you could buy more affordable renewable energy equipment such as solar water heaters, air heaters, ovens, stoves and the like. You could also change your diet to include less animal products. Raising animals to produce food takes many times more resources (which often means energy) as plants alone require.

There are also many alternatives to a Prius. One option would be to get a diesel powered car and use biodiesel or get it converted to run on straight vegetable oil. Another option is to buy an electric car. Currently the only ones available are "city cars" which turn out to be glorified golf carts but they are suitable for very local driving and can sometimes work as a second car. Some folks have even had great success with bicycles of various flavors. If you simply must have a hybrid vehicle then a much wider selection of them should be available within the next 10 to 15 years.

Anthony

2954. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 16:45:30 UTC
From: "Duane C. Johnson" <redrok@redrok.com>
Message-ID: <407D6AAA.D328432@redrok.com>
Source record: 26941
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Hi John;

John Popelish wrote:
> mike wrote:

> > Then I turned the panel ever so slightly away from the sun.
> > I was amazed at how dramatically things changed with just
> > a small angle. Looks like I'd gain WAY more watt-hours/day
> > by tracking the sun than by anything else I could think of.

Bingo, that is my opinion also.

> Yep. It doesn't take much of an angle from perpendicular
> for a silicon cell to act as a pretty fair mirror.

Basically the power output will be:
COS(angle) * Watts
Watts is the output of the panel when aimed normal to the sun.
Angle is how far off of normal the panel is oriented.
0deg = 100%
8deg = 99%
11deg = 98%
18deg = 95%
30deg = 87%
45deg = 70%

However somewhere around 45deg or a bit more the cover glass
begins to act more like a mirror and the panel outputs much
less than allowed by the COS rule. Some panels can improve
on this with anti reflective coatings. These coatings may
not have a long lifetime though.

Now if you use a solar tracker the panel can be oriented
close to the ideal angle throughout the day. This significantly
improves the energy captured per day.

As an example:
At summer solstice where I live, 45deg latitude, the sun
subtends an angle of 270deg. That's an 18 hour day.

6 hours of the day the sun is actually behind a fixed panel.

Another 6 hours or so the sun is at an angle where the output
is low or negligible.

Only during 6 hours or so will the panel output significant
power. And the average power output is less than optimal.

A solar tracker in my location can theoretically harvest
3 times as much energy as a fixed panel.
OK, practically, due to weather and thick atmosphere the
output is 2.4 times according to the NREL data.

Other times of the year the improvement is not as much.
But even at winter solstice the improvement in output
is 1.4 times the fixed panel.

Solar trackers, at least the electronic bits, are really
low in cost, $35 for mine. The total cost including the
tracking mount is much cheaper than the cost of adding more
PV panels for the same outputs.

There are places where the tracking costs aren't cost effective.
The california sea coast and in maybe 50 miles or so is an
example. The local weather has lots of fogs which lower the
solar insolation except when the sun is high in the sky.

One must study the NREL data to see how cost effective
your location may be.

> --
> John Popelish

Duane

--
Home of the $35 Solar Tracker Receiver
http://www.redrok.com/electron.htm#led3X [*]
Powered by \ \ \ //|
Thermonuclear Solar Energy from the Sun / |
Energy (the SUN) \ \ \ / / |
Red Rock Energy \ \ / / |
Duane C. Johnson Designer \ \ / \ / |
1825 Florence St Heliostat,Control,& Mounts |
White Bear Lake, Minnesota === \ / \ |
USA 55110-3364 === \ |
(651)426-4766 use Courier New Font \ |
redrok@redrok.com (my email: address) \ |
http://www.redrok.com (Web site) ===

2955. Re: Digital cable boxes as parts sources?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 16:56:45 UTC
From: Batman <kc8gpd@no.spam.hotmail.com>
Message-ID: <h3efc.6794$l75.1142@newsread2.news.atl.earthlink.net>
Source record: 26942

where do you find used digital boxes for $10ea. You have peaked my interest.

--
Rev. Robert P. Chrysafis
Universal Life Ministries [ULC]

88.3 FM Stereo 1000 AM Stereo
100,000 MicroWatts of Community Power!!

2956. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 18:54:44 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404141054.70f1fa89@posting.google.com>
Source record: 26943
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Tony <tony_roe@tpg.com.au> wrote in message
news:<9fro70p8ej0qmsp1itv3660lka9lt4v9no@4ax.com>...
> This is a good learning experience for lots of us out here. Any chance of
> scanning the printed material and posting , say on a.b.s.e?

Nope, sorry. I don't have access to the binaries groups, and in
addition, it's copyrighted material. I'm willing to make a very
limited number of copies, but not to post it.

The articles I have are old HP Journal articles, available in
"Inventions of Opportunity," copyright Hewlett-Packard Company, 1983,
ISBN 0-9612030-0-5. You may be able to find that in your library.
The articles in that book were chosen to represent seminal ideas and
products that opened new horizons, so the SRD items are as much for
historical interest as for technical info.

You'll find a little more modern technical info in HP AN-1054,
available at http://rf.rfglobalnet.com/library/ApplicationNotes/files/1/An1054.pdf.

Cheers,
Tom

2957. ** FLEA at MIT ** Sunday April 18th Cambridge MA

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 19:02:19 UTC
From: w1gsl@mit.edu
Message-ID: <407d8abb$0$566$b45e6eb0@senator-bedfellow.mit.edu>
Source record: 26944
Cross-posted to: rec.radio.swap,rec.radio.amateur.misc,rec.radio.info,sci.electronics.misc,ne.forsale,ne.general,rec.radio.amateur.homebrew,rec.radio.amateur.boatanchors

This coming Sunday....

+++ Now even more Buyers Parking !!!
Thanks to TKT we have use of their new parking lot
across Albany St from the SWAPFEST !!!

!! ** More Buyers PARKING is available ** for details see
http://web.mit.edu/w1gsl/Public/flyer

*** !!!! In our Traditional GARAGE and the adjacent lot !!!! ****
so come rain or shine or super heat the Flea is on !!!

********* $1 buyers discount with hardcopy of this notice ********

COMPUTERS - ELECTRONICS - HAM RADIO - COMPUTERS - ELECTRONICS - HAM RADIO

FLEA all SUMMER at MIT
Sunday April 18th 2004
9AM-2PM

Come to the city for a great flea - plenty of free parking.

MIT's electronics and ham radio flea will take
place on the third Sunday of each month this summer,
April thru October.

There is tailgate space for over 600 sellers and
free, off-street parking for >2000 cars!

Buyers admission is $5 (you get $1 off if
you're lucky enough to have a copy of our ad)
and sellers spaces are $20 for the first and
$15 for each additional at the gate.

The flea will be held at the corner of Albany and
Main streets in Cambridge; right in the Kendall
Square area from 9AM to 2PM, with sellers set-up
time starting at 7AM.

*** Attention Sellers ***
Prepaid vendors.. Season Pass or monthly,
will be admitted FIRST.
Separate lines will form prior to gate opening
for prepaid and nonprepaid vendors

!! RAIN or SHINE !! Have no fear of rain, a covered
well illuminated tailgate area is available for all
sellers (6'8" clearance).

Talk-in: 145.23- (PL 88.5) W1BOS/R and
W1XM/R-449.725/444.725 (PL 114.8/2A).

Sponsors: MIT Electronics Research Society
MIT UHF Repeater Association (W1XM)
MIT Radio Society (W1MX)
Harvard Wireless Club (W1AF)

For more info / advanced reservations 617 253 3776

********** $1 buyers discount with hard copy of this notice ************

<<<<<<<<<<<<<<<<<<<<<<< cut here >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>

Mail the coupon below by the 5th of the month to be a Prepaid Vendor.

FLEA at MIT 2003 Rates

SELLERS

This year each vendor must have a Cambridge Vendor License.
We will do all the paperwork to get the one day Cambridge licenses.
To keep the spaces affordable we are discounting your first space.
To use your spaces the named vendor MUST be present.
Rates include one admission per space.

Season Pass $99 First space includes $10 Cambridge Vendor License
$70 Additional spaces
Good for all seven meets this year.
Must be received by April 18th.

Advance $17 First space - includes $10 Cambridge Vendor License
$12 Additional Spaces
Must be received by the 5th of the month.

Gate Admission $20 First Space - includes $10 Cambridge Vendor License
$15 Additional Spaces
Admission is after the prepaid vendors

Early Bird Buyer -Admission after the prepaid vendor line is admitted. ~ 7:15AM
** You may not sell. **
$15 per person at the gate.

****************************** cut here ******************************

FLEA at MIT 2004 Advance Space Application

____April ____May ____June ____ July ____Aug ___Sept ____Oct
@ $17 for the first each month + $12 each additional
____ Season Pass $99 first space $70 each additional

Name _____ Call _____ $ Included_____

Address _____ Phone _____ Make Check to
The MIT Radio Society
City _____ State _____ Zip _____ PO Box 397082
Cambridge MA 02139
E-mail _____

****
Steve Finberg W1GSL w1gsl@mit.edu
PO Box 82 MIT Br Cambridge MA 02139-7082 617 258 3754
****

2958. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 19:25:40 UTC
From: Joel Kolstad <JKolstad71HatesSpam@Yahoo.Com>
Message-ID: <c5k31gskn1@news.oregonstate.edu>
Source record: 26945
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Watson A.Name "Watt Sun - the Dark Remover" <NOSPAM@dslextreme.com> wrote:
> Last nite (Tue, 9pm) I watched a prog on PBS that was about getting
> people to use more renewable resources, hosted by Cameron Diaz (hot
> blonde movie star), who drives a Prius.

Nice idea, although in her particular case I'd be willing to bet that she could be driving a Hummer and it'd be a small drop in the amount of energy she uses for transportation! (Due to all those jet rides...)

> They talked about getting every
> home to have a solar panel, and selling power back to the utility co.

I'm all for net metering (power company has to pay you the same for a kilowatt-hour as what you would have had to pay to buy it from them), and happily it is becoming more common in the U.S. Panels and controllers are continuing to get cheaper as well. Additional government support could really help improve how many people would seriously consider sticking photovolataic panels on their roofs -- I imagine right now it's well under 1% of the population.

> She also said that if everyone in the U.S. drove a hybrid vehicle, we
> could completely eliminate oil shipments from the middle east.

We could do that as-is... there's plenty of oil in Alaska, after all, we've just made the choice that protecting the environment up there is more important right now than not importing oil from the middle east. (This is a very involved topic -- if anything, the choice of where we get our oil from is far more political than technical in nature anyway.)

---Joel Kolstad

2959. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 19:31:08 UTC
From: Joel Kolstad <JKolstad71HatesSpam@Yahoo.Com>
Message-ID: <c5k3bmsqo1@news.oregonstate.edu>
Source record: 26866
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Anthony Matonak <res04ijs@verizon.net> wrote:
> That said, there are many things you can do that are quite affordable.

Yes, such as building better-insulated dwellings. I find it appaling that here in Oregon where I live, the building codes don't require some apartment complexes to have any insulation whatsoever in their attics. These places additionally inevitably end up with electric heat, so the end result is that a small savings to the guy who builds the apartment complex ends up being a huge cost in additional energy to the renter as well as the corresponding impact on the environment.

> There are also many alternatives to a Prius.

Although I understand the reasoning behind it, it's quite ironic how many people out there who live within an arguably quite reasonable bikable distance to their place of employment instead drive to work and then drive to a fitness club afterwards to work out. :-) Although I am all for people using their cars as much as they want so long as fuel taxes or whatever more or less make up for the impact to the environment, but unfortunately it's hard to translate that impact into monetary terms.

---Joel

2960. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 19:55:38 UTC
From: "Watson A.Name \"Watt Sun - the Dark Remover\"" <NOSPAM@dslextreme.com>
Message-ID: <c5k4t1$6n4t7$1@hades.csu.net>
Source record: 26946
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Anthony Matonak wrote:
> Watson A.Name \"Watt Sun - the Dark Remover\" wrote:
>
>> Last nite (Tue, 9pm) I watched a prog on PBS that was about getting
>> people to use more renewable resources, hosted by Cameron Diaz (hot
>> blonde movie star), who drives a Prius. They talked about getting
>> every home to have a solar panel, and selling power back to the
>> utility co. She also said that if everyone in the U.S. drove a hybrid
>> vehicle, we could completely eliminate oil shipments from the middle
>> east. Well, I'd go out and buy a Prius, but one of the guys at work
>> has had his new Prius since xmas and it took him 4 months or so to get
>> it after submitting a $500 earnest check to several dealerships to get
>> on their waiting list. They say they're trying to make more of them,
>> but I think they really don't want the prices to fall, since they're
>> expensive to make. In any case I'd like more solar power, but the
>> initial outlay is _not_ cheap.

> While I'm all for using more renewable resources, and especially
> ones that are environmentally friendly, it doesn't make sense to
> cause yourself financial pain doing so. It makes sense to buy the
> must fuel efficient vehicle that fits your needs but not to overspend
> simply because it's a little better on the gas mileage.

It's not a "little" better, it more than double - 50+ MPG compared to 25!

[snip]
> You could
> also change your diet to include less animal products. Raising animals
> to produce food takes many times more resources (which often means
> energy) as plants alone require.

Right, but it's **you** (see above) that said to not cause yourself
financial pain. Well, I _try_ to do my part to eat little or no beef,
instead eat chicken. But I _have_ to pay a premium to do so, even tho
it's cheaper to bring chicken to the table, just because of supply and
demand issue. People consume less beef so the price drops below
chicken, not because it's cheaper. So I and everyone else hasto pay
extra for, helping save resources. Just what you said _didn't_make_ sense_.

> There are also many alternatives to a Prius. One option would be to
> get a diesel powered car and use biodiesel or get it converted to
> run on straight vegetable oil. Another option is to buy an electric
> car.

Again, you're asking for people to make a financial sacrifice when buying an electric vehicle. The last I checked, it cost $46,000 to purchase a RAV4 EV, with a good chunk of that going to the installation of an electric charger in the owner's garage. According to you, that financial pain 'doesn't make sense'.

> If you simply
> must have a hybrid vehicle then a much wider selection of them should
> be available within the next 10 to 15 years.

In the next 10 to 15 years, the situation may be much, much worse. The big worry in the near term seems to be China, with 1/5th of the world's population, which may have a growing economy that will gobble up an ever growing part of the world's non-renewable energy resources. In 10-15 years, it may be too late! The price of fuel in europe is already over $5 a gallon, and we Americans are currently bitching about having to pay over $2! Well, wait until it goes up to $3, or more! All those SUV owners in the U.S. will be taking tbe bus to work. Time will tell!

> Anthony

2961. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 21:09:29 UTC
From: "Charles W. Johnson Jr." <qrus19@oneimage.com>
Message-ID: <dMhfc.9580$k05.7475@newsread2.news.pas.earthlink.net>
Source record: 26847
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Watson A.Name "Watt Sun - the Dark Remover"" <NOSPAM@dslextreme.com> wrote
in message news:c5k4t1$6n4t7$1@hades.csu.net...
> Anthony Matonak wrote:
> > Watson A.Name \"Watt Sun - the Dark Remover\" wrote:
> >
> >> Last nite (Tue, 9pm) I watched a prog on PBS that was about getting
> >> people to use more renewable resources, hosted by Cameron Diaz (hot
> >> blonde movie star), who drives a Prius. They talked about getting
> >> every home to have a solar panel, and selling power back to the
> >> utility co. She also said that if everyone in the U.S. drove a hybrid
> >> vehicle, we could completely eliminate oil shipments from the middle
> >> east. Well, I'd go out and buy a Prius, but one of the guys at work
> >> has had his new Prius since xmas and it took him 4 months or so to get
> >> it after submitting a $500 earnest check to several dealerships to get
> >> on their waiting list. They say they're trying to make more of them,
> >> but I think they really don't want the prices to fall, since they're
> >> expensive to make. In any case I'd like more solar power, but the
> >> initial outlay is _not_ cheap.
>
>
> > While I'm all for using more renewable resources, and especially
> > ones that are environmentally friendly, it doesn't make sense to
> > cause yourself financial pain doing so. It makes sense to buy the
> > must fuel efficient vehicle that fits your needs but not to overspend
> > simply because it's a little better on the gas mileage.
>
> It's not a "little" better, it more than double - 50+ MPG compared to 25!
>
> [snip]
> > You could
> > also change your diet to include less animal products. Raising animals
> > to produce food takes many times more resources (which often means
> > energy) as plants alone require.
>
> Right, but it's **you** (see above) that said to not cause yourself
> financial pain. Well, I _try_ to do my part to eat little or no beef,
> instead eat chicken. But I _have_ to pay a premium to do so, even tho
> it's cheaper to bring chicken to the table, just because of supply and
> demand issue. People consume less beef so the price drops below
> chicken, not because it's cheaper. So I and everyone else hasto pay
> extra for, helping save resources. Just what you said _didn't_make_
sense_.
>

> > There are also many alternatives to a Prius. One option would be to
> > get a diesel powered car and use biodiesel or get it converted to
> > run on straight vegetable oil. Another option is to buy an electric
> > car.
>
> Again, you're asking for people to make a financial sacrifice when
> buying an electric vehicle. The last I checked, it cost $46,000 to
> purchase a RAV4 EV, with a good chunk of that going to the installation
> of an electric charger in the owner's garage. According to you, that
> financial pain 'doesn't make sense'.
>
> > If you simply
> > must have a hybrid vehicle then a much wider selection of them should
> > be available within the next 10 to 15 years.
>
> In the next 10 to 15 years, the situation may be much, much worse. The
> big worry in the near term seems to be China, with 1/5th of the world's
> population, which may have a growing economy that will gobble up an ever
> growing part of the world's non-renewable energy resources. In 10-15
> years, it may be too late! The price of fuel in europe is already over
> $5 a gallon, and we Americans are currently bitching about having to pay
> over $2! Well, wait until it goes up to $3, or more! All those SUV
> owners in the U.S. will be taking tbe bus to work. Time will tell!
>
> > Anthony

Surprisingly enough some SUV owners actually need the SUV at the time of purchase, I personally drove through snow 70cm deep on a regular basis prior to my recent job change. Just because the people in southern California don't need it doesn't mean no one does.

Charles

2962. LCF Software Wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 21:28:13 UTC
From: haf47@juno.com
Message-ID: <f03bf94f.0404141328.70b035c0@posting.google.com>
Source record: 26848

Hello and thanks for taking the time to read this.

I am seeking a piece of software I once used that calculates LCF in various combinations This software was DOS and is freeware.

For the life of me I cannot remember that name of it.

Does anyone know of freeware that does this, and where it may be found?

Thanks es 73 de WA2AFD

2963. Need help to meas noise v of a JFET

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 21:33:14 UTC
From: sdeyoreo@hotmail.com
Message-ID: <7gbr70pn5l5o55a5uca614oa376v23aju3@4ax.com>
Source record: 26849

I need to measure the "equivalent noise voltage", in units of nV/square root(hz) of a JFETs drain-source at a given Vds & Ids and F=10 hz. How do I do that? What's throwing me is the F=10 Hz. What do I do with that? I thought to take the measurement, I would bias the FET to the required Vds and Ids and measure the voltage across the drain - source with an RMS meter. Then divide that by the sqrt of the bandwidth of the RMS meter. I've Googled, but didn't find anything to straighten me out. Any help?

2964. FA MORSE KEY UNIQUE Twin Paddle COLLECTORS

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 21:34:56 UTC
From: Ron <bofars@ntlworld.com>
Message-ID: <A8ifc.12$8a4.2@newsfe1-gui.server.ntli.net>
Source record: 26850
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,uk.radio.amateur

http://cgi.ebay.co.uk/ws/eBayISAPI.dll?ViewItem&item=3091175666

FA MORSE KEY COLLECTORS Unique Twin Paddle morse key made by an Instrument maker.

We will ship this worldwide.

2965. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 21:58:19 UTC
From: Anthony Matonak <res04ijs@verizon.net>
Message-ID: <407DB3FB.8050509@verizon.net>
Source record: 26851
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Watson A.Name \"Watt Sun - the Dark Remover\" wrote:
> Anthony Matonak wrote:
>> While I'm all for using more renewable resources, and especially
>> ones that are environmentally friendly, it doesn't make sense to
>> cause yourself financial pain doing so. It makes sense to buy the
>> must fuel efficient vehicle that fits your needs but not to overspend
>> simply because it's a little better on the gas mileage.
>
> It's not a "little" better, it more than double - 50+ MPG compared to 25!

The definition of "little" can vary. :)
Would you consider 5 MPG a "little" ?

http://www.fueleconomy.gov/feg/bestworst.shtml
Shows the Prius at 60/51 mpg with a couple of VW's in the 38/46 range.
This is only 1.6/1.1 times and not double, especially when considering
highway driving instead of city driving. This means you can purchase
a vehicle with good fuel efficiency without buying a Prius or even
a hybrid.

>> You could
>> also change your diet to include less animal products. Raising animals
>> to produce food takes many times more resources (which often means
>> energy) as plants alone require.
>
> Right, but it's **you** (see above) that said to not cause yourself
> financial pain. Well, I _try_ to do my part to eat little or no beef,
> instead eat chicken. But I _have_ to pay a premium to do so, even tho
> it's cheaper to bring chicken to the table, just because of supply and
> demand issue. People consume less beef so the price drops below
> chicken, not because it's cheaper. So I and everyone else hasto pay
> extra for, helping save resources. Just what you said _didn't_make_
> sense_.

You could chose to eliminate chicken as well as beef, eggs and dairy.
I'm no expert in either nutrition or food prices but I think you could
quite affordably manage a diet that does not include meat of any kind.
Perhaps you should look at a group such as misc.consumers.frugal-living
and ask for recipes. You could also look up many of the resources on
the web for vegetarians and vegans.

>> There are also many alternatives to a Prius. One option would be to
>> get a diesel powered car and use biodiesel or get it converted to
>> run on straight vegetable oil. Another option is to buy an electric
>> car.

>
> Again, you're asking for people to make a financial sacrifice when
> buying an electric vehicle. The last I checked, it cost $46,000 to
> purchase a RAV4 EV, with a good chunk of that going to the installation
> of an electric charger in the owner's garage. According to you, that
> financial pain 'doesn't make sense'.

I agree, a RAV4 EV might not make sense on a financial basis. The last I heard they don't make them anymore. Any you do find are collectors items and will be priced accordingly. In fact, it might actually be rather difficult to find a brand new EV, even the golf cart style like the Chrysler GEM, as they keep getting discontinued. That said, a small neighborhood electric vehicle only costs in the neighborhood of $5,000 to $6,000 when they can be found.

> > If you simply
>> must have a hybrid vehicle then a much wider selection of them should
>> be available within the next 10 to 15 years.
>
> In the next 10 to 15 years, the situation may be much, much worse. The
> big worry in the near term seems to be China, with 1/5th of the world's
> population, which may have a growing economy that will gobble up an ever
> growing part of the world's non-renewable energy resources. In 10-15
> years, it may be too late! The price of fuel in europe is already over
> $5 a gallon, and we Americans are currently bitching about having to pay
> over $2! Well, wait until it goes up to $3, or more! All those SUV
> owners in the U.S. will be taking tbe bus to work. Time will tell!

There are many worries in the world and it's always too late for some things. Time will certainly tell but there ARE some things that folks can do now if they like and without putting themselves in debt for the rest of their lives.

Anthony

2966. Re: Refresh old capacitors. How to ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 23:09:40 UTC
From: Allan Butler <ka0ies@hotmail.com>
Message-ID: <Uwjfc.40276$rg5.68332@attbi_s52>
Source record: 26852

I worked at a broadcast radio station that had been in service about twenty years and we were starting to get random failures in the capacitors in timing circuits. These capacitors had been in service for the full time that the station was on the air and the station was a 24/7 operation.

I would vote on replacing the capacitors and still doing the gradual increase of the input voltage. Normally it doesn't really help to do that but there have been rare cases where a new capacitor surprises the new owner with a loud bang.

2967. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 23:24:40 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <YKjfc.38031$_K3.164147@attbi_s53>
Source record: 26853
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

> You'll find a little more modern technical info in HP AN-1054,
> available at
http://rf.rfglobalnet.com/library/ApplicationNotes/files/1/An1054.pdf.
>
T'aint fair Tom! That URL is FB and I have it added to my library, but when I tried to trick it and deleted the AN-1054.PDF, and retyped AN-983.PDF, it can't find that one. Suppose I could write a little program to check AN-1 and step 1 then find out what if anything I had. Is there some secret code as to how this all works?

Regards

W4ZCB

(I suppoe it wouldn't be a secret anymore if you told me.)

2968. QRP Homebrew

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 23:25:41 UTC
From: Brian <brianNADA@NOiquestSPAM.net>
Message-ID: <VLjfc.10395$A_4.5982@newsread1.news.pas.earthlink.net>
Source record: 26854

The May 2004 Issue of World Radio just arrived...

I don't get this one very often, must be the annual free issue.

Very neat magazette!

Good article on portable dipoles made from mobile whips,
an article on YL's at Dayton (hahah) and son of a gun....

Flying Pig Dan Shepherd has an article about identifying
all those little capacitors!! N8IE is such a authoring
machine! (See Page 44)

Richard Fisher KI6SN has a great QRP article and what
looks like a really cool ugly built 40m or 30m transmitter.
It's a whopping 1 watt out, you pick the crystal!

Kurt Sterba has your basic "What is an Antenna"
article. Good reading!

Well that's it.

72 de KB9BVN/QRP

--
==========
Agnus dei, qui tollis peccata mundi, dona nobis Pacem.
==========
KB9BVN/QRP QRP-L 1540 QRP-ARCI 10223
39.558 N 86.095 W Johnson Co., Indiana
GRID: EM69WN - Elecraft K1 - Attic Dipole - 5w
Member of the ARRL - SOC #400
FISTS 5695 CC 764 FPQRP #-57
==========

2969. Re: Help Finding Latching Relay

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-14 23:40:47 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <5i5p70l9823jq1t76v57afbqqkqol68p99@4ax.com>
Source record: 26855

On Mon, 12 Apr 2004 22:32:04 -0500 randy wrote:

>I'm looking for a source of new latching relays.
>
>Coil needs to be 12 to 24 volt and contacts of 10 amps at 120 volts
>AC.
>
>The catch is I don't want any dual coil type relays. I have an
>application in which I want a contact closure on the coil to turn the
>relay on and another closure will turn it off again.
>
> I would even be receptive to a solid-state module that would give me
>the pulse on / pluse off action that I could use to control a relay.

A lot of automobile headlight relays switch states with a pulse to a
single coil. They're 12V, too.

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA

2970. Re: Need help to meas noise v of a JFET

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 00:20:22 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <azkfc.7817$Sm6.5884@newssvr24.news.prodigy.com>
Source record: 26856

could it be a typo?
maybe 10KHZ or 10MHz?
73
Hank WD5JFR
<sdeyoreo@hotmail.com> wrote in message
news:7gbr70pn5l5o55a5uca614oa376v23aju3@4ax.com...
> I need to measure the "equivalent noise voltage", in units of
> nV/square root(hz) of a JFETs drain-source at a given Vds & Ids and
> F=10 hz. How do I do that? What's throwing me is the F=10 Hz. What do
> I do with that? I thought to take the measurement, I would bias the
> FET to the required Vds and Ids and measure the voltage across the
> drain - source with an RMS meter. Then divide that by the sqrt of the
> bandwidth of the RMS meter. I've Googled, but didn't find anything to
> straighten me out. Any help?

2971. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 01:13:43 UTC
From: mike <spamme0@juno.com>
Message-ID: <407DE1C7.9090102@juno.com>
Source record: 26857
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Anthony Matonak wrote:
> Watson A.Name \"Watt Sun - the Dark Remover\" wrote:
>
>> Last nite (Tue, 9pm) I watched a prog on PBS that was about getting
>> people to use more renewable resources, hosted by Cameron Diaz (hot
>> blonde movie star), who drives a Prius. They talked about getting
>> every home to have a solar panel, and selling power back to the
>> utility co. She also said that if everyone in the U.S. drove a hybrid
>> vehicle, we could completely eliminate oil shipments from the middle
>> east. Well, I'd go out and buy a Prius, but one of the guys at work
>> has had his new Prius since xmas and it took him 4 months or so to get
>> it after submitting a $500 earnest check to several dealerships to get
>> on their waiting list. They say they're trying to make more of them,
>> but I think they really don't want the prices to fall, since they're
>> expensive to make. In any case I'd like more solar power, but the
>> initial outlay is _not_ cheap.
>
>
> While I'm all for using more renewable resources, and especially
> ones that are environmentally friendly,

I once read that it takes more energy to make, deliver, install a solar
panel than the total energy you get out of it over it's 20 year
lifetime. If that's true, (small scale PV) solar makes little sense
from an environmental standpoint.

mike

it doesn't make sense to
> cause yourself financial pain doing so. It makes sense to buy the
> must fuel efficient vehicle that fits your needs but not to overspend
> simply because it's a little better on the gas mileage.
>
> That said, there are many things you can do that are quite affordable.
> First, you could conserve energy. Replace old appliances with more
> efficient ones, insulate your home better, weather-strip, storm windows,
> compact fluorescent lights, activate the power saving on your computer,
> use xeriscaping and all that lot. If you are a typical homeowners then
> conservation alone could be as effective as putting up a $30,000 solar
> panel setup.
>
> Then you could buy more affordable renewable energy equipment such as
> solar water heaters, air heaters, ovens, stoves and the like. You could
> also change your diet to include less animal products. Raising animals

> to produce food takes many times more resources (which often means
> energy) as plants alone require.
>
> There are also many alternatives to a Prius. One option would be to
> get a diesel powered car and use biodiesel or get it converted to
> run on straight vegetable oil. Another option is to buy an electric
> car. Currently the only ones available are "city cars" which turn
> out to be glorified golf carts but they are suitable for very local
> driving and can sometimes work as a second car. Some folks have even
> had great success with bicycles of various flavors. If you simply
> must have a hybrid vehicle then a much wider selection of them should
> be available within the next 10 to 15 years.
>
> Anthony
>

--
Return address is VALID.
Bunch of stuff For Sale and Wanted at the link below.
Toshiba & Compaq LiIon Batteries, Test Equipment
Honda CB-125S $800 in PDX
Yaesu FTV901R Transverter, 30pS pulser
Tektronix Concept Books, spot welding head...
http://www.geocities.com/SiliconValley/Monitor/4710/

2972. Re: Digital cable boxes as parts sources?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 01:38:37 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <xIlfc.31717$i74.685938@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26858

"Batman" <kc8gpd@no.spam.hotmail.com> wrote in message
news:h3efc.6794$l75.1142@newsread2.news.atl.earthlink.net...
> where do you find used digital boxes for $10ea. You have peaked my
interest.

eBay, where else? :>

Rev. "PM", ULC

2973. Re: Need help to meas noise v of a JFET

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 01:43:33 UTC
From: sdeyoreo@hotmail.com
Message-ID: <o2qr70htncvhaoefajto82jfd0ibporq2v@4ax.com>
Source record: 26859

I'll have to check it tommorrow. But it reminds me of a phase noise measurement. Maybe i'ts an AM noise on a spectrum analyzer?
On Thu, 15 Apr 2004 00:20:22 GMT, "Henry Kolesnik" <kolesnik@sbcglobal.net> wrote:

>could it be a typo?
>maybe 10KHZ or 10MHz?
>73
>Hank WD5JFR
><sdeyoreo@hotmail.com> wrote in message
>news:7gbr70pn5l5o55a5uca614oa376v23aju3@4ax.com...
>> I need to measure the "equivalent noise voltage", in units of
>> nV/square root(hz) of a JFETs drain-source at a given Vds & Ids and
>> F=10 hz. How do I do that? What's throwing me is the F=10 Hz. What do
>> I do with that? I thought to take the measurement, I would bias the
>> FET to the required Vds and Ids and measure the voltage across the
>> drain - source with an RMS meter. Then divide that by the sqrt of the
>> bandwidth of the RMS meter. I've Googled, but didn't find anything to
>> straighten me out. Any help?
>

2974. questions about 433MHZ modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 01:46:39 UTC
From: Joe <nuisancewildlife@nospamearthlink.net>
Message-ID: <3QIfc.10044$k05.5854@newsread2.news.pas.earthlink.net>
Source record: 26860

Hello to the group,

I just found this forum and hopefully, I can learn some more about homebrewing stuff. I have been a hobbyist in electronics for a little over a year now and recently received my element 2 tech license. Last year I built an infrared transmitter and receiver pair to trigger my camera remotely (about a 50 foot range). Since then, I have wanted to do the same thing with RF. I have a tek465b oscilloscope and a dmm, and have built some of my own test equipment (square wave signal generator, power supply, battery tester) and lots of timer circuits with 555's and cd 4060s. Recently I have been experimenting with audio and ultrasound with opamps. All of my projects are battery operated.

I recently bought the Velleman RX 433 and TX 433 modules to try and remotely control my camera. Each module has a 'data' pin, the receiver also has a linear pin, which I am not sure how to use yet. I have been reading the data sheets and app note on the velleman site and it shows something called a HT12E being used to generate the data on the TX module and a HT12D to use these modules for remote control. I googled for the HT12E and it says it is a LSI encoder and you need the HT12D as the matching decoder (on the receiver). Not being familiar with all the terminology yet, I am wondering why I couldn't just generate a square wave to the data pin of the TX module, and, then, at the receiver, use a divide down counter to make sure enough pulses arrived, and then trigger my relay. Does anyone know if this will work? or would it just be easier (and maybe more reliable) to use the HT encoder and decoder?

I am asking because I am not familiar with the type of waveform or pulse shape that the Holtek generates, and, I am not sure if I just want to try pushing a 555 type square wave thru my TX unit and maybe end up letting the smoke out.

Any suggestions or ideas are appreciated.

TIA,
Joe
KB1KVI

2975. Re: Need help to meas noise v of a JFET

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 02:03:40 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404141803.3f6ff340@posting.google.com>
Source record: 26861

It's probably a lot more common to express the noise referred back to
the input, but if it's output noise you want, that's fine too. You'd
want to either use a drain load that's much higher resistance than the
output (drain) resistance of the FET at that bias--or else account for
the shorting effect of the load.

Often the noise is so low you would be served well by amplifying by
100 or 1000 so your "meter" has enough to measure accurately.

If I were doing it, my "meter" would be an FFT-based spectrum
analyzer, which would be able to read the amplitude directly in
V/rtHz; then I'd just divide by the gain, if I'd used an amplifier.
(I have a very low noise amplifier I use for just such measurements,
so the amplifier doesn't contribute a lot to the measurement, but even
then, it may be necessary to subtract out the amplifier's noise
contribution.) If you really need to know it at 10Hz, you probably
should not use a bandwidth much more than a couple of Hz. An
FFT-based analyzer (or possibly other spectrum analyzer, or even a
wave meter/analyzer) makes that fairly easy. Not sure this will help
in your particular situation.

Cheers,
Tom

sdeyoreo@hotmail.com wrote in message news:<7gbr70pn5l5o55a5uca614oa376v23aju3@4ax.com>...
> I need to measure the "equivalent noise voltage", in units of
> nV/square root(hz) of a JFETs drain-source at a given Vds & Ids and
> F=10 hz. How do I do that? What's throwing me is the F=10 Hz. What do
> I do with that? I thought to take the measurement, I would bias the
> FET to the required Vds and Ids and measure the voltage across the
> drain - source with an RMS meter. Then divide that by the sqrt of the
> bandwidth of the RMS meter. I've Googled, but didn't find anything to
> straighten me out. Any help?

2976. Re: LCF Software Wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 02:05:50 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404141805.3fd9e684@posting.google.com>
Source record: 26862

RFSim99 includes a calculator for L, C, F and Z, along with lots of other good stuff. The LCFZ calculator lets you lock any two and gives you the others. Should be able to find it easily with a Google search.

Cheers,
Tom

haf47@juno.com (Howard) wrote in message news:<f03bf94f.0404141328.70b035c0@posting.google.com>...
> Hello and thanks for taking the time to read this.
>
> I am seeking a piece of software I once used that calculates LCF in
> various combinations This software was DOS and is freeware.
>
> For the life of me I cannot remember that name of it.
>
> Does anyone know of freeware that does this, and where it may be
> found?
>
> Thanks es 73 de WA2AFD

2977. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 02:10:41 UTC
From: Joel Kolstad <JKolstad71HatesSpam@Yahoo.Com>
Message-ID: <c5kqp7$5an$1@news.oregonstate.edu>
Source record: 26863
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

mike <spamme0@juno.com> wrote:
> I once read that it takes more energy to make, deliver, install a solar
> panel than the total energy you get out of it over it's 20 year
> lifetime. If that's true, (small scale PV) solar makes little sense
> from an environmental standpoint.

My understanding is that improvements in the efficiency of the panels has no longer made that true... although of course to some degree it depends on where you end up installing the panels!

An easy way to determine whether or not the statement could be true is to see whether or not the cost of the energy produced by the panel over its life -- using regular market rates -- exceeds its cost. If so, obviously the panel must be producing more energy than was requried to build it, since all the labor and materials the manufacturer put into the panel weren't free!

2978. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 05:57:12 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404142157.130eddc3@posting.google.com>
Source record: 26864
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"Harold E. Johnson" <W4ZCB@mchsi.com> wrote in message
news:<YKjfc.38031$_K3.164147@attbi_s53>...
> > You'll find a little more modern technical info in HP AN-1054,
> > available at
> http://rf.rfglobalnet.com/library/ApplicationNotes/files/1/An1054.pdf.
> >
> T'aint fair Tom!

Ja, life's like dat.

> That URL is FB and I have it added to my library, but when
> I tried to trick it and deleted the AN-1054.PDF, and retyped AN-983.PDF, it
> can't find that one. Suppose I could write a little program to check AN-1
> and step 1 then find out what if anything I had. Is there some secret code
> as to how this all works?

Well, I just typed a search string about SRDs into Google to find the
AN1054 reference. I don't have any magical ideas about finding ALL of
them on the web, but when I moved out library a few months ago, I made
a point of NOT tossing out the ap notes. There's a chance we have it
at work. Now, can I remember to look? Luckily, I didn't find enough
stamps to mail the other stuff off to you and John yet, so if I can
find it, I can stick that one in too. Best magic I can think of for
it at the moment. There are some other SRD-related ones listed in my
Communications Components catalog from 1993: AN918, AN928, (AN983),
AN984, AN989. It does list HP part numbers for each one. "To order
literature, ... 1-800-537-7715" but that's from a long time ago...

Cheers,
Tom

2979. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 05:57:18 UTC
From: ehsjr@bellatlantic.net
Message-ID: <407E2458.C40B070D@bellatlantic.net>
Source record: 26865
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Watson A.Name \"Watt Sun - the Dark Remover\"" wrote:
>
> Joel Kolstad wrote:
> > Watson A.Name - "Watt Sun, the Dark Remover" <NOSPAM@dslextreme.com> wrote:
> >
> >>My attitude is that rather than try to do this (and in the process lose
> >>reliability), it's better to go supersize on the cells, add more area
> >>and overall capacity to get you thru the cloudy days, and have a higher
> >>capacity overall.
> >
> >
> > The argument usually goes that getting, say, 10-20% more power from a better
> > charge controller (one of these so-called 'maximum power point controllers')
> > can be cheaper (in additional expenditures) than getting 10-20% larger
> > panels. It's sometimes difficult to show, though, particularly on small
> > systems -- but MPPT controllers have been getting cheaper for awhile, now,
> > and I expect that eventually all but the cheapest/smallest will have this
> > functionality.
>
> Last nite (Tue, 9pm) I watched a prog on PBS that was about getting
> people to use more renewable resources, hosted by Cameron Diaz (hot
> blonde movie star), who drives a Prius. They talked about getting every
> home to have a solar panel, and selling power back to the utility co.
> She also said that if everyone in the U.S. drove a hybrid vehicle, we
> could completely eliminate oil shipments from the middle east. Well,
> I'd go out and buy a Prius, but one of the guys at work has had his new
> Prius since xmas and it took him 4 months or so to get it after
> submitting a $500 earnest check to several dealerships to get on their
> waiting list. They say they're trying to make more of them, but I think
> they really don't want the prices to fall, since they're expensive to
> make. In any case I'd like more solar power, but the initial outlay is
> _not_ cheap.

Nor does it pay for itself in any reasonable time,
if at all, if you are grid connected. (If you need to
spend a huge amount to get connected to the grid,
solar can become very attractive.)

A guy in Florida quoted 48 years pay back time. I ran
the numbers for my home - over 40 years, and I pay 13
cents per kwh. A 2 kW system costs $15000. Assuming
an average of 8 hours per day of 2kW per hour, that
solar system would give me 16 kWh. I pay 16*.13 or
$2.08 for 16 kWh. Works out to 19+ years for payback,

if you don't count on mortgage payments for the system.
Add that in, and the cost of a $15000 system is
much worse - over 30,000 in a 25 year, 7% mortgage.

2980. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 08:12:40 UTC
From: Barry Lennox <pbarryplennoxp@operamail.com>
Message-ID: <asgs70pr15ils6v202f8itge9b3bo7vpn6@4ax.com>
Source record: 26867
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Mon, 12 Apr 2004 12:23:09 -0700, John Larkin
<jjlarkin@highSNIPlandTHIStechPLEASEnology.com> wrote:

>
>The only distributor-stock SRDs I know of are the M/Acom MA44767,
>MA44768, MA44769 parts, all SOT-23 and dirt cheap. I think Penstock
>carries them. The '68 or '69 should be good for multiplication to 2
>GHz. For high ratios, an SRD will beat a plain diode by a huge amount.
>There are lots of appnotes around about using them as multipliers.
>
>I have a bunch in stock and can send a few to anybody who wants to
>play.

MPulse microwave used to be pretty good with samples, I have some
MP4065 SRDs that work well.

Tel # used to be 408 432 1480

Barry lennox

2981. Re: questions about 433MHZ modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 08:37:18 UTC
From: remove_ok1sip@atlas.cz
Message-ID: <5f5159fa.0404150037.5886deee@posting.google.com>
Source record: 26868

Hi Joe,
IMHO the linear output of the RX is for testing purposes, you should
let it unused. The encoder/decoder pair is used as a key-and-lock, for
better reliability and security. Your solution using a pulse generator
at the TX side might do for a camera remote control - it can be less
safe than, say, a car alarm. A bandpass filter or a PLL checking the
frequency of the pulses on the receiver output should work even better
than a counter only.
The TX unit has limits for input voltage and frequency. If you do not
exceed them, no damage should take place.

BR from Ivan

"Joe" <nuisancewildlife@nospamearthlink.net> wrote in message
news:<3Qlfc.10044$k05.5854@newsread2.news.pas.earthlink.net>...
> Hello to the group,
>
> I just found this forum and hopefully, I can learn some more about
> homebrewing stuff. I have been a hobbyist in electronics for a little over a
> year now and recently received my element 2 tech license. Last year I built
> an infrared transmitter and receiver pair to trigger my camera remotely
> (about a 50 foot range). Since then, I have wanted to do the same thing with
> RF. I have a tek465b oscilloscope and a dmm, and have built some of my own
> test equipment (square wave signal generator, power supply, battery tester)
> and lots of timer circuits with 555's and cd 4060s. Recently I have been
> experimenting with audio and ultrasound with opamps. All of my projects are
> battery operated.
>
> I recently bought the Velleman RX 433 and TX 433 modules to try and remotely
> control my camera. Each module has a 'data' pin, the receiver also has a
> linear pin, which I am not sure how to use yet. I have been reading the data
> sheets and app note on the velleman site and it shows something called a
> HT12E being used to generate the data on the TX module and a HT12D to use
> these modules for remote control. I googled for the HT12E and it says it is
> a LSI encoder and you need the HT12D as the matching decoder (on the
> receiver). Not being familiar with all the terminology yet, I am wondering
> why I couldn't just generate a square wave to the data pin of the TX
> module, and, then, at the receiver, use a divide down counter to make sure
> enough pulses arrived, and then trigger my relay. Does anyone know if this
> will work? or would it just be easier (and maybe more reliable) to use the
> HT encoder and decoder?
>
> I am asking because I am not familiar with the type of waveform or pulse
> shape that the Holtek generates, and, I am not sure if I just want to try
> pushing a 555 type square wave thru my TX unit and maybe end up letting the

> smoke out.
>
> Any suggestions or ideas are appreciated.
>
> TIA,
> Joe
> KB1KVI

2982. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 11:39:37 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <Zvufc.42262$_K3.205129@attbi_s53>
Source record: 26869
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

> Well, I just typed a search string about SRDs into Google to find the
> AN1054 reference. I don't have any magical ideas about finding ALL of
> them on the web, but when I moved out library a few months ago, I made
> a point of NOT tossing out the ap notes. There's a chance we have it
> at work. Now, can I remember to look?

DOn't worry about finding AN983, I have a dog-eared copy here. If YOU want a copy, I can do the reverse lend-lease thing.

W4ZCB

2983. MC3340p - where or what

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 12:29:22 UTC
From: gazeta <m_bal@friko3.onet.pl>
Message-ID: <c5lv48rst1@inews.gazeta.pl>
Source record: 26871

Where to buy (post) MC3340p or what is a functional replacement.
I need it to TRX with mc3362

MAc
sp9mrn

2984. Re: Need help to meas noise v of a JFET

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 12:30:53 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <_4WdnadFZ58p4uPd4p2dnA@comcast.com>
Source record: 26870

Williams at Linear Technology has written several application notes which discuss the practical measurement of noise. Search on their website for a PDF entitled "Characterization of Noise in Low Dropout Regulators" -- not that you are measuring an LDO, but the techniques should be valid.

<sdeyoreo@hotmail.com> wrote in message
news:7gbr70pn5l5o55a5uca614oa376v23aju3@4ax.com...
> I need to measure the "equivalent noise voltage", in units of
> nV/square root(hz) of a JFETs drain-source at a given Vds & Ids and
> F=10 hz. How do I do that? What's throwing me is the F=10 Hz. What do
> I do with that? I thought to take the measurement, I would bias the
> FET to the required Vds and Ids and measure the voltage across the
> drain - source with an RMS meter. Then divide that by the sqrt of the
> bandwidth of the RMS meter. I've Googled, but didn't find anything to
> straighten me out. Any help?

2985. Re: Homebrewing a receiver question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 13:49:49 UTC
From: newbe_1957@yahoo.com
Message-ID: <f347c6b9.0404150549.2375484@posting.google.com>
Source record: 26872

Joe McElvenney <ximac@btinternet.com> wrote in message
news:<usrp70p4tg4osbap0tesb9qq7b0uncd866@4ax.com>...
> Hi,
>
> >How do you choose a I.F. when homebrewing a H.F. receiver with BFO? I
> >want to build a receiver that covers all H. F. amateur bands. I am a
> >little confused on how to pick the type of crystal filters to use.
> >thanks
>
> First catch your rabbit (i.e. a filter).
>
> That is how a certain rabbit pie recipe starts and the same is
> often true of radio projects. Joe Ham comes back from the yard sale
> with a pair of tubes or a large transformer and then builds a linear
> around what he has found. So go look for a good SSB/AM filter and
> design the rest to suite.
>
> A good compromise is 9MHz, as you can probably get away with
> single conversion. Some of the tighter spec filters are at 455kHz
> however but then you will have to go the dual-conversion route. Both
> work, it is simply 'horses for courses'. If you want to put a roofing
> filter up front, you could try a narrow 10.7MHz from an old mobile
> radio but you will still need a narrow one after it.
>
>
> 73 de Joe, G3LLV

Where do you get the 9MHz Crystal filter and I.F. cans?

2986. Re: Need help to meas noise v of a JFET

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 14:02:53 UTC
From: TOM <noname@noprovider.nodomain>
Message-ID: <hCwfc.8993$hg1.4575@nwrddc02.gnilink.net>
Source record: 26873

It has been a few years....

The noise density in the JFET has a strong 1/f characteristic. This means it increases by 6 db each time you halve the measurement frequency. For silicon, I recall the corner frequency being in the ~ 100 Hz.range. The unit "nV/root-hertz" is the noise density, not the noise. You need to measure the voltage within a finite bandwidth. From that, you can derive the noise power, then the noise density. When measuring below the corner frequency you have to account for this 1/f slope.

Thermal noise in a 50 ohm system at room temperature is about 0.9 nV/root-hertz. In a 1000 ohm system it is about 4 nV/root-hertz. This will set the lower measurement limit, you test equipment will probably limit you to worse than this. Using adequate measurement bandwidth and correct circuit resistance (within the confines of the JFET parameter range) will provide sufficient noise voltage to actually measure, but it will take some gain (via a very low noise measurement amplifier) to produce something you can hook to a measuring device.

There are lots of subtle way to make noise measurement errors. I recommend that you use the test setup that is specified by the manufacturer to make the measurement, otherwise your results will likely not correlate with their numbers.

-- Tom, N5EG

<sdeyoreo@hotmail.com> wrote in message news:7gbr70pn5l5o55a5uca614oa376v23aju3@4ax.com...
> I need to measure the "equivalent noise voltage", in units of
> nV/square root(hz) of a JFETs drain-source at a given Vds & Ids and
> F=10 hz. How do I do that? What's throwing me is the F=10 Hz. What do
> I do with that? I thought to take the measurement, I would bias the
> FET to the required Vds and Ids and measure the voltage across the
> drain - source with an RMS meter. Then divide that by the sqrt of the
> bandwidth of the RMS meter. I've Googled, but didn't find anything to
> straighten me out. Any help?

2987. Re: Homebrewing a receiver question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 14:17:04 UTC
From: k3bu@aol.comNoUsama
Message-ID: <20040415101704.16282.00000376@mb-m03.aol.com>
Source record: 26874

>
>Where do you get the 9MHz Crystal filter and I.F. cans?
>

eBay, look for Ten-Tec or Icom 9 MHz filters or kits and filters from INRAD
http://www.qth.com/inrad/home.htm

Yuri, K3BU

2988. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 15:15:09 UTC
From: John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com>
Message-ID: <je9t705s0t5pctr8ncpupmhe9ojn3vbbt2@4ax.com>
Source record: 26875
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Thu, 15 Apr 2004 20:12:40 +1200, Barry Lennox
<pbarryplennoxp@operamail.com> wrote:

>On Mon, 12 Apr 2004 12:23:09 -0700, John Larkin
><jjlarkin@highSNIPlandTHIStechPLEASEnology.com> wrote:
>
>
>>
>>The only distributor-stock SRDs I know of are the M/Acom MA44767,
>>MA44768, MA44769 parts, all SOT-23 and dirt cheap. I think Penstock
>>carries them. The '68 or '69 should be good for multiplication to 2
>>GHz. For high ratios, an SRD will beat a plain diode by a huge amount.
>>There are lots of appnotes around about using them as multipliers.
>>
>>I have a bunch in stock and can send a few to anybody who wants to
>>play.
>
>MPulse microwave used to be pretty good with samples, I have some
>MP4065 SRDs that work well.
>
>Tel # used to be 408 432 1480
>
>Barry lennox

M-Pulse is good guys; we use some of their faster parts, and they are
very helpful. But they apparently don't stock anything, and wire-bond
- even samples - to order. So if you only want a few pieces for
yourself, and don't intend to place a production order, you'll have to
lie to them to get samples.

Metelics is similar; they seem to make the fastest SRD (35 ps) you can
buy on the open market. Not as friendly as M-Pulse, though.

John

2989. Re: Need help to meas noise v of a JFET

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 16:25:15 UTC
From: sdeyoreo@hotmail.com
Message-ID: <eedc8ee9.0404150825.3cd0f3f6@posting.google.com>
Source record: 26876

Thanks alot for your help, I really appreciate it. Would you look at this FFT analyzer: http://www.srsys.com/products/SR760770.htm and do you think it will "see" 20nV/sqrt(hz) or will I need an amp? What do you use as a low noise amp? This FFT analyzer has noise floor of 10 nV/sqrt(hz) and dynamic range of 90 db at -60 dbV full scale range. Again. I really appriciate any help.

k7itm@aol.com (Tom Bruhns) wrote in message news:<3200347.0404141803.3f6ff340@posting.google.com>...
> It's probably a lot more common to express the noise referred back to
> the input, but if it's output noise you want, that's fine too. You'd
> want to either use a drain load that's much higher resistance than the
> output (drain) resistance of the FET at that bias--or else account for
> the shorting effect of the load.
>
> Often the noise is so low you would be served well by amplifying by
> 100 or 1000 so your "meter" has enough to measure accurately.
>
> If I were doing it, my "meter" would be an FFT-based spectrum
> analyzer, which would be able to read the amplitude directly in
> V/rtHz; then I'd just divide by the gain, if I'd used an amplifier.
> (I have a very low noise amplifier I use for just such measurements,
> so the amplifier doesn't contribute a lot to the measurement, but even
> then, it may be necessary to subtract out the amplifier's noise
> contribution.) If you really need to know it at 10Hz, you probably
> should not use a bandwidth much more than a couple of Hz. An
> FFT-based analyzer (or possibly other spectrum analyzer, or even a
> wave meter/analyzer) makes that fairly easy. Not sure this will help
> in your particular situation.
>
> Cheers,
> Tom
>
> sdeyoreo@hotmail.com wrote in message news:<7gbr70pn5l5o55a5uca614oa376v23aju3@4ax.com>...
> > I need to measure the "equivalent noise voltage", in units of
> > nV/square root(hz) of a JFETs drain-source at a given Vds & Ids and
> > F=10 hz. How do I do that? What's throwing me is the F=10 Hz. What do
> > I do with that? I thought to take the measurement, I would bias the
> > FET to the required Vds and Ids and measure the voltage across the
> > drain - source with an RMS meter. Then divide that by the sqrt of the
> > bandwidth of the RMS meter. I've Googled, but didn't find anything to
> > straighten me out. Any help?

2990. Re: Homebrewing a receiver question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 16:45:43 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <107tf1kffeu8871@corp.supernews.com>
Source record: 26877

Yuri Blanarovich wrote:

>>Where do you get the 9MHz Crystal filter and I.F. cans?
>>
>
>
> eBay, look for Ten-Tec or Icom 9 MHz filters or kits and filters from INRAD
> http://www.qth.com/inrad/home.htm
>
> Yuri, K3BU

You can also roll your own, particularly if you're doing code-only. I
think the current ARRL handbook has info on home brewing crystal filters.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

2991. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 18:14:49 UTC
From: Solar Guppy <solar-guppy@solar-guppy.com>
Message-ID: <wiAfc.27886$Lg.5810@fe07.usenetserver.com>
Source record: 26878
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

And what does a 2 kWh system cost 15,000 mean ? is that what you paid or just some made up numbers like your 16kWr per day which is pure fiction ..

I built my 6 kWh system for 17K ...

www.solar-guppy.com , you can see my invoices and the system installed in the photo gallery. Also under real-time status you can see the energy being delivered ... , anyone can buy the parts today for a similar amount , check out the solar deals sections for links http://www.solar-guppy.com/forum/viewforum.php?f=12 as examples.

My average per day is about 24kWr/day so far (3 months) , my electrical rate is now 12 cents kWr (they have raised the rates about 2 cents kWh in the least year , more increases to come for sure)

24 * .12 = 2.88 .. 17,000 / 2.88 = 5902 (days) = 16.17 years My , Real system , My real rates NO REBATES ...

Do the same thing in California , where 65 % of the cost is covered (50% materials , 15% state-tax rebate) and the payback is reduced to 17k * .45 = 7650 ... 7650 / 2.88 2656 (days) = 7.27 years .. its actually much better in CA than this since the rates can be TOU (time of use) , the typical CA rates are .15 - .25 kWhr ... putting the payback at 3.49 years at 25 cents kWh (a typical afternoon TOU rate) ....

<ehsjr@bellatlantic.net> wrote in message news:407E2458.C40B070D@bellatlantic.net...
>
>
> "Watson A.Name \"Watt Sun - the Dark Remover\"" wrote:
> >
> > Joel Kolstad wrote:
> > > Watson A.Name - "Watt Sun, the Dark Remover" <NOSPAM@dslextreme.com> wrote:
> > >
> > >>My attitude is that rather than try to do this (and in the process lose
> > >>reliability), it's better to go supersize on the cells, add more area
> > >>and overall capacity to get you thru the cloudy days, and have a higher
> > >>capacity overall.
> > >
> > >
> > > The argument usually goes that getting, say, 10-20% more power from a better

> > > charge controller (one of these so-called 'maximum power point
controllers')
> > > can be cheaper (in additional expenditures) than getting 10-20% larger
> > > panels. It's sometimes difficult to show, though, particularly on
small
> > > systems -- but MPPT controllers have been getting cheaper for awhile,
now,
> > > and I expect that eventually all but the cheapest/smallest will have
this
> > > functionality.
> >
> > Last nite (Tue, 9pm) I watched a prog on PBS that was about getting
> > people to use more renewable resources, hosted by Cameron Diaz (hot
> > blonde movie star), who drives a Prius. They talked about getting every
> > home to have a solar panel, and selling power back to the utility co.
> > She also said that if everyone in the U.S. drove a hybrid vehicle, we
> > could completely eliminate oil shipments from the middle east. Well,
> > I'd go out and buy a Prius, but one of the guys at work has had his new
> > Prius since xmas and it took him 4 months or so to get it after
> > submitting a $500 earnest check to several dealerships to get on their
> > waiting list. They say they're trying to make more of them, but I think
> > they really don't want the prices to fall, since they're expensive to
> > make. In any case I'd like more solar power, but the initial outlay is
> > _not_ cheap.
>
>
> Nor does it pay for itself in any reasonable time,
> if at all, if you are grid connected. (If you need to
> spend a huge amount to get connected to the grid,
> solar can become very attractive.)
>
> A guy in Florida quoted 48 years pay back time. I ran
> the numbers for my home - over 40 years, and I pay 13
> cents per kwh. A 2 kW system costs $15000. Assuming
> an average of 8 hours per day of 2kW per hour, that
> solar system would give me 16 kWh. I pay 16*.13 or
> $2.08 for 16 kWh. Works out to 19+ years for payback,
> if you don't count on mortgage payments for the system.
> Add that in, and the cost of a $15000 system is
> much worse - over 30,000 in a 25 year, 7% mortgage.

2992. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 18:19:55 UTC
From: "Watson A.Name \"Watt Sun - the Dark Remover\"" <NOSPAM@dslextreme.com>
Message-ID: <c5mjlg$6nh02$1@hades.csu.net>
Source record: 26880
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Charles W. Johnson Jr. wrote:

[snip]

>>>While I'm all for using more renewable resources, and especially
>>>ones that are environmentally friendly, it doesn't make sense to
>>>cause yourself financial pain doing so. It makes sense to buy the
>>>must fuel efficient vehicle that fits your needs but not to overspend
>>>simply because it's a little better on the gas mileage.

>>It's not a "little" better, it more than double - 50+ MPG compared to 25!

[snip]

> Surprisingly enough some SUV owners actually need the SUV at the time of
> purchase, I personally drove through snow 70cm deep on a regular basis prior
> to my recent job change. Just because the people in southern California
> don't need it doesn't mean no one does.

> Charles

Surprisingly enough, many of those people who bought a big Ford
Expedition or GM Yukon could have got by with a lot smaller, and hence a
lot more economical SUV. ALso, there are vans, too, with a much better
gas mileage. Surprisingly enough, it's not about whether or not it's a
SUV or a truck or whatever, it's whether or not it's a gas guzzler.

2993. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 18:21:43 UTC
From: Solar Guppy <solar-guppy@solar-guppy.com>
Message-ID: <ZoAfc.27887$Lg.10868@fe07.usenetserver.com>
Source record: 26879
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

The current issue of home power magazine directly answers this ...
www.home-power.com

It is a myth (your understanding) , panels recoup there cost in about 2-3 years and will last much longer than 25 years. The 25 years , is the manufactures warranty for 80% power generation .... The panels will last until they suffer physically damage, the silicon will deliver power well past our or our children's life times ...

"mike" <spamme0@juno.com> wrote in message news:407DE1C7.9090102@juno.com...
>> I once read that it takes more energy to make, deliver, install a solar
> panel than the total energy you get out of it over it's 20 year
> lifetime. If that's true, (small scale PV) solar makes little sense
> from an environmental standpoint.
>
> mike
>
>
>
>

2994. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 19:08:48 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c5mmnm$8te$1@newshost.mot.com>
Source record: 26883

"Bill Janssen" <billjNOTTHIS@ieee.org> wrote in message
news:T5%ec.1615$Kv3.324@news01.roc.ny...
> Steve Nosko wrote:
>
> >"H. Peter Friedrichs" <XXXhpfuopZZZ@mindspring.com> wrote in message
> >news:0TDec.7141$A_4.6041@newsread1.news.pas.earthlink.net...
> >
> >>Hello, All:
> >>Rumor has it that QST featured an article in a January/1930 or
> >January/1935
> >>issue on the subject of homebrew transmitter crystals - how cut, lap,
and
> >>mount them. If anyone has QST on CDROM for those years, I'd sure
> >appreciate
> >>if you could take a look.
> >>Remove XXX's and ZZZ's if you wish to reply directly, and thanks.
> >>Pete
> >>AC7ZL
> >>
> >>
> >
> >
> > Pete,
> >
> > I have my Dad's grinding stuff, but don't do it. One thing to keep
in
> >mind, and I don't know the details, but remember that the crystal
activity
> >is effected by the edges. Grinding the edges is one of the more esoteric
> >aspects.
> >
> >
> The trick isn't the edges but keeping the two surfaces parallel and
> flat. The procedure is to grind a little
> and check the activity. If it is down try to grind the center or edges
> and check again. If it gets better
> then go back to to grinding and trying to keep it flat.
>
> Anyway that is the method I used.
>
> Bill K7NOM

Sounds important, Bill, but my words may have been misunderstood. By
edges I meant the end surfaces...as in ; stand the blank up on one edge -

vertically - there are four of 'em. I don't remember if he said that the ends must be made to have a 90 degree angle with the faces or what. I just remember that he said that you grind these sides for best / better activity.

I was not referring to the outer reaches of the two large faces as in; is the face flat or curved in some way.

--
Steve N, K,9;d, c. i My email has no u's.

2995. Re: Refresh old capacitors. How to ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 19:09:19 UTC
From: averyfineman@aol.com
Message-ID: <20040415150919.03825.00000283@mb-m27.aol.com>
Source record: 26882

In article <m3lr70lr54ri1pvq9d4mbep3bj7reuigrg@4ax.com>, Bill Turner
<noway@nohow.com> writes:

>On Wed, 14 Apr 2004 23:09:40 GMT, Allan Butler <ka0ies@hotmail.com>
>wrote:
>
>>there have been rare cases where a new capacitor surprises the new owner
>>with a loud bang.
>
>_____
>
>This is so rare as to be a non-issue. If a new electrolytic goes
>"bang", you have almost certainly done one of two things wrong:
>
>1. Installed a new capacitor with too low a voltage rating.
>
>-or-
>
>2. Installed the new one backwards.
>
>Or both. :-)
>
>Otherwise, don't worry about it.

Bill, I have to agree with you. This is a NON-ISSUE.

Having had some experience in electron-pushing, mostly hands-on,
since 1947 (which includes those "B+" high-working-voltage
electrolytics lots are so "afraid of" nowadays), I've been through
the same two boo-boos you mentioned...but only a few times and
that was long ago.

I've got a few electrolytics that have been around since the year
dot in the workshop and they still measure good enough, with
or without this "re-forming." Those were obtained some time
between 1958 and 1964, putting them 46 to 40 years ago since
first manufactured. :-)

No explosions, no going "poooof," just sitting there doing their
thing, tack-soldered into a quasi-breadboard for a hybrid "B+"
supply that is regulated and I'm interested in trading off how
much capacity needed for achieving a reasonable regulator.
Not building a production prototype, not worried about a job if
10,000 ordered parts will be scrapped if the wrong thing is
ordered or worried about future QC shouting and hollering about
"failure rates." It works or it don't.

This is a HOMEBREWER newsgroup. We aren't building space-
craft that must operate unattended on Mars. We should have
- as hobbyists on the bench - some kind of power supply handy.
It's a bloody simple task to just get some clip leads and a handy
series resistor and roll up some voltage from whatever supply is
there, then see if the electrolytics can hack it. Takes at most
a half hour to set up, do it, make notes, take down...about the
time needed for some to sit and agonize over problems they
don't have yet on the Internet. Geez, at worst, a cap will get
fried and a new one has to be bought. Maybe. One #$%^!!!
better than "replacing _all_ 'old' ones" as another suggested.

Len Anderson
retired (from regular hours) electronic engineer person

2996. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 19:09:20 UTC
From: averyfineman@aol.com
Message-ID: <20040415150920.03825.00000284@mb-m27.aol.com>
Source record: 26881

In article <c5kqp7$5an$1@news.oregonstate.edu>, "Joel Kolstad"
<JKolstad71HatesSpam@Yahoo.Com> writes:

>mike <spamme0@juno.com> wrote:
>> I once read that it takes more energy to make, deliver, install a solar
>> panel than the total energy you get out of it over it's 20 year
>> lifetime. If that's true, (small scale PV) solar makes little sense
>> from an environmental standpoint.
>
>My understanding is that improvements in the efficiency of the panels has no
>longer made that true... although of course to some degree it depends on
>where you end up installing the panels!
>
>An easy way to determine whether or not the statement could be true is to
>see whether or not the cost of the energy produced by the panel over its
>life -- using regular market rates -- exceeds its cost. If so, obviously
>the panel must be producing more energy than was requried to build it, since
>all the labor and materials the manufacturer put into the panel weren't
>free!

Actually, solar panels DO - under circumstances, but that seems
beside the point in this particular thread. We all get a migration
from the original thread question to automobile economy (!) and a
lot of polarized opinions. :-)

It seems that the higher the polarization level, the more they
become like electrolytic capacitors. Put them in the wrong way
and they blow up...

The original thread question (maybe) was about using solar
cells for battery charging. In that case there needs to be
identification with two major application areas:

1. The characteristics necessary to charge a particular battery.

2. The range of input voltage and current sufficient to operate
the charging circuit as obtained from solar cells.

Nobody seems to have addressed item (1) which would seem
to drive the whole task. Item (2) could have been satisfied with
actual measurements in a 48-hour time period, one day to set
it up, a second day to take the measurements, noting time of
day, cloud cover, etc.

Please excuse me for thinking linearly... :-)

Len Anderson
retired (from regular hours) electronic engineer person

2997. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 19:54:39 UTC
From: "William P.N. Smith" <w_smith@compusmiths.com>
Message-ID: <62qt70p5jr7a55hr57ju6lu649bjblkjmu@4ax.com>
Source record: 26892
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Solar Guppy" <solar-guppy@solar-guppy.com> wrote:
>The current issue of home power magazine directly answers this ...
>www.home-power.com

That's http://www.homepower.com/ (the other one is a WWWeb interface
to one of these newsgroups.

--
William Smith
ComputerSmiths Consulting, Inc. www.compusmiths.com

2998. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 20:16:09 UTC
From: Jan Panteltje <pNaonStpealmtje@yahoo.com>
Message-ID: <c5mqgb$23pc$1@news.wplus.net>
Source record: 26884
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On a sunny day (Thu, 15 Apr 2004 05:57:18 GMT) it happened
ehsjr@bellatlantic.net wrote in <407E2458.C40B070D@bellatlantic.net>:
>A guy in Florida quoted 48 years pay back time. I ran
>the numbers for my home - over 40 years, and I pay 13
>cents per kwh. A 2 kW system costs $15000. Assuming
>an average of 8 hours per day of 2kW per hour, that
>solar system would give me 16 kWh. I pay 16*.13 or
>$2.08 for 16 kWh. Works out to 19+ years for payback,
>if you don't count on mortgage payments for the system.
>Add that in, and the cost of a $15000 system is
>much worse - over 30,000 in a 25 year, 7% mortgage.
You have to take into account that the cost of a kWh from
the grid in 25 years will be a LOT higher too, if there
still is a grid during and after WW3 that is.
JP

2999. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 20:35:02 UTC
From: Gene Fuller <gfuller1930_not_@earthlink.net>
Message-ID: <WICfc.11832$k05.237@newsread2.news.pas.earthlink.net>
Source record: 26885
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Jan Panteltje" <pNaonStpealmtje@yahoo.com> wrote in message
news:c5mqgb$23pc$1@news.wplus.net...
> On a sunny day (Thu, 15 Apr 2004 05:57:18 GMT) it happened
> ehsjr@bellatlantic.net wrote in <407E2458.C40B070D@bellatlantic.net>:
> >A guy in Florida quoted 48 years pay back time. I ran
> >the numbers for my home - over 40 years, and I pay 13
> >cents per kwh. A 2 kW system costs $15000. Assuming
> >an average of 8 hours per day of 2kW per hour, that
> >solar system would give me 16 kWh. I pay 16*.13 or
> >$2.08 for 16 kWh. Works out to 19+ years for payback,
> >if you don't count on mortgage payments for the system.
> >Add that in, and the cost of a $15000 system is
> >much worse - over 30,000 in a 25 year, 7% mortgage.
> You have to take into account that the cost of a kWh from
> the grid in 25 years will be a LOT higher too, if there
> still is a grid during and after WW3 that is.
> JP

I would say that so far during WW# there is still a grid.

3000. Re: questions about 433MHZ modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 20:47:27 UTC
From: Joe <nuisancewildlife@nospamearthlink.net>
Message-ID: <zxCfc.11902$A_4.11138@newsread1.news.pas.earthlink.net>
Source record: 26886

"OK1SIP" <remove_ok1sip@atlas.cz> wrote in message
news:5f5159fa.0404150037.5886deee@posting.google.com...
> Hi Joe,
> IMHO the linear output of the RX is for testing purposes, you should
> let it unused. The encoder/decoder pair is used as a key-and-lock, for
> better reliability and security. Your solution using a pulse generator
> at the TX side might do for a camera remote control - it can be less
> safe than, say, a car alarm. A bandpass filter or a PLL checking the
> frequency of the pulses on the receiver output should work even better
> than a counter only.
> The TX unit has limits for input voltage and frequency. If you do not
> exceed them, no damage should take place.
>
> BR from Ivan
>
Hi BR,

Thank you for the info. Today I connected the transmitter data pin to my square wave generator with a 1Khz square wave (at 3V peak) and I could see it on the receiver output pins, both the linear and digital pins on the receiver output pretty much the same signal. The only thing I was confused about is that, when I first switch the receiver on, the digital output is quiet (it goes to 5volts at first and then drops to and stays at zero volts). Once I transmit the square wave to it and turn the transmitter off, the digital output is very noisy (low frequency, I think) and never settles back to zero. The linear line comes up to about 2 volts on power up, shows a pretty good square wave when the transmitter is on and then goes back to the 2 volt level when the transmitter is turned off and stays much quieter.

I can probly filter out the noise on the digital line, or capacitively couple the linear line to get rid of the dc, but I still need to study this more. The range was amazing! I measured about 60 feet (~20meters) and the signal was still strong. This was with the receiver in a building and the transmitter outside. I can still get more range out of it I am sure, so I will be testing that also.

I have never worked with phase lock loops before, but I do have a few in my cmos collection, along with the data sheets. Do you know of any links I can visit to see some applications of the cd4046B PLL?

Thanks,
Joe
KB1KVI

3001. FS Teflon wire

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 22:21:28 UTC
From: James Skalski <jskalski@yahoo.com>
Message-ID: <407F0B01.6030904@yahoo.com>
Source record: 26887

500' teflon insulated, silver plated, stranded 24 AWG.
Five 100 foot rolls in five different colors.
No choice of colors. No other gauges

$10 for 500 foot assortment. Shipping in US $5.50

Shipping in Canada/Europe $6.

For US only: up to 3 assortments (1500' total) same shipping rate $5.50
Total cost for 3 x 500' assortments $35.50 shipped in US.

Paypal OK.

Jim n2go

3002. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 22:44:29 UTC
From: "H. Peter Friedrichs" <XXXhpfuopZZZ@mindspring.com>
Message-ID: <hfEfc.11924$k05.11383@newsread2.news.pas.earthlink.net>
Source record: 26888

Michael,

I'm interested in "extreme" homebrew for its own sake. I simply like it.

http://www.mindspring.com/~pfriedr/books/ioa/gallery/gallery.htm
http://www.mindspring.com/~pfriedr/books/votc/gallery/gallery.htm

Pete
AC7ZL

"Michael Black" <et472@FreeNet.Carleton.CA> wrote in message
news:c5i68ngsf1@freenet9.carleton.ca...
> Bob Monaghan (rmonagha@engr.smu.edu) writes:
> >
> > Wasn't there a recent historical article in QST on the role of the
quartz
> > xtal industry in WWII, how they figured out overtone osc. issues and so
> > on?
> >
> > Given that some sources ask $12 and up for scanner and ham crystals,
these
> > costs add up rather fast if you need to replace a bunch of xtals in a
> > scanner. So the search for alternatives seems quite worthwhile ;-)
> >
> But they already figured out the solution, thirty years ago, and
> it did not require going to the quarry for quartz and digging out
> old QSTs. The need for a lot of crystals luckily coincided with
> digital ICs, so before most people could get around to paying for
> all the crystals to fill out a mult-channel unit, synthesizers came
> along so you only needed one crystal. About as soon as it could be
> done practically, hams built them and wrote up articles in the ham
> magazines.
>
> Anyone who decides to make their own crystals today, other than
> for the sake of doing so (and I admit it would be an interesting
> thing to try), will likely find they can't go for the subminiature
> look, and probably will find that putting effort into building
> a synthesizer still makes sense if you need more than a few
> crystals.
>
> Michael VE2BVW
>

3003. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 22:44:33 UTC
From: "H. Peter Friedrichs" <XXXhpfuopZZZ@mindspring.com>
Message-ID: <lfEfc.11925$k05.8712@newsread2.news.pas.earthlink.net>
Source record: 26889

Jack/All

Thanks very much for the tips. I have already decided to purchase the QST's I'm looking for on CDROM. I wonder if CQ offers back issues in electronic format...I'd have to bop over to their web site and see.

Pete
AC7ZL

"J. Yazel" <jyazel@netset.com> wrote in message news:4ego70d1evllftm6bf9uejopq43gpg68h2@4ax.com...
> On Mon, 12 Apr 2004 21:29:32 GMT, "H. Peter Friedrichs"
> <XXXhpfuopZZZ@mindspring.com> wrote:
> >Hello, All:
> >
> >Rumor has it that QST featured an article in a January/1930 or January/1935
> >issue on the subject of homebrew transmitter crystals - how cut, lap, and
> >mount them. If anyone has QST on CDROM for those years, I'd sure appreciate
> >if you could take a look.
> >
> >Remove XXX's and ZZZ's if you wish to reply directly, and thanks.
> >
> >Pete
> >AC7ZL
> > ============================
>
> Here's a few more pointers:
>
> CQ 01/49 p. 37 Grinding xtals simplified
> CQ 11/57 p. 74 How to grind xtals
> CQ 10/65 p. 52 Grinding surplus xtals
> QST 02/54 p. 45 Using grid-dipper as aid to xtal grinding
> QST 06/58 p. 19 Grinding xtals
>
> Jack W8RAG
>
>

3004. FA: Yaesu FT270R Yaesu FV101-Z Cardwell Air Variable Capacitor

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 23:07:55 UTC
From: Will <willbrown@nospamsympatico.ca>
Message-ID: <oAEfc.27710$vF3.1680065@news20.bellglobal.com>
Source record: 26890

Yaesu FT270R 2m Transceiver and Power Supply
http://cgi.ebay.ca/ws/eBayISAPI.dll?ViewItem&item=3091708779&category=40069

Yaesu FV101-Z External VFO
http://cgi.ebay.ca/ws/eBayISAPI.dll?ViewItem&item=3091711496&category=4673

Cardwell Air Variable Capacitor
http://cgi.ebay.ca/ws/eBayISAPI.dll?ViewItem&item=3091917039&category=1502

3005. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-15 23:22:44 UTC
From: Bill Janssen <billjNOTTHIS@ieee.org>
Message-ID: <8PEfc.1801$Ib4.921@news01.roc.ny>
Source record: 26891

Steve Nosko wrote:

>"Bill Janssen" <billjNOTTHIS@ieee.org> wrote in message
>news:T5%ec.1615$Kv3.324@news01.roc.ny...
>
>
>>Steve Nosko wrote:
>>
>>
>>
>>>"H. Peter Friedrichs" <XXXhpfuopZZZ@mindspring.com> wrote in message
>>>news:0TDec.7141$A_4.6041@newsread1.news.pas.earthlink.net...
>>>
>>>
>>>
>>>>Hello, All:
>>>>Rumor has it that QST featured an article in a January/1930 or
>>>>
>>>>
>>>January/1935
>>>
>>>
>>>>issue on the subject of homebrew transmitter crystals - how cut, lap,
>>>>
>>>>
>and
>
>
>>>>mount them. If anyone has QST on CDROM for those years, I'd sure
>>>>
>>>>
>>>appreciate
>>>
>>>
>>>>if you could take a look.
>>>>Remove XXX's and ZZZ's if you wish to reply directly, and thanks.
>>>>Pete
>>>>AC7ZL
>>>>
>>>>
>>>>
>>>>
>>> Pete,
>>>

>>> I have my Dad's grinding stuff, but don't do it. One thing to keep
>>>
>>>
>in
>
>
>>>mind, and I don't know the details, but remember that the crystal
>>>
>>>
>activity
>
>
>>>is effected by the edges. Grinding the edges is one of the more esoteric
>>>aspects.
>>>
>>>
>>>
>>>
>>The trick isn't the edges but keeping the two surfaces parallel and
>>flat. The procedure is to grind a little
>>and check the activity. If it is down try to grind the center or edges
>>and check again. If it gets better
>>then go back to to grinding and trying to keep it flat.
>>
>>Anyway that is the method I used.
>>
>>Bill K7NOM
>>
>>
>
> Sounds important, Bill, but my words may have been misunderstood. By
>edges I meant the end surfaces...as in ; stand the blank up on one edge -
>vertically - there are four of 'em. I don't remember if he said that the
>ends must be made to have a 90 degree angle with the faces or what. I just
>remember that he said that you grind these sides for best / better activity.
>
>I was not referring to the outer reaches of the two large faces as in; is
>the face flat or curved in some way.
>
>
>
>
I understood what you meant. Just never considered that important. Maybe
that is something I missed.

Bill K7NOM

3006. Re: Refresh old capacitors. How to ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 02:08:11 UTC
From: Mike Coslo <mcoslo@adelphia.net>
Message-ID: <6ZCdnTemvqKU3eLdRVn-hg@adelphia.com>
Source record: 26893

Bill Turner wrote:

> On Wed, 14 Apr 2004 23:09:40 GMT, Allan Butler <ka0ies@hotmail.com>
> wrote:
>
>
>>there have been rare cases where a new capacitor surprises the new owner
>>with a loud bang.
>
>
> ____
>
> This is so rare as to be a non-issue. If a new electrolytic goes
> "bang", you have almost certainly done one of two things wrong:
>
> 1. Installed a new capacitor with too low a voltage rating.
>
> -or-
>
> 2. Installed the new one backwards.
>
> Or both. :-)

Which of course is a possibility when replacing them. So the restorer could be causing a problem where there was noeIf you want to carte blance replace them, that's fine, but I'm fine with taking a few hours to reform them. Generally if there is anything really wrong with the caps, it'll show up quickly.

- Mike KB3EIA -

3007. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 02:23:48 UTC
From: "Charles W. Johnson Jr." <qrus19@oneimage.com>
Message-ID: <UsHfc.12236$A_4.11760@newsread1.news.pas.earthlink.net>
Source record: 26894
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Watson A.Name "Watt Sun - the Dark Remover"" <NOSPAM@dslextreme.com> wrote
in message news:c5mjlg$6nh02$1@hades.csu.net...
> Charles W. Johnson Jr. wrote:
>
> [snip]
>
> >>>While I'm all for using more renewable resources, and especially
> >>>ones that are environmentally friendly, it doesn't make sense to
> >>>cause yourself financial pain doing so. It makes sense to buy the
> >>>must fuel efficient vehicle that fits your needs but not to overspend
> >>>simply because it's a little better on the gas mileage.
>
> >>It's not a "little" better, it more than double - 50+ MPG compared to
25!
>
> [snip]
>
> > Surprisingly enough some SUV owners actually need the SUV at the time of
> > purchase, I personally drove through snow 70cm deep on a regular basis
prior
> > to my recent job change. Just because the people in southern California
> > don't need it doesn't mean no one does.
>
> > Charles
>
> Surprisingly enough, many of those people who bought a big Ford
> Expedition or GM Yukon could have got by with a lot smaller, and hence a
> lot more economical SUV. ALso, there are vans, too, with a much better
> gas mileage. Surprisingly enough, it's not about whether or not it's a
> SUV or a truck or whatever, it's whether or not it's a gas guzzler.

A van with 4X4 or allwheel drive and ground clearance is an SUV.
Gas mileage becomes secondary if every time you try to move you get stuck.
The small SUV hold a family of 5 uncomfortably the larger hold a family of
seven, mom, dad, grandma and grandpa + 2 or more kids comfortably plus will
pull that 30'+ mobile home they camp in. Again not everyone lives in
Southern California where you can't do anything fun least you violate some
environmentalists dream.

Personally I bought the smallest vehicle I felt could do the job I needed it
to. That turned out to be a V6 that get about 25mpg highway.

Charles

3008. Re: Need Hi-Z amplifier for RF-probe (Maxim?)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 04:38:49 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404152038.49f95d11@posting.google.com>
Source record: 26895

Hi Jan-Martin,

Doesn't seem like anyone has answered this--hope you're still
monitoring it for followups.

There was an article in the Nov 2001 "Electronics World" starting on
page 842, "Active RF Scope Probe," using a Maxim MAX4005. It's a
high-input-impedance unity-voltage-gain amplifier with a built-in 75
ohm source resistor. The probe design puts a little attenuation ahead
of that amplifier, probably mostly for protection in case you connect
to too large a voltage, and there's 6dB loss in the termination on the
far end of the transmission line; so the probe circuit adds a 10dB op
amp gain stage. I haven't read all the details but believe it's
designed for 100MHz bandwidth. He has it AC coupled, but it could
probably be DC coupled if you wanted.

Cheers,
Tom

"Jan-Martin Noeding, LA8AK" <la8ak@online.no> wrote in message
news:<glla70hk8c8d9vo27000cqn2imhbr2ieaf@4ax.com>...
> Hi
>
> need info about active high impedance buffer amplifier for RF probe,
> believe Maxim makes such. Made a temporary circuit with discrete
> components, it is shown as item #2.16 on my page
> http://home.online.no/~la8ak/m2.htm
> this is good enough for one purpose, but could well be used for RF
> mV-meter covering larger range. If it is available from Linear
> Technologies it would be even easier to obtain a sample
>
> 73
>
> ----
> Jan-Martin, LA8AK, N-4623 Kristiansand
> http://home.online.no/~la8ak/

3009. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 06:02:04 UTC
From: ehsjr@bellatlantic.net
Message-ID: <407F76F1.206BD272@bellatlantic.net>
Source record: 26896
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Solar Guppy wrote:
>
> And what does a 2 kWh system cost 15,000 mean ?

What it says. You buy (not build) a complete
2 kW system for $15,000. See below

> is that what you paid or

No. There was a long thread in alt.engineering.electrical
discussing this - it's the price mentioned by a guy in
Maine for a commercial system. There's a guy off grid in
California who built his own, like you did. His cost for
solar + inverter, not including batteries & DC instrumentation,
was about 10K for 4 kW. See the site for details:
http://www.electronconnection.com/Media/OurSystem.pdf

> just some made up numbers like your 16kWr per day which is pure fiction ..

Not "pure fiction". I clearly labeled it an assumption,
which is WAY different than "pure fiction". Here's
the quote, since you may have missed the first word:
"Assuming an average of 8 hours per day of 2kW per hour,
that solar system would give me 16 kWh. "

>
> I built my 6 kWh system for 17K ...

I don't doubt that. Your write up lends credence to
the much higher cost of a commercial system vs a
do-it-yourself system. You indicated it was very
labor intensive to build the first one, taking over
5 months of your spare time. A first time builder
would go well over the 6 days labor you cited on your
second build. In any event, the labor cost would be
borne in the purchase price of a commercial system.

>
> www.solar-guppy.com , you can see my invoices and the system installed in
> the photo gallery. Also under real-time status you can see the energy being
> delivered ... , anyone can buy the parts today for a similar amount , check
> out the solar deals sections for links
> http://www.solar-guppy.com/forum/viewforum.php?f=12 as examples.
>
> My average per day is about 24kWr/day so far (3 months) , my electrical
> rate is now 12 cents kWr (they have raised the rates about 2 cents kWh in

> the least year , more increases to come for sure)

Your average proves that my assumption is way too
high. Perhaps that's what you meant by "pure fiction".
Anyway, your 6 kW system produces 24kWhr/day in
Florida - I would expect lower if it was installed
here (in NY). And it means best case, a 2kW system
here would produce about 1/3 that or about 1/2 what
I assumed. That doubles the "payback" time - which
would never happen with the 2kW system at $15,000
here.

>
> 24 * .12 = 2.88 .. 17,000 / 2.88 = 5902 (days) = 16.17 years My , Real
> system , My real rates NO REBATES ...

And at $17,000 for the system, your mortgage cost
assuming 25 years, 7% will be over $36,000. Therefore,
your *real* payback is 36000/2.88 = 12500 (days) = 34.25
years. That assumes your system requires no replacement
parts, no regular maintenance costs, and does not degrade
over time, for the full 34 + years.

>
> Do the same thing in California , where 65 % of the cost is covered (50%
> materials , 15% state-tax rebate) and the payback is reduced to 17k * .45 =
> 7650 ... 7650 / 2.88 2656 (days) = 7.27 years .. its actually much better in
> CA than this since the rates can be TOU (time of use) , the typical CA rates
> are .15 - .25 kWhr ... putting the payback at 3.49 years at 25 cents kWh (a
> typical afternoon TOU rate) ....

>
> <ehsjr@bellatlantic.net> wrote in message
> news:407E2458.C40B070D@bellatlantic.net...
> >
> >
> > "Watson A.Name \"Watt Sun - the Dark Remover\"" wrote:
> > >
> > > Joel Kolstad wrote:
> > > > Watson A.Name - "Watt Sun, the Dark Remover" <NOSPAM@dslextreme.com>
> wrote:
> > > >
> > > >>My attitude is that rather than try to do this (and in the process
> lose
> > > >>reliability), it's better to go supersize on the cells, add more area
> > > >>and overall capacity to get you thru the cloudy days, and have a
> higher
> > > >>capacity overall.
> > > >
> > > >
> > > > The argument usually goes that getting, say, 10-20% more power from a
> better

> > > > charge controller (one of these so-called 'maximum power point
> controllers')
> > > > can be cheaper (in additional expenditures) than getting 10-20% larger
> > > > panels. It's sometimes difficult to show, though, particularly on
> small
> > > > systems -- but MPPT controllers have been getting cheaper for awhile,
> now,
> > > > and I expect that eventually all but the cheapest/smallest will have
> this
> > > > functionality.
> > >
> > > Last nite (Tue, 9pm) I watched a prog on PBS that was about getting
> > > people to use more renewable resources, hosted by Cameron Diaz (hot
> > > blonde movie star), who drives a Prius. They talked about getting every
> > > home to have a solar panel, and selling power back to the utility co.
> > > She also said that if everyone in the U.S. drove a hybrid vehicle, we
> > > could completely eliminate oil shipments from the middle east. Well,
> > > I'd go out and buy a Prius, but one of the guys at work has had his new
> > > Prius since xmas and it took him 4 months or so to get it after
> > > submitting a $500 earnest check to several dealerships to get on their
> > > waiting list. They say they're trying to make more of them, but I think
> > > they really don't want the prices to fall, since they're expensive to
> > > make. In any case I'd like more solar power, but the initial outlay is
> > > _not_ cheap.
> >
> >
> > Nor does it pay for itself in any reasonable time,
> > if at all, if you are grid connected. (If you need to
> > spend a huge amount to get connected to the grid,
> > solar can become very attractive.)
> >
> > A guy in Florida quoted 48 years pay back time. I ran
> > the numbers for my home - over 40 years, and I pay 13
> > cents per kwh. A 2 kW system costs $15000. Assuming
> > an average of 8 hours per day of 2kW per hour, that
> > solar system would give me 16 kWh. I pay 16*.13 or
> > $2.08 for 16 kWh. Works out to 19+ years for payback,
> > if you don't count on mortgage payments for the system.
> > Add that in, and the cost of a $15000 system is
> > much worse - over 30,000 in a 25 year, 7% mortgage.

3010. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 06:40:16 UTC
From: ehsjr@bellatlantic.net
Message-ID: <407F7FE6.3D9FC215@bellatlantic.net>
Source record: 26797
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Jan Panteltje wrote:
>
> On a sunny day (Thu, 15 Apr 2004 05:57:18 GMT) it happened
> ehsjr@bellatlantic.net wrote in <407E2458.C40B070D@bellatlantic.net>:
> >A guy in Florida quoted 48 years pay back time. I ran
> >the numbers for my home - over 40 years, and I pay 13
> >cents per kwh. A 2 kW system costs $15000. Assuming
> >an average of 8 hours per day of 2kW per hour, that
> >solar system would give me 16 kWh. I pay 16*.13 or
> >$2.08 for 16 kWh. Works out to 19+ years for payback,
> >if you don't count on mortgage payments for the system.
> >Add that in, and the cost of a $15000 system is
> >much worse - over 30,000 in a 25 year, 7% mortgage.

> You have to take into account that the cost of a kWh from
> the grid in 25 years will be a LOT higher too, if there
> still is a grid during and after WW3 that is.
> JP

Use Solar Guppy's measured numbers and show us how
to take into account what you have in mind. I don't
know how to do it - I can't figure out what the
rates will be N, N+1, N+2 etc years from now.

But while you are talking about things "you have to
take into account": you have to take into account
the fact that most homes are not "solar friendly".
By that I mean that they can't get a full days sun
on the solar panels, due to neighbors trees, hills,
the house orientation on the lot, size of the lot,
etc. You have to take into account maintenance
costs for the solar system - it is totally unrealistic
to assume that the initial cost of the solar system
installation is all you will pay during the life
of the system. You also have to take into account
the degradation of the system capacity over time.

3011. Re: Refresh old capacitors. How to ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 06:42:26 UTC
From: pake@extrafoi.se
Message-ID: <pake-0101040015250001@dhcp-032-102.foi.se>
Source record: 26799

Thanks all information.
Now I know how to do the re-forming.

/Per-Ake

--
Remove "extra" in my e-mail adress !!

3012. Re: questions about 433MHZ modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 06:55:02 UTC
From: remove_ok1sip@atlas.cz
Message-ID: <5f5159fa.0404152255.25f3988a@posting.google.com>
Source record: 26798

Hi Joe,
the receiver is probably a superregen type. Superregens are very noisy
with no carrier on their input. Superhet modules reduce the noise
problems, but they are more expensive and complicated.
I worked enough with 4046, but I have no link at hand. It comprises a
VCO and two phase comparators - you use only one of them. What I
remember:
1/ Set the tuning range of the VCO as necessary - not too wide, not
too narrow. Two resistors and a capacitor affect both the the central
frequency and the sweep. Check the tuning range with the loop open and
a variable control voltage applied.
2/ I always used the phase comparator No.2. The comparator No.1 (a XOR
gate in fact) usually did not give me satisfying results.
3/ The filter between the phase comparator output and the VCO control
input is essential for the dynamics of the PLL. Do not underestimate
its design.
IMHO for your purpose you should set the central frequency to the
frequency of the 555 at the transmitting side and a very narrow sweep.
If the proper signal is received, the PLL locks, which is indicated on
one of the 4046 pins. This is your "activated" signal. Otherwise the
VCO runs freely and the loop stays unlocked.

Ivan OK1SIP

"Joe" <nuisancewildlife@nospamearthlink.net> wrote in message
news:<zxCfc.11902$A_4.11138@newsread1.news.pas.earthlink.net>...
> Thank you for the info. Today I connected the transmitter data pin to my
> square wave generator with a 1Khz square wave (at 3V peak) and I could see
> it on the receiver output pins, both the linear and digital pins on the
> receiver output pretty much the same signal. The only thing I was confused
> about is that, when I first switch the receiver on, the digital output is
> quiet (it goes to 5volts at first and then drops to and stays at zero
> volts). Once I transmit the square wave to it and turn the transmitter off,
> the digital output is very noisy (low frequency, I think) and never settles
> back to zero. The linear line comes up to about 2 volts on power up, shows a
> pretty good square wave when the transmitter is on and then goes back to the
> 2 volt level when the transmitter is turned off and stays much quieter.
>
> I can probly filter out the noise on the digital line, or capacitively
> couple the linear line to get rid of the dc, but I still need to study this
> more. The range was amazing! I measured about 60 feet (~20meters) and the
> signal was still strong. This was with the receiver in a building and the
> transmitter outside. I can still get more range out of it I am sure, so I
> will be testing that also.
>

> I have never worked with phase lock loops before, but I do have a few in my
> cmos collection, along with the data sheets. Do you know of any links I can
> visit to see some applications of the cd4046B PLL?
>
> Thanks,
> Joe
> KB1KVI

3013. Re: LCF Software Wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 07:19:37 UTC
From: Pete KE9OA <p.gianak@worldnet.att.net>
Message-ID: <dOLfc.36228$i74.840686@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26800

The DOS software you are refering to might be RF Tools, from Teledyne. It calculates attenuator values, Xc, Xl, resonant frequency, etc. If you do a search for RF Toolbox, you should be able to find the zip file. If you need a copy, let me know.

Pete

"Tom Bruhns" <k7itm@aol.com> wrote in message
news:3200347.0404141805.3fd9e684@posting.google.com...
> RFSim99 includes a calculator for L, C, F and Z, along with lots of
> other good stuff. The LCFZ calculator lets you lock any two and gives
> you the others. Should be able to find it easily with a Google
> search.
>
> Cheers,
> Tom
>
> haf47@juno.com (Howard) wrote in message
news:<f03bf94f.0404141328.70b035c0@posting.google.com>...
> > Hello and thanks for taking the time to read this.
> >
> > I am seeking a piece of software I once used that calculates LCF in
> > various combinations This software was DOS and is freeware.
> >
> > For the life of me I cannot remember that name of it.
> >
> > Does anyone know of freeware that does this, and where it may be
> > found?
> >
> > Thanks es 73 de WA2AFD

3014. Re: FA MORSE KEY UNIQUE Twin Paddle COLLECTORS

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 07:28:23 UTC
From: "Airy R. Bean" <airy.r.bean@lycos.co.uk>
Message-ID: <c5o231$3nrlb$2@ID-217727.news.uni-berlin.de>
Source record: 26801
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,uk.radio.amateur

Is Digby Hall this Sunday?

"Walt Davidson" <g3nyy@despammed.com> wrote in message
news:kjds70liii3pdkksacs64btvgn9njdld82@4ax.com...
> On Wed, 14 Apr 2004 22:34:56 +0100, "Ron" <bofars@ntlworld.com> wrote:
> Are you going to be at the Yeovil/Sherborne QRP 'do'on Sunday, Ron?

3015. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 08:19:10 UTC
From: Robert Baer <robertbaer@earthlink.net>
Message-ID: <407F96B1.A841EA2D@earthlink.net>
Source record: 26802
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Paul Burridge wrote:
>
> On Wed, 14 Apr 2004 00:36:17 GMT, "Harold E. Johnson"
> <W4ZCB@mchsi.com> wrote:
>
> >An 8 MHz filter doesn't have to be physically large Paul,
>
> Hi Q coils in that frequency range in compact sizes... they don't seem
> to go together. :-(
>
> >and efficiency
> >drops pretty fast (Think like a rock) as the multiplication factor goes up.
> >Have you ever actually defined what it is you're trying to do? Some control
> >thing in your 70 MHz band? Or real power for some application? Hard to hit a
> >moving target. Or is that the idea?
>
> Yeah, moving target's good. Keep the discussion generalised and it
> might help others as well. I'm not sure where the 70Mhz figure comes
> from, but it's a good enough guess by whoever made it. However, the
> final desired frequency in my particular case is in the region of
> 40Mhz which will be achieved by mixing down with the output from
> another oscillator and filtering.

A high Q resonant circuit can be rather small.
For example, i made a tunable LC with a Q approaching 1000, and it was
not the size of a garbage can (resonant cavity); it was about 5 inches
tall and about 3 inches in diameter.
On one extreme, one uses standard LC parts and get fair Qs in small
size.
On the other extreme, one makes a ersonant cavity to get very high Qs
at the expense of size.
In between there is something that can be called either a "shielded
inductor" or a "resonant cavity with slow wave structure".
One takes an inductor and places it in the center of a metal cylinder;
one end of the inductor attaches to the inner wall (makes electrical
connection and acts as support).
The capacitance to the walls (and added ends) is the other half. Move
an end for fine tuning.
Rather ingenious; ther was an IEE paper 20 years(??) ago covering the
desigh equations.
The terminology used was "Helical resonator".

3016. Re: FA MORSE KEY UNIQUE Twin Paddle COLLECTORS

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 10:13:34 UTC
From: Ron <bofars@ntlworld.com>
Message-ID: <_wOfc.17738$4N3.1352@newsfe1-win>
Source record: 26803
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,uk.radio.amateur

"Walt Davidson" <g3nyy@despammed.com> wrote in message
news:kjds70liii3pdkksacs64btvgn9njdld82@4ax.com...
> On Wed, 14 Apr 2004 22:34:56 +0100, "Ron" <bofars@ntlworld.com> wrote:
>
> >http://cgi.ebay.co.uk/ws/eBayISAPI.dll?ViewItem&item=3091175666
> >
> >FA MORSE KEY COLLECTORS Unique Twin Paddle morse key made by an
Instrument
> >maker.
> .... in the Ukraine??
>
> >We will ship this worldwide.
>
> Are you going to be at the Yeovil/Sherborne QRP 'do'on Sunday, Ron?
>
> 73 de G3NYY
>
> --
> Walt Davidson Email: g3nyy @despammed.com

The instrument maker is a bloke in Nottingham. He's a radio ham, sadly a g7 who took the multiple guess exam.

He has made all sorts of stuff engineering wise. I've known him since he started makng different musical instruments.
A copy of a dobro metal guitar in stainless steel (he used two stainless steel sinks and soldering/welding (out of my depth here) the stainless was problem getting the right flux). Being the pedantic everything got to be right kind of bloke, (I'm a try this does it work , yes that'll do) He experimented with trying to put a transducer/pickup to amplfy the thing.

He bought some really expensive transducers and i loaned him one that was from maplins for 99p. There are two miracles here
1 it worked brilliantly
2 Maplins had some in stock.

I enjoy trying to play music but i have van goffs ear for music. (and stevie wonders eye for spelling)

Keep the good work.

Regards Ron

3017. Re: LCF Software Wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 10:51:15 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c5odr3$4ge$1@titan.btinternet.com>
Source record: 26804

> The DOS software you are refering to might be RF Tools, from Teledyne. It
> calculates attenuator values, Xc, Xl, resonant frequency, etc. If you do a
> search for RF Toolbox, you should be able to find the zip file. If you
need
> a copy, let me know.
>
==========

The trouble with software calculating tools is one doesn't know whether one
has the correct answer or not. Rubbish in - rubbish out!

Nothing can replace an understanding of what is to be done and a pocket
calculator.

3018. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 11:00:54 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c5oed6$5ct$1@titan.btinternet.com>
Source record: 26805
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

It may be of interest -

Doubling the length and diameter of a solenoid and reducing the number of turns of thicker wire to maintain the same inductance, doubles the Q until radiation loss resistance begins to predominate.

And it's a big coil for radiation resistance to predominate.

Reg, G4FGQ

3019. Re: questions about 433MHZ modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 11:53:20 UTC
From: The other John Smith <jocjo-john@yooha.com>
Message-ID: <QOPfc.12630$k05.2114@newsread2.news.pas.earthlink.net>
Source record: 26806

"Joe" <nuisancewildlife@nospamearthlink.net> wrote in message
news:zxCfc.11902$A_4.11138@newsread1.news.pas.earthlink.net...

> Thank you for the info. Today I connected the transmitter data pin to my
> square wave generator with a 1Khz square wave (at 3V peak) and I could see
> it on the receiver output pins, both the linear and digital pins on the
> receiver output pretty much the same signal. The only thing I was confused
> about is that, when I first switch the receiver on, the digital output is
> quiet (it goes to 5volts at first and then drops to and stays at zero
> volts). Once I transmit the square wave to it and turn the transmitter
off,
> the digital output is very noisy (low frequency, I think) and never
settles
> back to zero. The linear line comes up to about 2 volts on power up, shows
a
> pretty good square wave when the transmitter is on and then goes back to
the
> 2 volt level when the transmitter is turned off and stays much quieter.
>
> I can probly filter out the noise on the digital line, or capacitively
> couple the linear line to get rid of the dc, but I still need to study
this
> more. The range was amazing! I measured about 60 feet (~20meters) and the
> signal was still strong. This was with the receiver in a building and the
> transmitter outside. I can still get more range out of it I am sure, so I
> will be testing that also.

Hi, Joe -

I think the linear output is from the detector in the receiver while the
digital output is following an amplifier with AGC (automatic gain control).
If so, then you may find that the linear output will decrease in amplitude
with distance but the digital output will stay constant until the range is
so great that the signal drops into the noise. Using the decoder on the
digital output eliminates the noise you see when the transmitter is off.

Sounds like a fun project.

John

3020. Re: FA MORSE KEY UNIQUE Twin Paddle COLLECTORS

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 13:10:59 UTC
From: igoruberwald@home.nl
Message-ID: <e9b53b2a.0404160510.17be3d4f@posting.google.com>
Source record: 26807
Cross-posted to: rec.radio.amateur.boatanchors,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,uk.radio.amateur

"Ron" <bofars@ntlworld.com> wrote in message news:<_wOfc.17738$4N3.1352@newsfe1-win>...

> The instrument maker is a bloke in Nottingham. He's a radio ham, sadly a
> g7 who took the multiple guess exam.

Oh well: then it can't be any good, can it?

145, Pete/Igor PH1PH - G7ECN

3021. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 13:15:43 UTC
From: "Watson A.Name - \"Watt Sun, the Dark Remover\"" <NOSPAM@dslextreme.com>
Message-ID: <107vn31ciurat99@corp.supernews.com>
Source record: 26808
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Anthony Matonak" <res04ijs@verizon.net> wrote in message
news:407DB3FB.8050509@verizon.net...
> Watson A.Name \"Watt Sun - the Dark Remover\" wrote:
> > Anthony Matonak wrote:
> >> While I'm all for using more renewable resources, and especially
> >> ones that are environmentally friendly, it doesn't make sense to
> >> cause yourself financial pain doing so. It makes sense to buy the
> >> must fuel efficient vehicle that fits your needs but not to
overspend
> >> simply because it's a little better on the gas mileage.

> > It's not a "little" better, it more than double - 50+ MPG compared
to 25!

> The definition of "little" can vary. :)
> Would you consider 5 MPG a "little" ?

> http://www.fueleconomy.gov/feg/bestworst.shtml
> Shows the Prius at 60/51 mpg with a couple of VW's in the 38/46 range.
> This is only 1.6/1.1 times and not double, especially when considering
> highway driving instead of city driving. This means you can purchase
> a vehicle with good fuel efficiency without buying a Prius or even
> a hybrid.

Most people have a passenger car typical of a Toyota Camry, typically a
6Cyl auto trans that gets mileage in the mid 20s. (you can select yours
here http://www.fueleconomy.gov/feg/findacar.htm)

But the percentage of people driving passenger cars is dwindling, more
and more are driving SUVs and trucks. Those get even worse mileage.
One of my coworkers bought a new Toyota Highlander 4WD which is based on
the Camry and it gets even less (she says less than 20) than her 2 year
old 2WD highlander. Another coworker gets less than 20 MPG on a Chevy
Tahoe SUV.

So the Prius gets even _better_ than double the average vehicle MPG.
The Honda hybrids do even better.

Looking at the difference between the hybrids and SUVs, it's more like 3
to 1 better mileage, and that's mothing to sneeze at!

[snip]

> You could chose to eliminate chicken as well as beef, eggs and dairy.
> I'm no expert in either nutrition or food prices but I think you could
[snip]

The price penalty becomes even greater when you purchase food products
that eliminate meat such as silk and soy bean and tofu meat substitutes.
It's a matter of supply and demand; most people don't buy these things,
so the prices are higher.

[snip]

> Anthony

3022. Book on Homebrew Radio -- Free!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 13:29:44 UTC
From: n2cqr@clix.pt
Message-ID: <97f305da.0404160529.41caa467@posting.google.com>
Source record: 26809

Frank Harris, K0IYE, has written a really wonderful book on
homebrewing ham radio gear. "Crystal Sets to Sideband --
A Guide to Building a Amateur Radio Station" will provide
lots of ideas and inspiration to solder melters everywhere.
I really enjoyed it.

Frank has made it available free of charge for private,
not-for-profit purposes. Download it free at

http://www.qsl.net/k3pd/book.html

Be sure to send feedback to Frank at Frwharris@aol.com

73 Bill M0HBR

3023. You are all welcome to take part in SPAT Design Challenge ...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 14:07:24 UTC
From: fmtx@euroseek.com
Message-ID: <ca3ae38d.0404160607.48d7953f@posting.google.com>
Source record: 26810

You are all welcome to take part in SPAT Design Challenge for an
Amplitude-Modulated Basic QRP Shortwave Transmitter:
http://www.geocities.com/radio_qrp/spat.html
SPAT = Simplest Practical Amplitude-Modulated Transmitter for the 40
mb Short Wave band.
This has nothing to do with the infamous "Grenade" transmitter!!

3024. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 14:29:45 UTC
From: "Watson A.Name - \"Watt Sun, the Dark Remover\"" <NOSPAM@dslextreme.com>
Message-ID: <107vrdtn5n34l85@corp.supernews.com>
Source record: 26811
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Solar Guppy" <solar-guppy@solar-guppy.com> wrote in message
news:wiAfc.27886$Lg.5810@fe07.usenetserver.com...
> And what does a 2 kWh system cost 15,000 mean ? is that what you paid
or
> just some made up numbers like your 16kWr per day which is pure
fiction ..
>
> I built my 6 kWh system for 17K ...
>
> www.solar-guppy.com , you can see my invoices and the system installed
in
> the photo gallery. Also under real-time status you can see the energy
being
> delivered ... , anyone can buy the parts today for a similar amount ,
check
> out the solar deals sections for links
> http://www.solar-guppy.com/forum/viewforum.php?f=12 as examples.
>
> My average per day is about 24kWr/day so far (3 months) , my
electrical
> rate is now 12 cents kWr (they have raised the rates about 2 cents kWh
in
> the least year , more increases to come for sure)
>
> 24 * .12 = 2.88 .. 17,000 / 2.88 = 5902 (days) = 16.17 years My ,
Real
> system , My real rates NO REBATES ...
>
> Do the same thing in California , where 65 % of the cost is covered
(50%
> materials , 15% state-tax rebate) and the payback is reduced to 17k *
.45 =
> 7650 ... 7650 / 2.88 2656 (days) = 7.27 years .. its actually much
better in
> CA than this since the rates can be TOU (time of use) , the typical CA
rates
> are .15 - .25 kWhr ... putting the payback at 3.49 years at 25 cents
kWh (a
> typical afternoon TOU rate) ....

My apt. owner put solar water heater panels on the roof more than ten
years ago, and I don't think they've been cost effective. The
neighborhood vandals threw rocks at one and broke it, so they had to pur

chicken wire over the panels to prevent damage. The cats used the foam pipe insulation to sharpen their claws, so it's gone for about two feet up from the roof. The controller and storage tanks are not working as they should, so I would guess that the system needs repair. All in all, even with the rebates, it wasn't as good as it was made out to be.

I think that the figures that you gave might be optimum, but not realistic, when other things are considered. Like dirt and snow can seriously reduce the solar output. So some maintenance has to be done. And there are other factors, intangibles, that have to be considered, such as breakdown on the electronics. When that happens, the owner may have to make a tough decision to spend a lot of money to repair, or just leave it unrepaired and disconnect it. Don't say that's not going to happen! Most of the solar heater panels I've seen are not working after a few years. It's a just matter of entropy. Things just get ignored and turn to dust, and no one bothers with them anymore.

BTW, your followup is not easily readable, misuse of commas, etc. Needs work.
[snip]

> > Nor does it pay for itself in any reasonable time,
> > if at all, if you are grid connected. (If you need to
> > spend a huge amount to get connected to the grid,
> > solar can become very attractive.)
> >
> > A guy in Florida quoted 48 years pay back time. I ran
> > the numbers for my home - over 40 years, and I pay 13
> > cents per kwh. A 2 kW system costs $15000. Assuming
> > an average of 8 hours per day of 2kW per hour, that
> > solar system would give me 16 kWh. I pay 16*.13 or
> > $2.08 for 16 kWh. Works out to 19+ years for payback,
> > if you don't count on mortgage payments for the system.
> > Add that in, and the cost of a $15000 system is
> > much worse - over 30,000 in a 25 year, 7% mortgage.
>
>
>

3025. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 14:45:07 UTC
From: John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com>
Message-ID: <l9sv70pfvtsaj74e1dbaspon34lv4eq7oc@4ax.com>
Source record: 26812
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Fri, 16 Apr 2004 08:19:10 GMT, Robert Baer
<robertbaer@earthlink.net> wrote:

>Paul Burridge wrote:
>>
>> On Wed, 14 Apr 2004 00:36:17 GMT, "Harold E. Johnson"
>> <W4ZCB@mchsi.com> wrote:
>>
>> >An 8 MHz filter doesn't have to be physically large Paul,
>>
>> Hi Q coils in that frequency range in compact sizes... they don't seem
>> to go together. :-(
>>
>> >and efficiency
>> >drops pretty fast (Think like a rock) as the multiplication factor goes up.
>> >Have you ever actually defined what it is you're trying to do? Some control
>> >thing in your 70 MHz band? Or real power for some application? Hard to hit a
>> >moving target. Or is that the idea?
>>
>> Yeah, moving target's good. Keep the discussion generalised and it
>> might help others as well. I'm not sure where the 70Mhz figure comes
>> from, but it's a good enough guess by whoever made it. However, the
>> final desired frequency in my particular case is in the region of
>> 40Mhz which will be achieved by mixing down with the output from
>> another oscillator and filtering.
>
> A high Q resonant circuit can be rather small.
> For example, i made a tunable LC with a Q approaching 1000, and it was
>not the size of a garbage can (resonant cavity); it was about 5 inches
>tall and about 3 inches in diameter.
> On one extreme, one uses standard LC parts and get fair Qs in small
>size.
> On the other extreme, one makes a ersonant cavity to get very high Qs
>at the expense of size.
> In between there is something that can be called either a "shielded
>inductor" or a "resonant cavity with slow wave structure".
> One takes an inductor and places it in the center of a metal cylinder;
>one end of the inductor attaches to the inner wall (makes electrical
>connection and acts as support).
> The capacitance to the walls (and added ends) is the other half. Move
>an end for fine tuning.
> Rather ingenious; ther was an IEE paper 20 years(??) ago covering the
>desigh equations.

> The terminology used was "Helical resonator".

Coaxial ceramic resonators are cool... they are small, extremely
stable, and have Qs in the thousands.

John

3026. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 15:31:21 UTC
From: Anthony Matonak <res04ijs@verizon.net>
Message-ID: <407FFC49.9060501@verizon.net>
Source record: 26813
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Watson A.Name - \"Watt Sun, the Dark Remover\" wrote:
> "Anthony Matonak" <res04ijs@verizon.net> wrote in message
>>You could chose to eliminate chicken as well as beef, eggs and dairy.
>>I'm no expert in either nutrition or food prices but I think you could
>
> [snip]
>
> The price penalty becomes even greater when you purchase food products
> that eliminate meat such as silk and soy bean and tofu meat substitutes.
> It's a matter of supply and demand; most people don't buy these things,
> so the prices are higher.

The price penalty is only on items that try to replace or substitute
for meat (and often failing miserably). If you simply purchase items
such as beans, rice, grains, nuts and so forth, as they exist in
nature (or at least, supermarket shelves) then their prices become very
low.

You can always find the most expensive or least energy efficient way
of doing something but that doesn't mean that is the only, or even the
most common, method in use.

Anthony

3027. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 15:39:37 UTC
From: Anthony Matonak <res04ijs@verizon.net>
Message-ID: <407FFE39.6070103@verizon.net>
Source record: 26814
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Watson A.Name - \"Watt Sun, the Dark Remover\" wrote:
...
> My apt. owner put solar water heater panels on the roof more than ten
> years ago, and I don't think they've been cost effective. The
> neighborhood vandals threw rocks at one and broke it, so they had to pur
> chicken wire over the panels to prevent damage. The cats used the foam
> pipe insulation to sharpen their claws, so it's gone for about two feet
> up from the roof. The controller and storage tanks are not working as
> they should, so I would guess that the system needs repair. All in all,
> even with the rebates, it wasn't as good as it was made out to be.
...

In the 80's there were a lot of government rebate programs to promote the use of solar water heaters. This gave rise to many installers who existed simply to exploit the rebates and as a result they installed shoddy equipment and gave buyers unrealistic expectations. Once the government rebates dried up these predatory companies disappeared and their warranties along with them. This is why there was such a glut of broken down solar water heaters and people completely dissatisfied with the entire idea. This doesn't mean that they can't be cost effective. I've seen many solar water heaters that have been in continuous use for 20+ years with only minimal maintenance and the owners of these appear to be satisfied.

Anthony

3028. Re: LCF Software Wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 15:56:56 UTC
From: Reed Park <reedpark@nbnet.nb.ca>
Message-ID: <40800227.90F1FC49@nbnet.nb.ca>
Source record: 26815

Howard wrote:

> Hello and thanks for taking the time to read this.
>
> I am seeking a piece of software I once used that calculates LCF in
> various combinations This software was DOS and is freeware.
>
> For the life of me I cannot remember that name of it.
>
> Does anyone know of freeware that does this, and where it may be
> found?
>
> Thanks es 73 de WA2AFD

Try the following. Great collection of some good software
from VE3ERP, and it's free.

http://www.cq-amateur-radio.com/HamCalcem.html

7 3
Reed

--

Looking for information on Marconi SMR-3 and
Northern Electric R8119A receivers of WW 2.

ARROW Research (Avro CF-105)
Reed Park
252 Gauvin Road
Dieppe, New Brunswick
Canada E1A1M1

Amateur Radio V E 1 N U
WW II, # 19 SET user
Paraset replica builder and owner of a real one.

3029. Wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 16:02:42 UTC
From: Carl Domanico <vze2686b@verizon.net>
Message-ID: <CsTfc.48$eK3.24@nwrdny01.gnilink.net>
Source record: 26816

Want To Buy a Collins 30L-1 Linear Amplifer.. Round Emblem...Condition:
Mint, Excellent, will consider very good...Reasonably Priced

Carl Domanico
N2MFW
718-331-7427

3030. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 16:19:33 UTC
From: mikea@mikea.ath.cx
Message-ID: <c5p12l$52n$1@puck.litech.org>
Source record: 26817
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

In <407FFE39.6070103@verizon.net> (rec.radio.amateur.homebrew), Anthony Matonak wrote:

> In the 80's there were a lot of government rebate programs to promote
> the use of solar water heaters. This gave rise to many installers who
> existed simply to exploit the rebates and as a result they installed
> shoddy equipment and gave buyers unrealistic expectations. Once the
> government rebates dried up these predatory companies disappeared
> and their warranties along with them. This is why there was such a glut
> of broken down solar water heaters and people completely dissatisfied
> with the entire idea. This doesn't mean that they can't be cost
> effective. I've seen many solar water heaters that have been in
> continuous use for 20+ years with only minimal maintenance and the
> owners of these appear to be satisfied.

In fact, we had one of these installed around 1980, just after the Feds started the rebate program and my late wife's dad died, leaving her a bunch'o'bucks. It worked _very_ well indeed until June 2002, when it died catastrophically, leaking water in a proprietary fitting, just after we got back from Canada. It gave yeoman service up to then, and if I could find someone with the parts, I'd put it back in service again. It was _really_ nice to have 300 gallons of hot water _and_ forced-air heating to all the rooms in the house. Now we're back to a floor furnace.

The only thing I had to do in all those 20+ years was install a switch to sense loss of water pressure and turn off the recirc pump for the silicone oil, so that it wouldn't overheat and decompose because it didn't see cool water in the heat exchanger. After a little bit of cut and try, the plumber and I got that working just fine.

Oh, and we did actually wear out (water flow around a bend in a tube finally wore through the tube wall) a heat exchanger, but that was replaced under warranty.

I miss it.

--
Mike Andrews
mikea@mikea.ath.cx
Tired old sysadmin

3031. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 18:02:13 UTC
From: Jan Panteltje <pNaonStpealmtje@yahoo.com>
Message-ID: <c5p70v$u56$1@news.wplus.net>
Source record: 26818
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On a sunny day (Fri, 16 Apr 2004 06:40:16 GMT) it happened
ehsjr@bellatlantic.net wrote in <407F7FE6.3D9FC215@bellatlantic.net>:

>ou also have to take into account
>the degradation of the system capacity over time.
That would be 80% of capacity I think.
And yes, you could take the kWh price of 25 years ago,
that of today, and draw a line, it will point up,
extrapolate to + 25 years from now ,and you have a value.
The other thing that will help is the inflation, you
can roughly say that money halves in value every 10 years.
This has 2 effects, now, if you did have a loan for the solar
cells, and you pay 2% of your income, in 10 years this will be
only .5 % and in 25 years the amount you have to pay will look
ridiculously low.
From this we can see that borrowing is not a bad idea perhaps.
Also that still leaves you with all the cash you can spend on
other things now.
JP

3032. Re: You are all welcome to take part in SPAT Design Challenge ...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 18:54:38 UTC
From: Roger and Ute Brown <rogerbrown@gci.net>
Message-ID: <1080eh5h2085acd@corp.supernews.com>
Source record: 26821

Don't be taken in by this challenge! Such equipment can only be seriously utilized by pirate broadcasters near our 40 meter band. Operating this equipment will be illegal and, as such, would serve no good purpose. Let them figure it out by them selves!
Roger, KL7Q

R_QRP <fmtx@euroseek.com> wrote in message news:ca3ae38d.0404160607.48d7953f@posting.google.com...
> You are all welcome to take part in SPAT Design Challenge for an
> Amplitude-Modulated Basic QRP Shortwave Transmitter:
> http://www.geocities.com/radio_qrp/spat.html
> SPAT = Simplest Practical Amplitude-Modulated Transmitter for the 40
> mb Short Wave band.
> This has nothing to do with the infamous "Grenade" transmitter!!

3033. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 19:10:18 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c5pb2q$6kt$1@titan.btinternet.com>
Source record: 26819
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

> Coaxial ceramic resonators are cool... they are small, extremely
> stable, and have Qs in the thousands.
>
How do you measure the Qs of resonators in the thousands?

3034. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 19:20:42 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404161120.13e2b4bb@posting.google.com>
Source record: 26820
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Robert Baer <robertbaer@earthlink.net> wrote in message
news:<407F96B1.A841EA2D@earthlink.net>...
...
> A high Q resonant circuit can be rather small.
> For example, i made a tunable LC with a Q approaching 1000, and it was
> not the size of a garbage can (resonant cavity); it was about 5 inches
> tall and about 3 inches in diameter.

Based on an earlier P.Burridge thread, I'd say that's NOT small for
him. Of course, you didn't mention the frequency (I'd guess around
10MHz), but in the earlier thread, I was suggesting that he use a coil
at 18MHz or so with a Qu around 100, and he didn't seem to like even
the rather small size that one could make such a coil. I did it on,
um either a .68" OD or .80" OD powdered iron toroid, and that was
apparently too big. I also suggested a multi-pole filter which could
give the same effective filtering, and could use three small SMT
inductors. I gathered even that was too big. And I suppose coaxial
ceramic resonators for one-off projects at 18MHz aren't very
practical...

> On one extreme, one uses standard LC parts and get fair Qs in small
> size.
> On the other extreme, one makes a ersonant cavity to get very high Qs
> at the expense of size.
> In between there is something that can be called either a "shielded
> inductor" or a "resonant cavity with slow wave structure".

There seems to be a popular misconception that a helical resonator
gives better Q than an unshielded coil and capacitor. One of the key
nice things about helical resonators is that they are well
shielded...there's extremely little external field. That lets you
stack several of them side-by-side, with appropriately chosen coupling
apertures between the cavities, to make a nice, compact multi-pole
filter. But let's not assign a quality that isn't there: the same
coil WITHOUT the shield will have a higher Qu, so long as it's not so
huge that radiation is a significant loss mechanism, and as Reg
suggests, that's BIG for most of the tanks we think about. In the
older editions of "Reference Data for Radio Engineers," e.g. the fifth
edition, there are some design nomographs for helical resonators in
the Transmission Lines chapter. They will give you the Qu. If you
find the Qu of the coil in air (see the same book, Fundamentals of
Networks chapter, or use Reg's coil program or WAIRCOIL), you'll see
that the coil's Qu is higher. And if you look also in the Fund. of
Networks chapter, you'll find a graph for the decrease of inductance

of a coil when shielded, and you'll find that that almost exactly accounts for the Q lowering: same effective series resistance, but lower inductance, gives lower Q. Is it significant? Well, I think for a typical helical resonator, it's a 15% to 25% lowering.

Mainly I want to dispell the notion that a helical resonator is something magic that _raises_ the Q of a given coil, because it's not. It does have some very nice properties, but that just isn't one of them.

Early helical resonator reference: W. W. Macalpine and R. O. Schildknecht, "Coaxial Resonators with Helical Inner Conductor," Proc. of the IRE, Dec. 1959 -- almost 45 years ago now.

Cheers,
Tom

3035. parts and tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 20:06:53 UTC
From: WB0CTE <letourneau@wiktel.com>
Message-ID: <x1Xfc.607$m3.26155@news7.onvoy.net>
Source record: 26822

email me for a list of parts, tubes and equiptment for sale. Trying to clean out the place. letourneau@wiktel.com

3036. Re: Need Hi-Z amplifier for RF-probe (Maxim?)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 21:48:36 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <q7mv70to9uj677jojei1666r1h01q2je1m@4ax.com>
Source record: 26823

On 15 Apr 2004 21:38:49 -0700, k7itm@aol.com (Tom Bruhns) wrote:

>Hi Jan-Martin,
>
>Doesn't seem like anyone has answered this--hope you're still
>monitoring it for followups.
>
>There was an article in the Nov 2001 "Electronics World" starting on
>page 842, "Active RF Scope Probe," using a Maxim MAX4005. It's a
>high-input-impedance unity-voltage-gain amplifier with a built-in 75
>ohm source resistor. The probe design puts a little attenuation ahead
>of that amplifier, probably mostly for protection in case you connect
>to too large a voltage, and there's 6dB loss in the termination on the
>far end of the transmission line; so the probe circuit adds a 10dB op
>amp gain stage. I haven't read all the details but believe it's
>designed for 100MHz bandwidth. He has it AC coupled, but it could
>probably be DC coupled if you wanted.
>
>Cheers,
>Tom
>

>> http://home.online.no/~la8ak/m2.htm

Tom,
thanks for reply.

I received a few replies replies via mail, but they seem to have misunderstood the points in some degree, one outlined a theoretical circuit which should cover up to 900MHz using general purpose devices and made no notes to whether it was an improvement over my suggestion or not.

Suppose your device could be what I was looking for and will check it out later. It is not really so imprortant which attenuation you get as long you know what you are doing. In the first case I need only 20MHz bandwidth, while 100MHz or more seems interesting for other later purposes like RF millivoltmeter. The first instrument is used with a selective voltmeter, which might be connected to converter for larger frequency range that 0.005-17.2MHz later.

I've already made one mV-meter using germanium diodes (AA119 or 1N270's) which covers up to 2GHz, but minimum reliable reading is for 10...30mV RMS, and an improvement here is very much desired.. The RF millivoltmeter is described as item 10 on the same page. A problem is that it was built 20 years ago, and the mechanical construction now

seem to cause some problems and a new meter seems to be required soon.

73
Jan-Martin

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

3037. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 22:51:21 UTC
From: Solar Guppy <solar-guppy@solar-guppy.com>
Message-ID: <JrZfc.28092$Lg.1145@fe07.usenetserver.com>
Source record: 26824
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

So now you saying solar thermal has no pay back ? ... please ... solar thermal is about 5x better than solar PV in payback times.

The cost is about 1700.00 (US) for a system that will replace about 90% of domestic hot-water needs , and in my last house , lowered my electric usage by about 45 dollars a month.

There are many web-references to the 3-4 year break even ... instead of picking on my grammar , spend some time to get your facts right and use Google for references instead of your obvious fact-less opinions of solar thermal and solar electric.

"Watson A.Name - "Watt Sun, the Dark Remover"" <NOSPAM@dslextreme.com> wrote in message news:107vrdtn5n34l85@corp.supernews.com...

SNIP

> My apt. owner put solar water heater panels on the roof more than ten
> years ago, and I don't think they've been cost effective. The
> neighborhood vandals threw rocks at one and broke it, so they had to pur
> chicken wire over the panels to prevent damage. The cats used the foam
> pipe insulation to sharpen their claws, so it's gone for about two feet
> up from the roof. The controller and storage tanks are not working as
> they should, so I would guess that the system needs repair. All in all,
> even with the rebates, it wasn't as good as it was made out to be.
>
> I think that the figures that you gave might be optimum, but not
> realistic, when other things are considered. Like dirt and snow can
> seriously reduce the solar output. So some maintenance has to be done.
> And there are other factors, intangibles, that have to be considered,
> such as breakdown on the electronics. When that happens, the owner may
> have to make a tough decision to spend a lot of money to repair, or just
> leave it unrepaired and disconnect it. Don't say that's not going to
> happen! Most of the solar heater panels I've seen are not working after
> a few years. It's a just matter of entropy. Things just get ignored
> and turn to dust, and no one bothers with them anymore.
>
> BTW, your followup is not easily readable, misuse of commas, etc. Needs
> work.
> [snip]
>

3038. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 23:02:07 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c5pop7csd1@newshost.mot.com>
Source record: 26825

"Bill Janssen" <billjNOTTHIS@ieee.org> wrote in message
news:8PEfc.1801$Ib4.921@news01.roc.ny...
> Steve Nosko wrote:
> >I was not referring to the outer reaches of the two large faces as in; is
> >the face flat or curved in some way.
> >
> I understood what you meant. Just never considered that important. Maybe
> that is something I missed.
> Bill K7NOM

Unfortunately, Dad went in the blink of an eye. I'm glad for him, but I
didn't have the chance to talk, ask questions or say goodby.

--
Steve N, K,9;d, c. i My email has no u's.

3039. Re: Book on Homebrew Radio -- Free!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 23:36:14 UTC
From: simplesimon@hotmail.com
Message-ID: <c5pqscjat1@newsg1.svr.pol.co.uk>
Source record: 26826

its in my favourites.

3040. Re: You are all welcome to take part in SPAT Design Challenge ...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-16 23:51:18 UTC
From: simplesimon@hotmail.com
Message-ID: <c5prj0$h2q$1@newsg2.svr.pol.co.uk>
Source record: 26827

Yes a pirate! SPAT is a bit to close to SPRAT
deffo a cheat.

3041. Re: questions about 433MHZ modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 00:09:11 UTC
From: Joe <nuisancewildlife@nospamearthlink.net>
Message-ID: <HA_fc.13328$A_4.3559@newsread1.news.pas.earthlink.net>
Source record: 26828

"OK1SIP" <remove_ok1sip@atlas.cz> wrote in message
news:5f5159fa.0404152255.25f3988a@posting.google.com...
> Hi Joe,
> the receiver is probably a superregen type. Superregens are very noisy
> with no carrier on their input. Superhet modules reduce the noise
> problems, but they are more expensive and complicated.
> I worked enough with 4046, but I have no link at hand. It comprises a
> VCO and two phase comparators - you use only one of them. What I
> remember:
> 1/ Set the tuning range of the VCO as necessary - not too wide, not
> too narrow. Two resistors and a capacitor affect both the the central
> frequency and the sweep. Check the tuning range with the loop open and
> a variable control voltage applied.
> 2/ I always used the phase comparator No.2. The comparator No.1 (a XOR
> gate in fact) usually did not give me satisfying results.
> 3/ The filter between the phase comparator output and the VCO control
> input is essential for the dynamics of the PLL. Do not underestimate
> its design.
> IMHO for your purpose you should set the central frequency to the
> frequency of the 555 at the transmitting side and a very narrow sweep.
> If the proper signal is received, the PLL locks, which is indicated on
> one of the 4046 pins. This is your "activated" signal. Otherwise the
> VCO runs freely and the loop stays unlocked.
>
> Ivan OK1SIP
>
>
>
>
Hello Ivan,

I was just going to use a bandpass filter, but I will probly play around
with the PLL, since I have never used them before. Thanks for the tips.

Joe
KB1KVI

3042. Re: questions about 433MHZ modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 00:15:40 UTC
From: Joe <nuisancewildlife@nospamearthlink.net>
Message-ID: <MG_fc.13333$A_4.2562@newsread1.news.pas.earthlink.net>
Source record: 26829

"The other John Smith" <jocjo-john@yooha.com> wrote in message
news:QOPfc.12630$k05.2114@newsread2.news.pas.earthlink.net...
>
> "Joe" <nuisancewildlife@nospamearthlink.net> wrote in message
> news:zxCfc.11902$A_4.11138@newsread1.news.pas.earthlink.net...
>
> > Thank you for the info. Today I connected the transmitter data pin to
my
> > square wave generator with a 1Khz square wave (at 3V peak) and I could
see
> > it on the receiver output pins, both the linear and digital pins on the
> > receiver output pretty much the same signal. The only thing I was
confused
> > about is that, when I first switch the receiver on, the digital output
is
> > quiet (it goes to 5volts at first and then drops to and stays at zero
> > volts). Once I transmit the square wave to it and turn the transmitter
> off,
> > the digital output is very noisy (low frequency, I think) and never
> settles
> > back to zero. The linear line comes up to about 2 volts on power up,
shows
> a
> > pretty good square wave when the transmitter is on and then goes back to
> the
> > 2 volt level when the transmitter is turned off and stays much quieter.
> >
> > I can probly filter out the noise on the digital line, or capacitively
> > couple the linear line to get rid of the dc, but I still need to study
> this
> > more. The range was amazing! I measured about 60 feet (~20meters) and
the
> > signal was still strong. This was with the receiver in a building and
the
> > transmitter outside. I can still get more range out of it I am sure, so
I
> > will be testing that also.
>
>
> Hi, Joe -
>
> I think the linear output is from the detector in the receiver while the
> digital output is following an amplifier with AGC (automatic gain
control).

> If so, then you may find that the linear output will decrease in amplitude
> with distance but the digital output will stay constant until the range is
> so great that the signal drops into the noise. Using the decoder on the
> digital output eliminates the noise you see when the transmitter is off.
>
> Sounds like a fun project.
>
> John

Hi John,

Yes, it is fun. Looks like I will be learning about PLLs too. By the decoder do you mean the holtek? I was not going to use the encoder and decoder, since this is not a really critical application. I was planning on generating a square wave with a 555 at the transmitter data pin and then when the receiver detects it, take a picture. Yes, I think you are right about the linear pin, because I noticed the magnitude of the received signal seemed to drop a little with distance, but the digital pin stayed strong the whole distance when I moved the transmitter from it. The linear pin seems to be much quieter tho.

I still haven't worked on this yet today, so off I go to work on it some more and maybe I can get a working circuit soon.

Regards,
Joe
KB1KVI

3043. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 00:44:16 UTC
From: John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com>
Message-ID: <hav080pion9ondouoh2mden1d3lekmfq2q@4ax.com>
Source record: 26830
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Fri, 16 Apr 2004 19:10:18 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@ZZZbtinternet.com> wrote:

>> Coaxial ceramic resonators are cool... they are small, extremely
>> stable, and have Qs in the thousands.
>>
>How do you measure the Qs of resonators in the thousands?
>

Well, all the usual methods: resonance width, phase shift, ringdown,
stuff like that. I work with gadgets with Qs over 1e9, and people
measure them without difficulty.

John

3044. Re: You are all welcome to take part in SPAT Design Challenge ...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 02:04:16 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c5q3b0$su5$1@freenet9.carleton.ca>
Source record: 26831

"Roger and Ute Brown" (rogerbrown@gci.net) writes:
> Don't be taken in by this challenge! Such equipment can only be seriously
> utilized by pirate broadcasters near our 40 meter band. Operating this
> equipment will be illegal and, as such, would serve no good purpose. Let
> them figure it out by them selves!
> Roger, KL7Q
>
That's fascinating.

I only sort of glanced at the original message, noticing it was
AM, but I was reading SPAT as SPRAT, and while I can't remember
what the latter stands for, I thought it was a ham QRP group.
From that perspective, the message almost seems misleading.
I wouldn't have entered, but I wouldn't have given a thought
to the post without your message.

Michael VE2BVW

> R_QRP <fmtx@euroseek.com> wrote in message
> news:ca3ae38d.0404160607.48d7953f@posting.google.com...
>> You are all welcome to take part in SPAT Design Challenge for an
>> Amplitude-Modulated Basic QRP Shortwave Transmitter:
>> http://www.geocities.com/radio_qrp/spat.html
>> SPAT = Simplest Practical Amplitude-Modulated Transmitter for the 40
>> mb Short Wave band.
>> This has nothing to do with the infamous "Grenade" transmitter!!
>
>

3045. Re: Digital cable boxes as parts sources?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 02:22:58 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <yr0gc.58309$Lh2.12968@bignews1.bellsouth.net>
Source record: 26832

Paul_Morphy wrote:
> "Batman" <kc8gpd@no.spam.hotmail.com> wrote in message
> news:h3efc.6794$l75.1142@newsread2.news.atl.earthlink.net...
>
>>where do you find used digital boxes for $10ea. You have peaked my
>
> interest.
>
> eBay, where else? :>
>
> Rev. "PM", ULC
>
>
Be carefull. You'll burn your fingers with those!

3046. Re: filter capacitor in series

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 02:30:32 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <aD0gc.24314$Yw5.14355@bignews4.bellsouth.net>
Source record: 26833

Bill Turner wrote:
> On Sun, 11 Apr 2004 05:25:02 GMT, ehsjr@bellatlantic.net wrote:
>
>
>>I'd use
>>2 51K 2 watt resistors in series across each cap, to
>>give a very good safety margin on the resistors' power
>>dissipation and voltage exposure.
>
>
> --
>
> Also, avoid carbon composition resistors. They are notorious for
> gradually changing their resistance over time. Metal oxide film (MOF)
> types are much more stable over the long run. Richard, AG6K, sells them
> pretty reasonable. See http://www.somis.org/
>
The time proven method uses wire wound power resistors, with somewhat
lower values (higher wattage). For 450 volt caps resistors in the 50k
range are common, this will require 5 watt resistors (use 10w to be
safe). The higher bleed current serves two purposes, it discharges the
capacitors when the power is shut off more quickly, and reduces the
peak voltage reached protecting the capacitors. High voltage capacitor
strings using higher value resistors can hold a charge for several
minutes, a hazard for the careless!

> Richard's resistors are 100K and are rated at three watts. With 416
> volts applied per your example, they dissipate 1.7 watts, which should
> be a sufficient safety factor. The truly paranoid may connect four of
> them in a series-parallel arrangement across each capacitor.
>
> --
> Bill, W6WRT
> QSLs via LoTW
>

3047. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 04:14:24 UTC
From: ehsjr@bellatlantic.net
Message-ID: <4080AF36.4AC5DB54@bellatlantic.net>
Source record: 26834
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Jan Panteltje wrote:
>
> On a sunny day (Fri, 16 Apr 2004 06:40:16 GMT) it happened
> ehsjr@bellatlantic.net wrote in <407F7FE6.3D9FC215@bellatlantic.net>:
>
> >ou also have to take into account
> >the degradation of the system capacity over time.
> That would be 80% of capacity I think.
> And yes, you could take the kWh price of 25 years ago,
> that of today, and draw a line, it will point up,
> extrapolate to + 25 years from now ,and you have a value.
> The other thing that will help is the inflation, you
> can roughly say that money halves in value every 10 years.
> This has 2 effects, now, if you did have a loan for the solar
> cells, and you pay 2% of your income, in 10 years this will be
> only .5 % and in 25 years the amount you have to pay will look
> ridiculously low.
> From this we can see that borrowing is not a bad idea perhaps.
> Also that still leaves you with all the cash you can spend on
> other things now.
> JP

Your figures are off, and are unrealistic. You said money
halves in value in ten years, yet you mention 2% today
and .5% ten years from now, a factor of 4, not 2.
And using the numbers: 2% of one's salary to pay off a $17K
mortgage over 25 years works out to an annual salary of
$72,000. Most people making that kind of money are at
the high end already, and won't see the same kind of
percentage increases that people starting out will see.
It is unrealistic to think that, on average, people making
$72,000 today will be making $144,000 ten years from now.
If they are already making $72,000, they are also likely
older, (maybe 60 as a guess) and won't live to see the
payback, if it does come.

What is needed to make solar economically viable for the
masses is a drastic reduction in the cost of solar - or
a huge price increase in the cost of utility provided
power. That does not mean that there are no individual
cases today where solar is attractive economically, nor
does it encompass those who can't connect to the grid.
But it's a non-starter for better than 99 percent of the
people who can connect to the grid. The number of

people who are grid connected and are economically ahead with solar is exceedingly small. Even Solar Guppy, who clearly has expertise in this area, posts a 16+ year payback period - and that's without considering mortgage, degradation, maintenance etc. over time.

Investing in solar today, with the concept of breaking even 34 years down the road, is an asinine financial move. Betting on an earlier computed break-even point due to rising energy cost is damn near a sure thing - but still an asinine financial move, unless you have some idea of when the break-even point will be. In most cases, when you run the numbers, you'd be better off playing black jack at the casino. At least there you have a close to 50% chance of winning. For most people who run the numbers, solar is clearly a no win situation.

I wish proponents of solar would be more like Solar Guppy, or the guy in california at the site I posted. They lay it out, based on actual measurements. The guy in California is WAY ahead of the game, because it would have cost him about $90,000 to connect to the grid. He itemizes his entire system - solar, wind, hydro - with the price of everything. Solar told us his system cost, capability and price per utility generated kWh, and provides good info on his site. If you haven't been to their sites, I recommend taking a look.

3048. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 04:29:39 UTC
From: Scott Stephens <scottxs@comcast.net>
Message-ID: <To2gc.158793$JO3.95607@attbi_s04>
Source record: 26835
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Robert Baer wrote:

> Paul Burridge wrote:
>
>>On Wed, 14 Apr 2004 00:36:17 GMT, "Harold E. Johnson"
>><W4ZCB@mchsi.com> wrote:
>>
>>
>>>An 8 MHz filter doesn't have to be physically large Paul,
>>
>>Hi Q coils in that frequency range in compact sizes... they don't seem
>>to go together. :-(

> A high Q resonant circuit can be rather small.
> For example, i made a tunable LC with a Q approaching 1000, and it was
> not the size of a garbage can (resonant cavity); it was about 5 inches
> tall and about 3 inches in diameter.

That doesn't sound very small.

> On one extreme, one uses standard LC parts and get fair Qs in small
> size.

You can also use positive feedback (negative resistance) to sharpen Q,
if you are somewhat careful or don't mind tweaking.

> Rather ingenious; ther was an IEE paper 20 years(??) ago covering the
> desigh equations.
> The terminology used was "Helical resonator".

The ARRL Handbook has/had a design table for them too.

--
Scott

****

DIY Piezo-Gyro, PCB Drill Bot & More Soon!

http://home.comcast.net/~scottxs/

****

3049. Re: Digital cable boxes as parts sources?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 05:02:58 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <6U2gc.39403$i74.957968@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26836

"Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:yr0gc.58309$Lh2.12968@bignews1.bellsouth.net...

> Be carefull. You'll burn your fingers with those!

Funny how they never have the remote controls. I haven't bought one yet. I'm lamely waiting for someone to tell me it's worthwhile to tear one apart. This must be the lingering effects of all those Lew McCoy articles I read. I see a TV, I want to gut it and build ham gear.

"PM"

3050. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 05:18:49 UTC
From: Mike Coslo <mcoslo@adelphia.net>
Message-ID: <M6udndlCsuGqIx3dRVn-hA@adelphia.com>
Source record: 26837

H. Peter Friedrichs wrote:

> Michael,
>
> I'm interested in "extreme" homebrew for its own sake. I simply like it.
>
> http://www.mindspring.com/~pfriedr/books/ioa/gallery/gallery.htm
> http://www.mindspring.com/~pfriedr/books/votc/gallery/gallery.htm

Very enjoyable Site, Peter!

- Mike KB3EIA -

3051. Re: You are all welcome to take part in SPAT Design Challenge ...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 06:16:21 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <1081itn7jshlf99@corp.supernews.com>
Source record: 26838

SPRAT is the magazine of the G-QRP club, an excellent publication of an outstanding club, in my opinion. As far as I know, it's not an acronym, but I'll try to remember to ask the club founder when I see him at Dayton next month.

Roy Lewallen, W7EL

Michael Black wrote:
>
> That's fascinating.
>
> I only sort of glanced at the original message, noticing it was
> AM, but I was reading SPAT as SPRAT, and while I can't remember
> what the latter stands for, I thought it was a ham QRP group.
> From that perspective, the message almost seems misleading.
> I wouldn't have entered, but I wouldn't have given a thought
> to the post without your message.
>
> Michael VE2BVW

3052. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 07:41:45 UTC
From: Robert Baer <robertbaer@earthlink.net>
Message-ID: <4080DF6E.A6F8A928@earthlink.net>
Source record: 26839
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Reg Edwards wrote:
>
> It may be of interest -
>
> Doubling the length and diameter of a solenoid and reducing the number of
> turns of thicker wire to maintain the same inductance, doubles the Q until
> radiation loss resistance begins to predominate.
>
> And it's a big coil for radiation resistance to predominate.
> ----
> Reg, G4FGQ

...and like i mentioned, put a (cylindrical) shield around it and you
still have a high Q and a lower frequency *due to the higher distributed
capacitance.
Alternately, use it as a slow wave structure in a (resonant)
cavity)...

(same difference)

3053. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 07:42:55 UTC
From: Robert Baer <robertbaer@earthlink.net>
Message-ID: <4080DFB5.392BA421@earthlink.net>
Source record: 26840
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Reg Edwards wrote:
>
> > Coaxial ceramic resonators are cool... they are small, extremely
> > stable, and have Qs in the thousands.
> >
> How do you measure the Qs of resonators in the thousands?

The three dog-bone method, perhaps?

3054. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 07:43:49 UTC
From: Robert Baer <robertbaer@earthlink.net>
Message-ID: <4080DFEB.5994F7C9@earthlink.net>
Source record: 26841
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

John Larkin wrote:
>
> On Fri, 16 Apr 2004 19:10:18 +0000 (UTC), "Reg Edwards"
> <g4fgq.regp@ZZZbtinternet.com> wrote:
>
> >> Coaxial ceramic resonators are cool... they are small, extremely
> >> stable, and have Qs in the thousands.
> >>
> >How do you measure the Qs of resonators in the thousands?
> >
>
> Well, all the usual methods: resonance width, phase shift, ringdown,
> stuff like that. I work with gadgets with Qs over 1e9, and people
> measure them without difficulty.
>
> John

Ringdown is the easist way when Qs are extremely high.

3055. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 07:49:45 UTC
From: Robert Baer <robertbaer@earthlink.net>
Message-ID: <4080E14E.A942C575@earthlink.net>
Source record: 26842
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Tom Bruhns wrote:
>
> Robert Baer <robertbaer@earthlink.net> wrote in message
news:<407F96B1.A841EA2D@earthlink.net>...
> ...
> > A high Q resonant circuit can be rather small.
> > For example, i made a tunable LC with a Q approaching 1000, and it was
> > not the size of a garbage can (resonant cavity); it was about 5 inches
> > tall and about 3 inches in diameter.
>
> Based on an earlier P.Burridge thread, I'd say that's NOT small for
> him. Of course, you didn't mention the frequency (I'd guess around
> 10MHz), but in the earlier thread, I was suggesting that he use a coil
> at 18MHz or so with a Qu around 100, and he didn't seem to like even
> the rather small size that one could make such a coil. I did it on,
> um either a .68" OD or .80" OD powdered iron toroid, and that was
> apparently too big. I also suggested a multi-pole filter which could
> give the same effective filtering, and could use three small SMT
> inductors. I gathered even that was too big. And I suppose coaxial
> ceramic resonators for one-off projects at 18MHz aren't very
> practical...
>
> > On one extreme, one uses standard LC parts and get fair Qs in small
> > size.
> > On the other extreme, one makes a ersonant cavity to get very high Qs
> > at the expense of size.
> > In between there is something that can be called either a "shielded
> > inductor" or a "resonant cavity with slow wave structure".
>
> There seems to be a popular misconception that a helical resonator
> gives better Q than an unshielded coil and capacitor. One of the key
> nice things about helical resonators is that they are well
> shielded...there's extremely little external field. That lets you
> stack several of them side-by-side, with appropriately chosen coupling
> apertures between the cavities, to make a nice, compact multi-pole
> filter. But let's not assign a quality that isn't there: the same
> coil WITHOUT the shield will have a higher Qu, so long as it's not so
> huge that radiation is a significant loss mechanism, and as Reg
> suggests, that's BIG for most of the tanks we think about. In the
> older editions of "Reference Data for Radio Engineers," e.g. the fifth
> edition, there are some design nomographs for helical resonators in
> the Transmission Lines chapter. They will give you the Qu. If you
> find the Qu of the coil in air (see the same book, Fundamentals of

> Networks chapter, or use Reg's coil program or WAIRCOIL), you'll see
> that the coil's Qu is higher. And if you look also in the Fund. of
> Networks chapter, you'll find a graph for the decrease of inductance
> of a coil when shielded, and you'll find that that almost exactly
> accounts for the Q lowering: same effective series resistance, but
> lower inductance, gives lower Q. Is it significant? Well, I think
> for a typical helical resonator, it's a 15% to 25% lowering.
>
> Mainly I want to dispell the notion that a helical resonator is
> something magic that _raises_ the Q of a given coil, because it's not.
> It does have some very nice properties, but that just isn't one of
> them.
>
> Early helical resonator reference: W. W. Macalpine and R. O.
> Schildknecht, "Coaxial Resonators with Helical Inner Conductor," Proc.
> of the IRE, Dec. 1959 -- almost 45 years ago now.
>
> Cheers,
> Tom

Yes, but the emphasis was on small size, and a helical resonator
allows a goodly shrinkage of volume wihout a corresponding loss large of
Q.
But if the frequency is low enough, the ferite core method, if
properly wound, then becomes a "preferred" solution for small size and
high Q.
Maybe his requirements are not too realistic?

3056. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 07:51:26 UTC
From: Robert Baer <robertbaer@earthlink.net>
Message-ID: <4080E1B4.D85561A7@earthlink.net>
Source record: 26843
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Scott Stephens wrote:
>
> Robert Baer wrote:
>
> > Paul Burridge wrote:
> >
> >>On Wed, 14 Apr 2004 00:36:17 GMT, "Harold E. Johnson"
> >><W4ZCB@mchsi.com> wrote:
> >>
> >>
> >>>An 8 MHz filter doesn't have to be physically large Paul,
> >>
> >>Hi Q coils in that frequency range in compact sizes... they don't seem
> >>to go together. :-(
>
> > A high Q resonant circuit can be rather small.
> > For example, i made a tunable LC with a Q approaching 1000, and it was
> > not the size of a garbage can (resonant cavity); it was about 5 inches
> > tall and about 3 inches in diameter.
>
> That doesn't sound very small.
>
> > On one extreme, one uses standard LC parts and get fair Qs in small
> > size.
>
> You can also use positive feedback (negative resistance) to sharpen Q,
> if you are somewhat careful or don't mind tweaking.
>
> > Rather ingenious; ther was an IEE paper 20 years(??) ago covering the
> > desigh equations.
> > The terminology used was "Helical resonator".
>
> The ARRL Handbook has/had a design table for them too.
>
> --
> Scott
>
> **********
>
> DIY Piezo-Gyro, PCB Drill Bot & More Soon!
>
> http://home.comcast.net/~scottxs/
>

> **********

A resonant cavity for the FM band would be roughly the size of a
garbage can (which i stated); 6 inches is slightly smaller, i think.

3057. HP680 Chart Recorder

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 08:32:59 UTC
From: Dick <dick@langwang.demon.co.uk>
Message-ID: <3WfhPkB7uOgAFwdx@langwang.demon.co.uk>
Source record: 26844
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Does anyone know of a web site where I could access a copy of a tech manual for this chart recorder, I've had a quick search but nothing obvious comes up ? I've saved a couple of units from being trashed, cleaned them up & got them working but they're a variant that uses an electrical contact type of pen. I'd like to convert this to an ink pen and have some ideas as to how I can do it but I'd also be interested in knowing the HP arrangement.

Particularly interested in knowing where HP mounted the ink reservoir, was it on the moving carriage that carried the pen or is it on the fixed body of the recorder ? Maybe someone has had experience of using this equipment and can describe the arrangement they saw when refilling the ink reservoir. Or did HP use disposable ink cartridges ?
--
Dick
GM0MNL

3058. Need replacement CRT for Tek 492 Spectrum Analyser

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 11:49:42 UTC
From: Tom <m3cbzATmapctDOTcom>
Message-ID: <408119cb$0$95318$65c69314@mercury.nildram.net>
Source record: 26845

The title says it all :). Need a replacement tube for a 492 as the existing one is breaking down. So fails after 30 minutes of use.

3059. Re: You are all welcome to take part in SPAT Design Challenge ...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 12:10:42 UTC
From: Sverre Holm <la3za.0junk4me@qsl.net>
Message-ID: <c5r6nr$b5$1@maud.ifi.uio.no>
Source record: 26846

> SPRAT is the magazine of the G-QRP club, an excellent publication of an
> outstanding club, in my opinion. As far as I know, it's not an acronym,

It means something like Small Power Radio Amateur Technology which I guess
more or less is equal to QRP?

--
Sverre Holm, LA3ZA
---
www.qsl.net/la3za

3060. Re: You are all welcome to take part in SPAT Design Challenge ...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 13:25:18 UTC
From: WA5OES <NOSPAM_winterbauer@indra.com>
Message-ID: <Xns94CE4B7C5E823winterbauerindracom@216.168.3.44>
Source record: 26747

"Sverre Holm" <la3za.0junk4me@qsl.net> wrote in
news:c5r6nr$b5$1@maud.ifi.uio.no:

>> SPRAT is the magazine of the G-QRP club, an excellent publication of
>> an outstanding club, in my opinion. As far as I know, it's not an
>> acronym,
>
> It means something like Small Power Radio Amateur Technology which I
> guess more or less is equal to QRP?
>
>

A sprat is also a small herring.

3061. Has QSL.net network problems ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 13:40:09 UTC
From: Hern&#65533;n S&#65533;nchez <hernan.sanchez@iname.com>
Message-ID: <c5rc3m$4qfoa$1@ID-169358.news.uni-berlin.de>
Source record: 26748

Hi.

Since some time ago I cannot reach qsl.net on the net. I used
http://visualroute.visualware.com/ to figure out what's happening and it
shows me:

"IP packets are being list past network 'UUNET Technologies, Inc. UUNET65'
at hop 8. VisualRoute cannot determine the next network at hop 9. Node
65.207.92.86 at hop 8 in network 'UUNET Technologies, Inc. UUNET65' reports
'The destination host is unreachable'".

It means is not my ISP problem, but a generic problem. Has anyone any idea
of what's happening ?

Thanks

Hern&#65533;n S&#65533;nchez

3062. Re: Digital cable boxes as parts sources?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 13:50:37 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c5rcnd$ae6$1@freenet9.carleton.ca>
Source record: 26751

"Paul_Morphy" (nopaul_morphy2@coolgoose.com) writes:
> "Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
> news:yr0gc.58309$Lh2.12968@bignews1.bellsouth.net...
>
>> Be carefull. You'll burn your fingers with those!
>
> Funny how they never have the remote controls. I haven't bought one yet. I'm
> lamely waiting for someone to tell me it's worthwhile to tear one apart.
> This must be the lingering effects of all those Lew McCoy articles I read. I
> see a TV, I want to gut it and build ham gear.
>
> "PM"
>
>

I have no idea what's in them, and not even a good idea of their
function (well obviously it's something to do with tv).

Assuming these are for use with cable, I suspect there is less of
interest in them than some other items, at least given the price.
Cable converters (ie they don't do descrambling but convert cable
channels down to where an old tv set getting channels 2 to 13 can
receive the channels) have a wideband converter, usually double
conversion, that have been used in some "spectrum analyzer" projects.
But I find those in the garbage (or did, maybe they have now become
too old).

VCRs have wideband tuners too, though the ones I've taken apart
tune in segments like tv tuners rather than all in one range like
the cable converters. VCRs are plentiful and free, and you can pull
pretty much all the plastic basic purpose transistors you need off
them. As long as it's older, then the components are not surface mount.
They are much cleaner than the TV sets that I noticed when I was a kid.
If I was starting out, I'd be pulling the resistors and capacitors off
the VCRs too.

I once found a satellite receiver waiting for the garbage outside
a repair place. Besides the nifty case, it came with a diode ring
mixer, I think with a known brand on it. I pulled some other things
off it, but it was less than I would have expected (though, I didn't
really have expectations).

Old cellphones, the big clunky kind, tend to have interesting parts,
and since we're talking old they are cheap since nobody wants them
and the parts are less integrated and often not surface mount. TCXO's,
FM-bandwidth crystal filters often in the "roofing filter" range, indeed

complete FM IF strips, UHF prescalers, NE570 companders or direct variants and if they are old enough, CPUs and their peripherals that are recognizable and reusable. I've bought old cellphones for as low as fifty cents, and have paid up to five dollars because I could expect a reasonable return.

What sort of parts are you looking for? That might help to solve whether something is worth actually paying for.

Michael VE2BVW

3063. Re: Digital cable boxes as parts sources?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 14:04:25 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c5rdh9$bv6$1@freenet9.carleton.ca>
Source record: 26752

Ken Scharf (wa2mzeNOTTHIS@bellsouth.net) writes:
>> This must be the lingering effects of all those Lew McCoy articles I read. I
>> see a TV, I want to gut it and build ham gear.
>
> As I kid I would explore the neighborhood on my bicycle on the days
> the trash went out looking for junk TV sets. I had a set of tools
> in my pockets to pull out the chassis and would lug them home to
> gut. A friend of mine who lived in a house instead of an apartment
> would save the chassis whole in the basement (which bugged the
> gas man who had to climb over a mountain of tv chassis to read
> the gas meter!).

I'm not a kid, but I still carry tools around. And I think there's
a much better selection and quality of electronic junk being tossed
than when I was a kid.

Back then, over thirty years ago, you'd be lucky to find tv sets
and AC/DC radios. And the heat from the tubes tended to collect
all kinds of junk from the air (or maybe it was mainly because people
tended to keep such things in use for so long) so they were terribly
messy. And of course, the components tended to be big and bulky, though
of course since it was in the late tube-era that's the sort of thing
needed for building anyway.

I was out somewhere yesterday, and came across a monitor that had
a bunch of BNC connectors on it. If I hadn't been trying to get somewhere
on time, I would have taken the time to get them off. As it was, there
was no easy way to get that assembly off, so I left them there. I did pull
two boards off, one digital, to strip down later.

Having the tools is great. You can be selective. When you start out,
most of such equipment can be useful, but as the decades drag on, it's
too much trouble to bring the whole thing home. With tools you can
get the equipment open and extract useful parts right on the spot.
So you can pull the variable capacitors off any radio you see. Or
pop open that computer to pull out any memory. I've been grabbing
switching supplies from computers, partly because they are easy to
extract, and originally because I thought I'd reuse them as power
supplies. But there are more than enough for that, so I've started
pulling the boards out of the boxes when I get home, and using
the boxes for other things.

Michael VE2BVW

3064. Re: Digital cable boxes as parts sources?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 14:17:48 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <g0bgc.40714$i74.1000815@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26753

"Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:Utagc.32930$ux4.10976@bignews5.bellsouth.net...
> > This must be the lingering effects of all those Lew McCoy articles I
read. I
> > see a TV, I want to gut it and build ham gear.
>
> As I kid I would explore the neighborhood on my bicycle on the days
> the trash went out looking for junk TV sets. I had a set of tools
> in my pockets to pull out the chassis and would lug them home to
> gut. A friend of mine who lived in a house instead of an apartment
> would save the chassis whole in the basement (which bugged the
> gas man who had to climb over a mountain of tv chassis to read
> the gas meter!).

Ahaha! I did the same thing. I had a basement full of CRTs. Finally came the day to discard them, just lined 'em out on the street on garbage day. I didn't bother to break the seals. I was looking out my bedroom window as the trash collector tossed the first one around the back edge of the truck. It blew up! Nice cloud of white phosphor. He treated the rest of them like nitroglycerin. My Elmer told me how to break the seals so that wouldn't happen again.

I still get a fair share of parts from salvaged gear.
http://tinyurl.com/34np2 It just doesn't feel like homebrew otherwise. None of the pictured items remains intact.

Doing a run on QRZ.com, I am wondering if you were at this free flea? I live up in Stuart but I made it to this one. Passed on Hollywood today to finish a project, but I'm going to be in Gainesville next weekend.

73,

"PM"

3065. Re: HP680 Chart Recorder

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 14:17:49 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <h0bgc.40715$i74.1000200@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26754
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Dick" <dick@langwang.demon.co.uk> wrote in message
news:3WfhPkB7uOgAFwdx@langwang.demon.co.uk...

> Particularly interested in knowing where HP mounted the ink
> reservoir, was it on the moving carriage that carried the pen or is it
> on the fixed body of the recorder ? Maybe someone has had experience of
> using this equipment and can describe the arrangement they saw when
> refilling the ink reservoir. Or did HP use disposable ink cartridges ?

FWIW, the HP plotters I used to see used short drafting pens with built-in
reservoirs. You might find those on eBay. The problem is the mass of the
pen, but if you aren't charting fast-changing data that may not be serious.
This eBay auction has a drawing of the pen I'm referring to:
http://tinyurl.com/yuxwq

73,

"PM"

3066. Re: Need Hi-Z amplifier for RF-probe (Maxim?)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 14:46:17 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <fkg280hufveajd3liuqikrrtlqposiddoj@4ax.com>
Source record: 26755

On 15 Apr 2004 21:38:49 -0700, k7itm@aol.com (Tom Bruhns) wrote:

>Hi Jan-Martin,
>
>Doesn't seem like anyone has answered this--hope you're still
>monitoring it for followups.
>
>There was an article in the Nov 2001 "Electronics World" starting on
>page 842, "Active RF Scope Probe," using a Maxim MAX4005. It's a
>high-input-impedance unity-voltage-gain amplifier with a built-in 75
>ohm source resistor. The probe design puts a little attenuation ahead
>of that amplifier, probably mostly for protection in case you connect
>to too large a voltage, and there's 6dB loss in the termination on the
>far end of the transmission line; so the probe circuit adds a 10dB op
>amp gain stage. I haven't read all the details but believe it's
>designed for 100MHz bandwidth. He has it AC coupled, but it could
>probably be DC coupled if you wanted.
>
>Cheers,
>Tom
>

>> http://home.online.no/~la8ak/m2.htm

Tom,
thanks for reply.

I received a few replies replies via mail, but they seem to have misunderstood the points in some degree, one outlined a theoretical circuit which should cover up to 900MHz using general purpose devices and made no notes to whether it was an improvement over my suggestion or not.

It seems your is the one I'd been looking for. It has 6dB loss, and when you add 4dB for protection it makes 10dB which is easy figure for measurements. It is not really so imprortant which attenuation you get as long you know what you are doing. In the first case I need only 20MHz bandwidth, while 100MHz or more seems interesting for other later purposes like RF millivoltmeter. The first instrument is used with a selective voltmeter, which might be connected to converter for larger frequency range that 0.005-17.2MHz later.

I've already made one mV-meter using germanium diodes (AA119 or 1N270's) which covers up to 2GHz, but minimum reliable reading is for 10...30mV RMS, and an improvement here is very much desired.. The RF millivoltmeter is described as item 10 on the same page. A problem is

that it was built 20 years ago, and the mechanical construction now
seem to cause some problems and a new meter seems to be required soon.

73
Jan-Martin

Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/

3067. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 15:46:59 UTC
From: James Meyer <jmeyer@nowhere.com>
Message-ID: <c2k28012vegrpa6a9h8eoqjhn237lfpdcg@4ax.com>
Source record: 26756
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Sat, 17 Apr 2004 07:43:49 GMT, Robert Baer <robertbaer@earthlink.net> posted this:

>John Larkin wrote:
>>
>>
>> Well, all the usual methods: resonance width, phase shift, ringdown,
>> stuff like that. I work with gadgets with Qs over 1e9, and people
>> measure them without difficulty.
>>
>> John
>
> Ringdown is the easist way when Qs are extremely high.

You must still account for the energy you extract from the circuit in order to measure the ringdown. Even the energy needed to drive a high impedance probe is significant when the Q gets high.

IOW, the Q without the probe will be higher than the Q when you insert the probe to measure the Q.

Jim

3068. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 16:26:15 UTC
From: John Woodgate <jmw@jmwa.demon.contraspam.yuk>
Message-ID: <o28$7QEnqVgAFwtT@jmwa.demon.co.uk>
Source record: 26757
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

I read in sci.electronics.design that James Meyer <jmeyer@nowhere.com>
wrote (in <c2k28012vegrpa6a9h8eoqjhn237lfpdcg@4ax.com>) about 'A neat
and compact way to generate RF harmonics...', on Sat, 17 Apr 2004:
> IOW, the Q without the probe will be higher than the Q when you insert
>the probe to measure the Q.

Use an inductive current pick-off. That how the Marconi Instruments 1245
series Q-meters work(ed).
--
Regards, John Woodgate, OOO - Own Opinions Only.
The good news is that nothing is compulsory.
The bad news is that everything is prohibited.
http://www.jmwa.demon.co.uk Also see http://www.isce.org.uk

3069. FS high level mixers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 16:58:49 UTC
From: James Skalski <jskalski@yahoo.com>
Message-ID: <40816281.7040001@yahoo.com>
Source record: 26758

I have some Minicircuit SBL1-H +17dBm mixers. They have the same pinout as the SBL-1 mixers. These are new. $5 each shipped in US.

Paypal OK.

Jim n2go

3070. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 17:01:14 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <f70HWKAaLWgAFw72@ddwyer.demon.co.uk>
Source record: 26762

In article <M6udndlCsuGqIx3dRVn-hA@adelphia.com>, Mike Coslo
<mcoslo@adelphia.net> writes
>H. Peter Friedrichs wrote:
>
>> Michael,
>>
>> I'm interested in "extreme" homebrew for its own sake. I simply like it.
>>
>> http://www.mindspring.com/~pfriedr/books/ioa/gallery/gallery.htm
>> http://www.mindspring.com/~pfriedr/books/votc/gallery/gallery.htm
>
>
> Very enjoyable Site, Peter!
>
>
> - Mike KB3EIA -
>
I was in the Xtal business for >20 years so can answer individual
questions.
WWII and before Xtals were flat plates and vibrated to the edges in "air
gap" holders.
after 1950s centre plated crystals were ideally dead at the edges.
If you want to lap frequencies up a VCO tuned comms receiver can pick up
the broad band noise generated and centered on the crystal frequency.
Above assume shear mode AT type or Z cut plates.

--
ddwyer

3071. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 17:04:36 UTC
From: John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com>
Message-ID: <0po2809iosroml2rpd59efc3s5eraqjbmt@4ax.com>
Source record: 26759
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Sat, 17 Apr 2004 15:46:59 GMT, James Meyer <jmeyer@nowhere.com>
wrote:

>On Sat, 17 Apr 2004 07:43:49 GMT, Robert Baer <robertbaer@earthlink.net> posted
>this:
>
>>John Larkin wrote:
>>>
>>>
>>> Well, all the usual methods: resonance width, phase shift, ringdown,
>>> stuff like that. I work with gadgets with Qs over 1e9, and people
>>> measure them without difficulty.
>>>
>>> John
>>
>> Ringdown is the easist way when Qs are extremely high.
>
> You must still account for the energy you extract from the circuit in
>order to measure the ringdown. Even the energy needed to drive a high impedance
>probe is significant when the Q gets high.
>
> IOW, the Q without the probe will be higher than the Q when you insert
>the probe to measure the Q.
>
>Jim
>

Of course, you can account for the probe loss when you do the math. Or
leave the probe disconnected during a ringdown, and add it after some
delay to see how much energy is left in the system.

John

3072. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 17:09:22 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404170909.18c1ce8a@posting.google.com>
Source record: 26760
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Robert Baer <robertbaer@earthlink.net> wrote in message
news:<4080E14E.A942C575@earthlink.net>...
...
> Yes, but the emphasis was on small size, and a helical resonator
> allows a goodly shrinkage of volume wihout a corresponding loss large of
> Q.

As compared with what? A given coil in a helical resonator will
result in lower Qu than that same coil unshielded and simply resonated
with a good capacitor.

...
> Maybe his requirements are not too realistic?

Seems to commonly be the case.

3073. Re: LCF Software Wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 17:27:35 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404170927.58fcb32f@posting.google.com>
Source record: 26761

BTW, I've found that a graph of L, C, F and X is very often more convenient and faster to use than a calculator, be it a general-purpose calculator or one specifically for L/C/F/X. Depending on the graph you use, it might well be accurate enough for engineering use...it's not difficult to read values to a very few percent, and you'll usually be hard pressed to find parts that meet that sort of tolerance and not require tuning to achieve the desired resonance anyway. The graphic presentation helps me visualize what's going on, just as a Smith chart helps me visualize the effects of components in a matching network, and that visualization is something I can't get from just numbers on a screen.

If you don't find such a graph, you can make your own from log-log graph paper. You then can put L and C on the x and y axes, and the lines of constant frequency and constant reactance become 45 degree diagonals; or you can put X and F on the axes and L and C become the diagonals. 3x3 decades is easy to use, if you are comfortable with mental scaling between pico, nano and micro. Or you can use 6x6 with lower resolution but less need to scale.

Cheers,
Tom

haf47@juno.com (Howard) wrote in message
news:<f03bf94f.0404141328.70b035c0@posting.google.com>...
> Hello and thanks for taking the time to read this.
>
> I am seeking a piece of software I once used that calculates LCF in
> various combinations This software was DOS and is freeware.
>
> For the life of me I cannot remember that name of it.
>
> Does anyone know of freeware that does this, and where it may be
> found?
>
> Thanks es 73 de WA2AFD

3074. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 19:05:08 UTC
From: James Meyer <jmeyer@nowhere.com>
Message-ID: <fqv280hpqh4rfh8faodllrk9sm30mo8ft5@4ax.com>
Source record: 26763
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Sat, 17 Apr 2004 17:26:15 +0100, John Woodgate
<jmw@jmwa.demon.contraspam.yuk> posted this:

>I read in sci.electronics.design that James Meyer <jmeyer@nowhere.com>
>wrote (in <c2k28012vegrpa6a9h8eoqjhn237lfpdcg@4ax.com>) about 'A neat
>and compact way to generate RF harmonics...', on Sat, 17 Apr 2004:
>> IOW, the Q without the probe will be higher than the Q when you insert
>>the probe to measure the Q.
>
>Use an inductive current pick-off. That how the Marconi Instruments 1245
>series Q-meters work(ed).

Nevertheless, *ANY* method used to probe the field associated with the
resonator will load the resonator and degrade the Q.

Jim

3075. Homebrew PTO/VFO question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 19:05:28 UTC
From: J Shrum <shrumj@madisontelco.com>
Message-ID: <VJ-dnbim_5lq4hzdRVn-vA@shawneelink.net>
Source record: 26764

I was curious if anyone has had any experience w/ homebrewing the PTO/VFO
from
http://www.qrpp-i.com/projects/ka8mav/Tiny-Tornado/PTO-VFO-R1a-schematic.gif
.

I am pretty new to homebrewing, and was wondering if anyone knew of any
problems w/ this design that I may watch for. I have read that VFO's can be
very tricky, but this one looks incredibly simple. I'm just looking for
anyway to get out from under the rock that I'm bound to.

Thanks for any input...

James Shrum - KC9FFX

3076. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 19:07:12 UTC
From: James Meyer <jmeyer@nowhere.com>
Message-ID: <1vv280peve74ug4sir4qsmg1fgtoi7k14u@4ax.com>
Source record: 26765
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Sat, 17 Apr 2004 10:04:36 -0700, John Larkin
<jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> posted this:

>On Sat, 17 Apr 2004 15:46:59 GMT, James Meyer <jmeyer@nowhere.com>
>wrote:
>
>> IOW, the Q without the probe will be higher than the Q when you insert
>>the probe to measure the Q.
>>
>>Jim
>>
>
>Of course, you can account for the probe loss when you do the math. Or
>leave the probe disconnected during a ringdown, and add it after some
>delay to see how much energy is left in the system.
>
>John

If you have to "do the math", you might as well just calculate the Q
from first principles and forget the "measurement".

Jim

3077. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 19:11:42 UTC
From: James Meyer <jmeyer@nowhere.com>
Message-ID: <l303805mkt65l91f0il6lh64pvcqo9n4lv@4ax.com>
Source record: 26766
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On 17 Apr 2004 10:09:22 -0700, k7itm@aol.com (Tom Bruhns) posted this:

>Robert Baer <robertbaer@earthlink.net> wrote in message
news:<4080E14E.A942C575@earthlink.net>...
>...
>> Yes, but the emphasis was on small size, and a helical resonator
>> allows a goodly shrinkage of volume wihout a corresponding loss large of
>> Q.
>
>As compared with what? A given coil in a helical resonator will
>result in lower Qu than that same coil unshielded and simply resonated
>with a good capacitor.
>
>
Not so. And others have pointed that out. If you take an unshielded
coil to it's ultimate configuration you are confronted with a resonant antenna
that is loaded by its radiation resistance and that results in a *lower* Q than
a properly shielded resonator.

Jim

3078. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 19:21:26 UTC
From: John Larkin <jjlarkin@highSNIPlandTHIStechPLEASEnology.com>
Message-ID: <5n0380h3mvk7ekv4odi2s4kqv8ad8pm79i@4ax.com>
Source record: 26767
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Sat, 17 Apr 2004 19:07:12 GMT, James Meyer <jmeyer@nowhere.com>
wrote:

>On Sat, 17 Apr 2004 10:04:36 -0700, John Larkin
><jjlarkin@highlandSNIPtechTHISnologyPLEASE.com> posted this:
>
>>On Sat, 17 Apr 2004 15:46:59 GMT, James Meyer <jmeyer@nowhere.com>
>>wrote:
>>
>>> IOW, the Q without the probe will be higher than the Q when you insert
>>>the probe to measure the Q.
>>>
>>>Jim
>>>
>>
>>Of course, you can account for the probe loss when you do the math. Or
>>leave the probe disconnected during a ringdown, and add it after some
>>delay to see how much energy is left in the system.
>>
>>John
>
> If you have to "do the math", you might as well just calculate the Q
>from first principles and forget the "measurement".
>
>Jim

How can you calculate Q from first principles? 3D EM simulation?
Quantum mechanics?

John

3079. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 19:22:03 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <10830uudtv4oo7b@corp.supernews.com>
Source record: 26768
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Ah, just the person I've been waiting for. How do you account for current bunching on the conductors (that is, non-uniform distribution of current around the conductors)? What reference, equation, or program do you use? Nearly all "first principle" calculations of Q I've seen grossly overestimate Q, and I believe the failure to take this into account is at least part of the reason. I haven't seen a decent analytical method of dealing with it, and an anxious to see how you do it.

Then there's surface corrosion and roughness, radiation, and coupling to nearby objects. How do you deal with those? Have you identified some of the other factors that often make a simplistic "first principle" calculation disagree so badly with carefully made measurements?

Roy Lewallen, W7EL

James Meyer wrote:
>
> If you have to "do the math", you might as well just calculate the Q
> from first principles and forget the "measurement".
>
> Jim
>

3080. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 20:05:34 UTC
From: John Woodgate <jmw@jmwa.demon.contraspam.yuk>
Message-ID: <prmvceFO4YgAFw8y@jmwa.demon.co.uk>
Source record: 26769
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

I read in sci.electronics.design that James Meyer <jmeyer@nowhere.com>
wrote (in <fqv280hpqh4rfh8faodllrk9sm30mo8ft5@4ax.com>) about 'A neat
and compact way to generate RF harmonics...', on Sat, 17 Apr 2004:
>On Sat, 17 Apr 2004 17:26:15 +0100, John Woodgate
><jmw@jmwa.demon.contraspam.yuk> posted this:
>
>>I read in sci.electronics.design that James Meyer <jmeyer@nowhere.com>
>>wrote (in <c2k28012vegrpa6a9h8eoqjhn237lfpdcg@4ax.com>) about 'A neat
>>and compact way to generate RF harmonics...', on Sat, 17 Apr 2004:
>>> IOW, the Q without the probe will be higher than the Q when you insert
>>>the probe to measure the Q.
>>
>>Use an inductive current pick-off. That how the Marconi Instruments 1245
>>series Q-meters work(ed).
>
> Nevertheless, *ANY* method used to probe the field associated with the
>resonator will load the resonator and degrade the Q.
>
IIRC, the Marconi unit used a 10 nH inductor (maybe less) made of a
short length of silver wire, gold-plated to eliminate sulfide attack.
The effect on Q would be minimal in the extreme.
--
Regards, John Woodgate, OOO - Own Opinions Only.
The good news is that nothing is compulsory.
The bad news is that everything is prohibited.
http://www.jmwa.demon.co.uk Also see http://www.isce.org.uk

3081. Re: Homebrew PTO/VFO question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 21:01:07 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <10836oglc30ssfa@corp.supernews.com>
Source record: 26771

J Shrum wrote:

> I was curious if anyone has had any experience w/ homebrewing the PTO/VFO
> from
> http://www.qrpp-i.com/projects/ka8mav/Tiny-Tornado/PTO-VFO-R1a-schematic.gif
> .
>
> I am pretty new to homebrewing, and was wondering if anyone knew of any
> problems w/ this design that I may watch for. I have read that VFO's can be
> very tricky, but this one looks incredibly simple. I'm just looking for
> anyway to get out from under the rock that I'm bound to.
>
> Thanks for any input...
>
> James Shrum - KC9FFX
>
>

It's not that they're tricky to look at -- it's that they're tricky to
get everything working right.

This looks like it's a basically good design. It's common-source, which
is a bit odd. There's no buffer indicated, which will be necessary.
Really what makes VFO construction difficult is getting the thing stable
with respect to nearly every effect in the known universe, and that has
more to do with component selection and construction methods than it
does with the schematic.

If I were going to recommend a VFO I'd recommend a series-tuned
colpitts. You can probably find one in the ARRL handbook and build
away. If the designs look complicated it's because to be useful a VFO
needs the oscillator itself, a buffer amp and usually a power amp. The
schematic you have leaves off the buffer and power amplifiers; by the
time you stick those on your schematic will be as complex as any other
VFO design you've seen.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

3082. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 21:06:36 UTC
From: Barry Lennox <pbarryplennoxp@operamail.com>
Message-ID: <3173809sd08up1tr7610b1up09rul6shon@4ax.com>
Source record: 26770
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Sat, 17 Apr 2004 17:26:15 +0100, John Woodgate
<jmw@jmwa.demon.contraspam.yuk> wrote:

>I read in sci.electronics.design that James Meyer <jmeyer@nowhere.com>
>wrote (in <c2k28012vegrpa6a9h8eoqjhn237lfpdcg@4ax.com>) about 'A neat
>and compact way to generate RF harmonics...', on Sat, 17 Apr 2004:
>> IOW, the Q without the probe will be higher than the Q when you insert
>>the probe to measure the Q.
>
>Use an inductive current pick-off. That how the Marconi Instruments 1245
>series Q-meters work(ed).

I can recall using one of those, some little time back. Anybody have
the schematic diagram for it?

Barry Lennox

3083. Re: Book on Homebrew Radio -- Free!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 21:29:15 UTC
From: John Miles <jmiles@pop.removethistomailme.net>
Message-ID: <MPG.1aea5c23be5338859896aa@news-central.giganews.com>
Source record: 26772

```
In article <97f305da.0404160529.41caa467@posting.google.com>,
n2cqr@clix.pt says...
> Frank Harris, K0IYE, has written a really wonderful book on
> homebrewing ham radio gear. "Crystal Sets to Sideband --
> A Guide to Building a Amateur Radio Station" will provide
> lots of ideas and inspiration to solder melters everywhere.
> I really enjoyed it.
>
> Frank has made it available free of charge for private,
> not-for-profit purposes. Download it free at
>
> http://www.qsl.net/k3pd/book.html
>
> Be sure to send feedback to Frank at Frwharris@aol.com
>
> 73 Bill M0HBR
>

Nice piece of work! Reminds me of the late Jim Fisk's writings.

-- jm

-----------------------------------------------------
http://www.qsl.net/ke5fx
Note: My E-mail address has been altered to avoid spam
-----------------------------------------------------
```

3084. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 23:12:09 UTC
From: Jan Panteltje <pNaonStpealmtje@yahoo.com>
Message-ID: <c5sdkc$10ql$1@news.f.de.plusline.net>
Source record: 26773
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On a sunny day (Sat, 17 Apr 2004 04:14:24 GMT) it happened
ehsjr@bellatlantic.net wrote in <4080AF36.4AC5DB54@bellatlantic.net>:

>
>
>Jan Panteltje wrote:
>>
>> On a sunny day (Fri, 16 Apr 2004 06:40:16 GMT) it happened
>> ehsjr@bellatlantic.net wrote in <407F7FE6.3D9FC215@bellatlantic.net>:
>>
>> >ou also have to take into account
>> >the degradation of the system capacity over time.
>> That would be 80% of capacity I think.
>> And yes, you could take the kWh price of 25 years ago,
>> that of today, and draw a line, it will point up,
>> extrapolate to + 25 years from now ,and you have a value.
>> The other thing that will help is the inflation, you
>> can roughly say that money halves in value every 10 years.
>> This has 2 effects, now, if you did have a loan for the solar
>> cells, and you pay 2% of your income, in 10 years this will be
>> only .5 % and in 25 years the amount you have to pay will look
>> ridiculously low.
>> From this we can see that borrowing is not a bad idea perhaps.
>> Also that still leaves you with all the cash you can spend on
>> other things now.
>> JP
>
>Your figures are off,
Of cause they are, it was late...

>and are unrealistic.
Not so sure about that, having lives to much more then 50
>You said money
>halves in value in ten years, yet you mention 2% today
>and .5% ten years from now, a factor of 4, not 2.
>And using the numbers: 2% of one's salary to pay off a $17K
>mortgage over 25 years works out to an annual salary of
>$72,000. Most people making that kind of money are at
>the high end already, and won't see the same kind of
>percentage increases that people starting out will see.
Well, the director of ING bank gave himself a 40% raise
form 100000 to 140000 Euro (multyiply a bit for dolars)
this year, IN ONE YEAR, because he said he really deserved it.

>It is unrealistic to think that, on average, people making
>$72,000 today will be making $144,000 ten years from now.
True, more like 310000

>If they are already making $72,000, they are also likely
>older, (maybe 60 as a guess) and won't live to see the
>payback, if it does come.
And usually they have option too.....

>What is needed to make solar economically viable for the
>masses is a drastic reduction in the cost of solar - or
>a huge price increase in the cost of utility provided
>power.
That last thing will never happen.
I agree the solar cells need to be mass-produced and then
will become cheaper.
Recent research now found a way to double the efficiency to
35 % or more, but these are not in production.

> That does not mean that there are no individual
>cases today where solar is attractive economically, nor
>does it encompass those who can't connect to the grid.
Here in teh Netherlands where i am, you could get the
solar installation almost for free, because of government grants,
so many people did it that the gov ran out of the allocated budget,
and is now drastically reducing subsidizing solar power.

>But it's a non-starter for better than 99 percent of the
>people who can connect to the grid. The number of
>people who are grid connected and are economically ahead
>with solar is exceedingly small. Even Solar Guppy, who
>clearly has expertise in this area, posts a 16+ year
>payback period - and that's without considering mortgage,
>degradation, maintenance etc. over time.
If you get it 4 free, payback starts immediatly.
Problem is that in teh old electricity meters the meter
would run backards, and you got a lot for a kWh into the grid.
Now the power companies fixed that by using electronic meters that
will not run backwars.. clever!, but you can become a 'certified
electricity supplier' or something (I am not, just what I did read),
for 250 Euro or so a year, and then ge t7 Eurocent for a kWh so no
good deal, only costs money.
The solution is IMO to ge tsome large lead acid batteries, keep thse
warm somehow (does not work if -10 C), and use those to cover night
and non-sunny times.
And disconnect from the grid altogether.
For sci.electronics.design, 25 old car batteries gives 300 V DC at
100 A/h, big H bridge and make a nice 50 Hz sine at 240 V..
Maybe I am dreaming.
Unfortunatly there is not a lot of sun here...

>Investing in solar today, with the concept of breaking
>even 34 years down the road, is an asinine financial

>move. Betting on an earlier computed break-even point due
Perhaps not.

>to rising energy cost is damn near a sure thing - but
>still an asinine financial move, unless you have some
>idea of when the break-even point will be. In most
>cases, when you run the numbers, you'd be better off
>playing black jack at the casino. At least there you have
>a close to 50% chance of winning. For most people who run
>the numbers, solar is clearly a no win situation.
I was for getting some RTGs... but the radiation....
These could both serve for heating and electricity generation
for 25 years.

>I wish proponents of solar would be more like Solar Guppy,
>or the guy in california at the site I posted. They lay
>it out, based on actual measurements. The guy in California
>is WAY ahead of the game, because it would have cost him
>about $90,000 to connect to the grid. He itemizes his
>entire system - solar, wind, hydro - with the price of
>everything. Solar told us his system cost, capability
>and price per utility generated kWh, and provides good
>info on his site. If you haven't been to their sites,
>I recommend taking a look.
I have been to the Guppy site...
I like real data.
Good stuff.
JP

3085. Re: Has QSL.net network problems ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 23:16:12 UTC
From: dplatt@radagast.org
Message-ID: <1083elsmc1qpkb1@corp.supernews.com>
Source record: 26774

In article <c5rc3m$4qfoa$1@ID-169358.news.uni-berlin.de>,
Hern&#65533;n S&#65533;nchez <hernan.sanchez@iname.com> wrote:

>"IP packets are being list past network 'UUNET Technologies, Inc. UUNET65'
>at hop 8. VisualRoute cannot determine the next network at hop 9. Node
>65.207.92.86 at hop 8 in network 'UUNET Technologies, Inc. UUNET65' reports
>'The destination host is unreachable'".
>
>It means is not my ISP problem, but a generic problem. Has anyone any idea
>of what's happening ?

According to some discussion on the linux-hams mailing list, QSL.NET
had a problem a short while ago - their system was being attacked by
"crackers" located somewhere in South America - Brazil, I believe. If
I understand the situation correctly, they were unable to get support
or assistance from ISP(s) from which the attacks were originating. As
a result, they have apparently started blocking inbound TCP/IP traffic
to their site from a significant portion of South America.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

3086. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 23:21:31 UTC
From: Jim Thompson <thegreatone@example.com>
Message-ID: <cme3809820k7s4sr1ipg3is6al0sg9nr9i@4ax.com>
Source record: 26775
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On Sat, 17 Apr 2004 23:12:09 GMT, Jan Panteltje
<pNaonStpealmtje@yahoo.com> wrote:

[snip]
>> That does not mean that there are no individual
>>cases today where solar is attractive economically, nor
>>does it encompass those who can't connect to the grid.
>Here in teh Netherlands where i am, you could get the
>solar installation almost for free, because of government grants,
>so many people did it that the gov ran out of the allocated budget,
>and is now drastically reducing subsidizing solar power.

Arizona is presently *increasing* their tax credits for solar.

>
>>But it's a non-starter for better than 99 percent of the
>>people who can connect to the grid. The number of
>>people who are grid connected and are economically ahead
>>with solar is exceedingly small. Even Solar Guppy, who
>>clearly has expertise in this area, posts a 16+ year
>>payback period - and that's without considering mortgage,
>>degradation, maintenance etc. over time.
>If you get it 4 free, payback starts immediatly.
>Problem is that in teh old electricity meters the meter
>would run backards, and you got a lot for a kWh into the grid.
>Now the power companies fixed that by using electronic meters that
>will not run backwars.. clever!, but you can become a 'certified
>electricity supplier' or something (I am not, just what I did read),
>for 250 Euro or so a year, and then ge t7 Eurocent for a kWh so no
>good deal, only costs money.

[snip]

Sourcing INTO the power grid is also supported in Arizona. Apparently
there are a few customers here who produce more than their own
consumption and get PAID every month. (Not difficult at all if you
own at least an acre of property.)

...Jim Thompson
--
James E.Thompson, P.E.	mens
Analog Innovations, Inc.	et
Analog/Mixed-Signal ASIC's and Discrete Systems	manus
Phoenix, Arizona Voice:(480)460-2350	
E-mail Address at Website Fax:(480)460-2142	Brass Rat

| http://www.analog-innovations.com | 1962 |

I love to cook with wine. Sometimes I even put it in the food.

3087. Re: Has QSL.net network problems ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 23:31:56 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <Qoagc.58516$Lh2.5049@bignews1.bellsouth.net>
Source record: 26749

Hernï¿½n Sï¿½nchez wrote:
> Hi.
>
> Since some time ago I cannot reach qsl.net on the net. I used
> http://visualroute.visualware.com/ to figure out what's happening and it
> shows me:
>
> "IP packets are being list past network 'UUNET Technologies, Inc. UUNET65'
> at hop 8. VisualRoute cannot determine the next network at hop 9. Node
> 65.207.92.86 at hop 8 in network 'UUNET Technologies, Inc. UUNET65' reports
> 'The destination host is unreachable'".
>
> It means is not my ISP problem, but a generic problem. Has anyone any idea
> of what's happening ?
>
> Thanks
>
> Hernï¿½n Sï¿½nchez
>
>
I was able to get to QSL.NET last night. At least to a web
site hosted there.

3088. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 23:32:21 UTC
From: Bill Janssen <billjNOTTHIS@ieee.org>
Message-ID: <98jgc.1784$Ba7.388@news02.roc.ny>
Source record: 26776

ddwyer wrote:

>In article <M6udndlCsuGqIx3dRVn-hA@adelphia.com>, Mike Coslo
><mcoslo@adelphia.net> writes
>
>
>>H. Peter Friedrichs wrote:
>>
>>
>>
>>>Michael,
>>>
>>>I'm interested in "extreme" homebrew for its own sake. I simply like it.
>>>
>>>http://www.mindspring.com/~pfriedr/books/ioa/gallery/gallery.htm
>>>http://www.mindspring.com/~pfriedr/books/votc/gallery/gallery.htm
>>>
>>>
>> Very enjoyable Site, Peter!
>>
>>
>> - Mike KB3EIA -
>>
>>
>>
>I was in the Xtal business for >20 years so can answer individual
>questions.
>WWII and before Xtals were flat plates and vibrated to the edges in "air
>gap" holders.
>after 1950s centre plated crystals were ideally dead at the edges.
>If you want to lap frequencies up a VCO tuned comms receiver can pick up
>the broad band noise generated and centered on the crystal frequency.
>Above assume shear mode AT type or Z cut plates.
>
>
>
The Crystal grinding shop in the Washington DC Navy Yard (1947) had a
National HRO receiver
connected to the rough grinding machine. They picked up the noise to
tell how near to the finished
frequency they were. They then went to hand grinding to finish.

I have a chunk of Quartz from that shop.

Bill K7NOM

3089. Re: Digital cable boxes as parts sources?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 23:36:19 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <Utagc.32930$ux4.10976@bignews5.bellsouth.net>
Source record: 26750

> This must be the lingering effects of all those Lew McCoy articles I read. I
> see a TV, I want to gut it and build ham gear.

As I kid I would explore the neighborhood on my bicycle on the days
the trash went out looking for junk TV sets. I had a set of tools
in my pockets to pull out the chassis and would lug them home to
gut. A friend of mine who lived in a house instead of an apartment
would save the chassis whole in the basement (which bugged the
gas man who had to climb over a mountain of tv chassis to read
the gas meter!).

3090. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 23:48:01 UTC
From: James Meyer <jmeyer@nowhere.com>
Message-ID: <d0g3805nia0rp62o224bt0du649b193cv4@4ax.com>
Source record: 26777
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Sat, 17 Apr 2004 12:22:03 -0700, Roy Lewallen <w7el@eznec.com> posted this:

>Ah, just the person I've been waiting for. How do you account for
>current bunching on the conductors (that is, non-uniform distribution of
>current around the conductors)? What reference, equation, or program do
>you use? Nearly all "first principle" calculations of Q I've seen
>grossly overestimate Q, and I believe the failure to take this into
>account is at least part of the reason. I haven't seen a decent
>analytical method of dealing with it, and an anxious to see how you do it.
>
>Then there's surface corrosion and roughness, radiation, and coupling to
>nearby objects. How do you deal with those? Have you identified some of
>the other factors that often make a simplistic "first principle"
>calculation disagree so badly with carefully made measurements?
>
>Roy Lewallen, W7EL
>
>James Meyer wrote:
>>
>> If you have to "do the math", you might as well just calculate the Q
>> from first principles and forget the "measurement".
>>
>> Jim
>>

I was responding to a suggestion that one could do the math to calculate
what the Q would have been if you hadn't tried to measure it. I was pointing
out that if you could do that math, and get it correct, that you could do the
whole exercise with math and forget measuring anything.

And how do you know for sure that calculations overestimate Q when
measuring Q to verify the calculations disturbs the very thing you're measuring?

An engineer knows when to say "close enough". A mathematician is never
satisfied.

Jim

3091. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-17 23:53:03 UTC
From: James Meyer <jmeyer@nowhere.com>
Message-ID: <shg380lhj86nm7mg11n35q45kq2kvci3ep@4ax.com>
Source record: 26778
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Sat, 17 Apr 2004 21:05:34 +0100, John Woodgate
<jmw@jmwa.demon.contraspam.yuk> posted this:

>I read in sci.electronics.design that James Meyer <jmeyer@nowhere.com>
>wrote (in <fqv280hpqh4rfh8faodllrk9sm30mo8ft5@4ax.com>) about 'A neat
>and compact way to generate RF harmonics...', on Sat, 17 Apr 2004:
>>On Sat, 17 Apr 2004 17:26:15 +0100, John Woodgate
>><jmw@jmwa.demon.contraspam.yuk> posted this:
>>
>>>I read in sci.electronics.design that James Meyer <jmeyer@nowhere.com>
>>>wrote (in <c2k28012vegrpa6a9h8eoqjhn237lfpdcg@4ax.com>) about 'A neat
>>>and compact way to generate RF harmonics...', on Sat, 17 Apr 2004:
>>>> IOW, the Q without the probe will be higher than the Q when you insert
>>>>the probe to measure the Q.
>>>
>>>Use an inductive current pick-off. That how the Marconi Instruments 1245
>>>series Q-meters work(ed).
>>
>> Nevertheless, *ANY* method used to probe the field associated with the
>>resonator will load the resonator and degrade the Q.
>>
>IIRC, the Marconi unit used a 10 nH inductor (maybe less) made of a
>short length of silver wire, gold-plated to eliminate sulfide attack.
>The effect on Q would be minimal in the extreme.

But what about the energy extracted from the probe to make the
measurement? Any load on the probe is transformed into a load on the resonator.
Compensating for that load requires a very small number be divided by another
very small number. Any error in either number makes a much larger error in the
result of the calculation.

Jim

3092. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 00:08:04 UTC
From: Newsgroups <f.dinger@ntlworld.com>
Message-ID: <hQjgc.160$Jc5.69@newsfe1-win>
Source record: 26779
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

> > You've asked for a module that puts out 6-9 volts @ 100 mA. A more
> > accurate description of a solar panel would be that it puts out 100 mA
> > at 6-9 volts.
>
> Also the currewnt outputdepends somewhat on the latitude you're at. You
> won't get all that current at the arctic circle.
==========
As a rule of thumb , a starting angle (from horizontal) for setting up a
solar panel is Degrees Latitude plus 10 degrees.
My QTH is at 57 degrees north ,so I have initially set up the 2 panels
(each fitted at ground level on an adjustable hinged wooden frame) at
approx 67 degrees. , pointing due south ,which is about optimal (not having
a tracking system)
I use 2 make: Unisolar ,64Wp panels which have a non or low reflecting
surface made of a polymer (no glass).
Rated output per panel 3.88 Amperes at 16.5 volts ; short circuit current
6.3 Amperes.
Charging 12 V Lead -Acid batteries to 14.4 V , voltage limited by a home
made shunt controller .
System includes a 150 Watts wind generator , to support system during windy
(and usually sunless) periods
Purpose : Amateur Radio station with peripherals including 12 V halogen
bulbs desk lighting.

Frank GM0CSZ / KN6WH

3093. Belden 9907

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 00:23:17 UTC
From: moparmedic101@aol.com
Message-ID: <20040417202317.08932.00000056@mb-m14.aol.com>
Source record: 26780

I'm wondering if anyone can help me with this question, I'm getting ready to put new coax on my mobile system. I have 950 feet of Belden 9907 coax. It's 50
Ohm, low loss ethernet coax. Can It handle 75 watts from my Icom IC V-8000? Or should I opt for standard Mini 8U coax? Thanks for the feedback.
Mike
KC8OIT

3094. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 00:35:15 UTC
From: Jan Panteltje <pNaonStpealmtje@yahoo.com>
Message-ID: <c5sig8$14k3$1@news.f.de.plusline.net>
Source record: 26781
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On a sunny day (Sun, 18 Apr 2004 01:08:04 +0100) it happened "Newsgroups"
<f.dinger@ntlworld.com> wrote in <hQjgc.160$Jc5.69@newsfe1-win>:

>Charging 12 V Lead -Acid batteries to 14.4 V , voltage limited by a home
>made shunt controller .
>System includes a 150 Watts wind generator , to support system during windy
>(and usually sunless) periods
Now a wind generator would be cool, there are many windmils of huge size here,
one next to my house (100m or so), a BIG one that replaced 5 smaller ones...
It is on the coast, and it is always windy here...
How big is that thing?
JP

3095. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 00:45:00 UTC
From: Jim Thompson <thegreatone@example.com>
Message-ID: <epj380tefb05kspk05k75h34bjeio7k46e@4ax.com>
Source record: 26782
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On Sun, 18 Apr 2004 00:35:15 GMT, Jan Panteltje
<pNaonStpealmtje@yahoo.com> wrote:

>On a sunny day (Sun, 18 Apr 2004 01:08:04 +0100) it happened "Newsgroups"
><f.dinger@ntlworld.com> wrote in <hQjgc.160$Jc5.69@newsfe1-win>:
>
>>Charging 12 V Lead -Acid batteries to 14.4 V , voltage limited by a home
>>made shunt controller .
>>System includes a 150 Watts wind generator , to support system during windy
>>(and usually sunless) periods
>Now a wind generator would be cool, there are many windmils of huge size here,
>one next to my house (100m or so), a BIG one that replaced 5 smaller ones...
>It is on the coast, and it is always windy here...
>How big is that thing?
>JP

Have you seen the windmill "farm" west of Indio, California (on I10) ?

HUNDREDS of large windmill AC generators.

...Jim Thompson
--
James E.Thompson, P.E.	mens
Analog Innovations, Inc.	et
Analog/Mixed-Signal ASIC's and Discrete Systems	manus
Phoenix, Arizona Voice:(480)460-2350	
E-mail Address at Website Fax:(480)460-2142	Brass Rat
http://www.analog-innovations.com	1962

I love to cook with wine. Sometimes I even put it in the food.

3096. Re: Belden 9907

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 01:05:17 UTC
From: Jeff Spidle <"j spidle comcast net">
Message-ID: <6uednaeDNa7ASRzdRVn-ug@comcast.com>
Source record: 26783

From the Belden site.

899907 which is 9907 will handle from

4500W at 2Mhz
260W at 1Ghz

So yes, you have 950 ft of RG-58 size coax. See the Belden site for more info on the losses at specific frequencies.

Jeff, KC9EII
"MOPARMEDIC101" <moparmedic101@aol.com> wrote in message news:20040417202317.08932.00000056@mb-m14.aol.com...
> I'm wondering if anyone can help me with this question, I'm getting ready to
> put new coax on my mobile system. I have 950 feet of Belden 9907 coax. It's
> 50
> Ohm, low loss ethernet coax. Can It handle 75 watts from my Icom IC V-8000?
> Or should I opt for standard Mini 8U coax? Thanks for the feedback.
> Mike
> KC8OIT

3097. Re: Belden 9907

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 01:47:09 UTC
From: moparmedic101@aol.com
Message-ID: <20040417214709.00185.00000080@mb-m14.aol.com>
Source record: 26784

Thank you for your input, I've got a brand new rig on the way and my old 5/8 wave mount has coax chafed to the point of braids of shielding showing. I thought the 9907 would work, but wanted more opinions before I burnt up a brand new rig to High SWR. Once again Thanks!
Mike
KC8OIT

3098. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 01:56:14 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <1083o1vg3v9p4d1@corp.supernews.com>
Source record: 26785
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

James Meyer wrote:
> . . .
> And how do you know for sure that calculations overestimate Q when
> measuring Q to verify the calculations disturbs the very thing you're measuring?
>
> An engineer knows when to say "close enough". A mathematician is never
> satisfied.
>

I've measured quite a number of inductors both with a homebrew setup, in which I account for the losses in the input and output networks, and with an HP Q meter of specified accuracy. With simple input and output networks consisting of a small series C and shunt R, the effect on Q is predictable and easy to calculate. Results from the two methods agree quite closely, even though they use somewhat different methods to arrive at the Q, giving a fair amount of confidence in both results. And both disagree quite dramatically in some cases to Q calculated simply from theoretical calculations which include only conductor resistance (including skin effect, of course), inductance, and shunt capacitance. This is with inductors of only moderate Q -- calculation of very high Q inductors, which is being discussed here, would require more attention to second order effects -- as would measurement.

Thanks for the profound observation about mathematicians and engineers. In which category does one put a person who's satisfied with calculations made without thinking about, caring about, or considering the errors caused by ignoring fundamental effects? Certainly not an engineer as I use the term.

Roy Lewallen, W7EL

3099. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 02:11:48 UTC
From: "Watson A.Name - \"Watt Sun, the Dark Remover\"" <NOSPAM@dslextreme.com>
Message-ID: <1083ovh1aaq6u4f@corp.supernews.com>
Source record: 26786
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Jan Panteltje" <pNaonStpealmtje@yahoo.com> wrote in message
news:c5mqgb$23pc$1@news.wplus.net...
> On a sunny day (Thu, 15 Apr 2004 05:57:18 GMT) it happened
> ehsjr@bellatlantic.net wrote in <407E2458.C40B070D@bellatlantic.net>:
> >A guy in Florida quoted 48 years pay back time. I ran
> >the numbers for my home - over 40 years, and I pay 13
> >cents per kwh. A 2 kW system costs $15000. Assuming
> >an average of 8 hours per day of 2kW per hour, that
> >solar system would give me 16 kWh. I pay 16*.13 or
> >$2.08 for 16 kWh. Works out to 19+ years for payback,
> >if you don't count on mortgage payments for the system.
> >Add that in, and the cost of a $15000 system is
> >much worse - over 30,000 in a 25 year, 7% mortgage.
> You have to take into account that the cost of a kWh from
> the grid in 25 years will be a LOT higher too, if there
> still is a grid during and after WW3 that is.
> JP

I don't blame you for being paranoid about WW3, if you're from Holland.
History has treated those countries poorly during the last WWs. But
then, who cares if there's a WW3? I'm more concerned about the next big
earthquake. Some scientists are predicting a big 6.something earthquake
in the Southern Calif. desert before Sept. I hope so, 'cause some of
these immigrants might consider going back to their point of
origination.

3100. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 02:16:32 UTC
From: "Watson A.Name - \"Watt Sun, the Dark Remover\"" <NOSPAM@dslextreme.com>
Message-ID: <1083p8f4c50lu58@corp.supernews.com>
Source record: 26787
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Anthony Matonak" <res04ijs@verizon.net> wrote in message
news:407FFC49.9060501@verizon.net...
> Watson A.Name - \"Watt Sun, the Dark Remover\" wrote:
> > "Anthony Matonak" <res04ijs@verizon.net> wrote in message
> >>You could chose to eliminate chicken as well as beef, eggs and
dairy.
> >>I'm no expert in either nutrition or food prices but I think you
could
> >
> > [snip]
> >
> > The price penalty becomes even greater when you purchase food
products
> > that eliminate meat such as silk and soy bean and tofu meat
substitutes.
> > It's a matter of supply and demand; most people don't buy these
things,
> > so the prices are higher.
>
> The price penalty is only on items that try to replace or substitute
> for meat (and often failing miserably). If you simply purchase items
> such as beans, rice, grains, nuts and so forth, as they exist in
> nature (or at least, supermarket shelves) then their prices become
very
> low.

Last I checked, nuts were more expensive than some meats. And most
people haven't got a clue as to how to eat a meat-free diet and get
proper nutrition. That's the problem.

[snip]
> Anthony
>

3101. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 02:20:58 UTC
From: "Watson A.Name - \"Watt Sun, the Dark Remover\"" <NOSPAM@dslextreme.com>
Message-ID: <1083pgofe2b4j35@corp.supernews.com>
Source record: 26788
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Jan Panteltje" <pNaonStpealmtje@yahoo.com> wrote in message
news:c5p70v$u56$1@news.wplus.net...
> On a sunny day (Fri, 16 Apr 2004 06:40:16 GMT) it happened
> ehsjr@bellatlantic.net wrote in <407F7FE6.3D9FC215@bellatlantic.net>:
>
[snip]

> From this we can see that borrowing is not a bad idea perhaps.
> Also that still leaves you with all the cash you can spend on
> other things now.

Real good concept: mortgage your future.

> JP

3102. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 02:25:44 UTC
From: "Watson A.Name - \"Watt Sun, the Dark Remover\"" <NOSPAM@dslextreme.com>
Message-ID: <1083ppno33g9p31@corp.supernews.com>
Source record: 26789
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Solar Guppy" <solar-guppy@solar-guppy.com> wrote in message
news:JrZfc.28092$Lg.1145@fe07.usenetserver.com...
> So now you saying solar thermal has no pay back ? ... please ... solar
> thermal is about 5x better than solar PV in payback times.
>
> The cost is about 1700.00 (US) for a system that will replace about
90% of
> domestic hot-water needs , and in my last house , lowered my electric
usage
> by about 45 dollars a month.
>
> There are many web-references to the 3-4 year break even ... instead
of
> picking on my grammar , spend some time to get your facts right and
use
> Google for references instead of your obvious fact-less opinions of
solar
> thermal and solar electric.

> "Watson A.Name - "Watt Sun, the Dark Remover"" <NOSPAM@dslextreme.com>
wrote
> in message news:107vrdtn5n34l85@corp.supernews.com...
>
> SNIP
>
> > My apt. owner put solar water heater panels on the roof more than
ten
> > years ago, and I don't think they've been cost effective. The
> > neighborhood vandals threw rocks at one and broke it, so they had to
pur
> > chicken wire over the panels to prevent damage. The cats used the
foam
> > pipe insulation to sharpen their claws, so it's gone for about two
feet
> > up from the roof. The controller and storage tanks are not working
as
> > they should, so I would guess that the system needs repair. All in
all,
> > even with the rebates, it wasn't as good as it was made out to be.
> >
> > I think that the figures that you gave might be optimum, but not
> > realistic, when other things are considered. Like dirt and snow can
> > seriously reduce the solar output. So some maintenance has to be

done.
> > And there are other factors, intangibles, that have to be
considered,
> > such as breakdown on the electronics. When that happens, the owner
may
> > have to make a tough decision to spend a lot of money to repair, or
just
> > leave it unrepaired and disconnect it. Don't say that's not going
to
> > happen! Most of the solar heater panels I've seen are not working
after
> > a few years. It's a just matter of entropy. Things just get
ignored
> > and turn to dust, and no one bothers with them anymore.
> >
> > BTW, your followup is not easily readable, misuse of commas, etc.
Needs
> > work.
> > [snip]

Facts are facts. I simply stated a fact. First off, that the solar water heater that I have experience with, and that's a *fact*. And secondly, your followup is not easily readable, misuse of commas, etc. Needs work. Fact.

3103. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 03:08:14 UTC
From: "Watson A.Name - \"Watt Sun, the Dark Remover\"" <NOSPAM@dslextreme.com>
Message-ID: <1083s9c6s5eem2e@corp.supernews.com>
Source record: 26790
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Jan Panteltje" <pNaonStpealmtje@yahoo.com> wrote in message
news:c5sdkc$10ql$1@news.f.de.plusline.net...

[snip]

> > That does not mean that there are no individual
> >cases today where solar is attractive economically, nor
> >does it encompass those who can't connect to the grid.
> Here in teh Netherlands where i am, you could get the
> solar installation almost for free, because of government grants,
> so many people did it that the gov ran out of the allocated budget,
> and is now drastically reducing subsidizing solar power.

Well, the question is, did the gov't get what it wanted, with the
subsidies that it did hand out? In other words, did it hand out 100
million Quatloos worth of subsidies, and get back _more_ than 100
million in benefits, such as reduction in the amount of non-renewable
energy usage, etc.

If so, then it seems to me that the program served its purpose and
should be continued, and even broadened. But then politics..

> >But it's a non-starter for better than 99 percent of the
> >people who can connect to the grid. The number of

[snip]

> Unfortunatly there is not a lot of sun here...

Yes, that's another factor that should be considered in the overall
plan. less sun, less energy from your investment! Longer payback.

[snip]

> > But for most people who run
> >the numbers, solar is clearly a no win situation.

Well, if it was a win situation, then more of them would be installed.
I guess the proof of this statement is that few of them are installed in
urban areas, where most people live.

[snip]
> JP

3104. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 03:26:47 UTC
From: Rich Grise <null@example.net>
Message-ID: <Xzmgc.6618$Aq.2394@nwrddc03.gnilink.net>
Source record: 26791
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Joel Kolstad" <JKolstad71HatesSpam@Yahoo.Com> wrote in message
news:c5k3bmsqo1@news.oregonstate.edu...
...
> Although I understand the reasoning behind it, it's quite ironic how many
> people out there who live within an arguably quite reasonable bikable
> distance to their place of employment instead drive to work and then drive
> to a fitness club afterwards to work out. :-) Although I am all for
people
> using their cars as much as they want so long as fuel taxes or whatever
more
> or less make up for the impact to the environment, but unfortunately it's
> hard to translate that impact into monetary terms.

Yeah, like how many dollars in gas tax have to go into a politician's
pocket to save 1 acre of spotted owl habitat? Is that how that works?

Thanks,
Rich

3105. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 03:50:13 UTC
From: Solar Guppy <solar-guppy@solar-guppy.com>
Message-ID: <WVmgc.29303$Lg.4908@fe07.usenetserver.com>
Source record: 26792
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Please then state your facts .. did your landlord share this with you ?

what was the cost ? ,
what amount of hot water does or did the system produce ?
how many years has it produced hot water ?

and how about some simple numbers to back-up your claim it didn't have an
economical payback ...

http://www3.sympatico.ca/hipett/hotwater.htm 3-4 year payback
http://www.solagen.com/water-heating.htm 1-3 year payback
http://www.environment.act.gov.au/Files/solarhotwatersystemsreport.pdf 4-6
years (in AU dollars)
http://www.ecs-solar.com/solarhotwater_faq.htm 3-4 year based on 600-700
year savings
http://www.solardev.com/hot-water-types.php 4-7 years
http://www.uneptie.org/energy/act/re/fact_sheet/docs/thermal.PDF 4 - 14
years (I guess you can pay to much for anything)
http://www.sixriverssolar.com/solar_water_heating.htm 4 -8 years

Every hear of Google ?

most of the above links are a bit outdated , and if today's electric/Natural
gas prices were used , payback for a self installed system would be in the
2-3 year range. (based on a 1600.00 kit , that I having bought and installed
, replacing 600.00 year in electricity.) I bought and installed and used
this system for 2.5 years ... what are your numbers NOSPAM ?

"Watson A.Name - "Watt Sun, the Dark Remover"" <NOSPAM@dslextreme.com> wrote
in message news:1083ppno33g9p31@corp.supernews.com...
>

SNIP
> >
> > > My apt. owner put solar water heater panels on the roof more than
> ten
> > > years ago, and I don't think they've been cost effective.
>

SNIP AGAIN

> Facts are facts. I simply stated a fact. First off, that the solar
> water heater that I have experience with, and that's a *fact*. And
> secondly, your followup is not easily readable, misuse of commas, etc.
> Needs work. Fact.
>

>
>

3106. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 07:02:08 UTC
From: Anthony Matonak <res04ijs@verizon.net>
Message-ID: <408227F0.3060405@verizon.net>
Source record: 26793
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Watson A.Name - \"Watt Sun, the Dark Remover\" wrote:
> "Anthony Matonak" <res04ijs@verizon.net> wrote in message
>>
>>The price penalty is only on items that try to replace or substitute
>>for meat (and often failing miserably). If you simply purchase items
>>such as beans, rice, grains, nuts and so forth, as they exist in
>>nature (or at least, supermarket shelves) then their prices become
> very
>>low.
>
> Last I checked, nuts were more expensive than some meats. And most
> people haven't got a clue as to how to eat a meat-free diet and get
> proper nutrition. That's the problem.

Well, then don't buy more expensive products and educate yourself
about proper nutrition. It's not like this is especially complex or
the information particularly difficult to find.

Anthony

3107. Re: Solar cell modules/Wind Generator combination

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 08:20:33 UTC
From: Highland Ham <xygm0csz.wvkn6wh@spamisbad.com>
Message-ID: <rSCgc.657$Gq3.274@newsfe1-win>
Source record: 26733
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

> Now a wind generator would be cool, there are many windmils of huge size
here,
> one next to my house (100m or so), a BIG one that replaced 5 smaller
ones...
> It is on the coast, and it is always windy here...
> How big is that thing?
> JP
==========
As I reported in a previous message its rated capacity is only 150 Watts.
6 Blades , 900 mm diameter, max rpm approx 250 , 3 phase generator (DC
through one and a half standard 25 Amperes bridge rectifiers)
The thing sits on a street lamp post with an extension (approx 8 metres
above ground.

Frank GM0CSZ / KN6WH

3108. Re: Homebrew crystals for transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 08:25:01 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <z+1cHiAdtjgAFwuX@ddwyer.demon.co.uk>
Source record: 26795

In article <T5%ec.1615$Kv3.324@news01.roc.ny>, Bill Janssen
<billjNOTTHIS@ieee.org> writes
>Steve Nosko wrote:
>
>>"H. Peter Friedrichs" <XXXhpfuopZZZ@mindspring.com> wrote in message
>>news:0TDec.7141$A_4.6041@newsread1.news.pas.earthlink.net...
>>
>>
>>>Hello, All:
>>>
>>>Rumor has it that QST featured an article in a January/1930 or
>>>
>>>
>>January/1935
>>
>>
>>>issue on the subject of homebrew transmitter crystals - how cut, lap, and
>>>mount them. If anyone has QST on CDROM for those years, I'd sure
>>>
>>>
>>appreciate
>>
>>
>>>if you could take a look.
>>>Remove XXX's and ZZZ's if you wish to reply directly, and thanks.
>>>Pete
>>>AC7ZL
>>>
>>>
>>
>>
>> Pete,
>>
>> I have my Dad's grinding stuff, but don't do it. One thing to keep in
>>mind, and I don't know the details, but remember that the crystal activity
>>is effected by the edges. Grinding the edges is one of the more esoteric
>>aspects.
>>
>>
>The trick isn't the edges but keeping the two surfaces parallel and
>flat. The procedure is to grind a little
>and check the activity. If it is down try to grind the center or edges
>and check again. If it gets better
>then go back to to grinding and trying to keep it flat.

>
>Anyway that is the method I used.
>
>Bill K7NOM
>
Large pieces of natural quartz usually from Brazil are getting rare as
quarts gravel/pebbles are now used as feed material for re-growth on a
seed plate in autoclaves.
If large slices in the Y direction are required (SAW DELAY LINES) growth
in this direction is so slow that the seed has to be from a slice of
natural.
Hence big natural pieces are valuable.

--
ddwyer

3109. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 08:50:51 UTC
From: John Woodgate <jmw@jmwa.demon.contraspam.yuk>
Message-ID: <MG$2H8ArFkgAFwas@jmwa.demon.co.uk>
Source record: 26794
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

I read in sci.electronics.design that James Meyer <jmeyer@nowhere.com>
wrote (in <shg380lhj86nm7mg11n35q45kq2kvci3ep@4ax.com>) about 'A neat
and compact way to generate RF harmonics...', on Sat, 17 Apr 2004:
>On Sat, 17 Apr 2004 21:05:34 +0100, John Woodgate
><jmw@jmwa.demon.contraspam.yuk> posted this:
>
>>I read in sci.electronics.design that James Meyer <jmeyer@nowhere.com>
>>wrote (in <fqv280hpqh4rfh8faodllrk9sm30mo8ft5@4ax.com>) about 'A neat
>>and compact way to generate RF harmonics...', on Sat, 17 Apr 2004:
>>>On Sat, 17 Apr 2004 17:26:15 +0100, John Woodgate
>>><jmw@jmwa.demon.contraspam.yuk> posted this:
>>>
>>>>I read in sci.electronics.design that James Meyer <jmeyer@nowhere.com>
>>>>wrote (in <c2k28012vegrpa6a9h8eoqjhn237lfpdcg@4ax.com>) about 'A neat
>>>>and compact way to generate RF harmonics...', on Sat, 17 Apr 2004:
>>>>> IOW, the Q without the probe will be higher than the Q when you
>insert
>>>>>the probe to measure the Q.
>>>>
>>>>Use an inductive current pick-off. That how the Marconi Instruments 1245
>>>>series Q-meters work(ed).
>>>
>>> Nevertheless, *ANY* method used to probe the field associated with the
>>>resonator will load the resonator and degrade the Q.
>>>
>>IIRC, the Marconi unit used a 10 nH inductor (maybe less) made of a
>>short length of silver wire, gold-plated to eliminate sulfide attack.
>>The effect on Q would be minimal in the extreme.
>
> But what about the energy extracted from the probe to make the
>measurement?

The sensing inductor was connected to the grid of a triode tube, with,
IIRC, a 1 Mohm grid leak. With 1 mV across the sensor, that's a whole
1 uJ/s of energy extraction.

>Any load on the probe is transformed into a load on the resonator.
>Compensating for that load requires a very small number be divided by another
>very small number. Any error in either number makes a much larger error in the
>result of the calculation.
>
Check your math. It's small errors in *differences*, not in ratios, that
result in large errors in results.
--

Regards, John Woodgate, OOO - Own Opinions Only.
The good news is that nothing is compulsory.
The bad news is that everything is prohibited.
http://www.jmwa.demon.co.uk Also see http://www.isce.org.uk

3110. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 09:53:11 UTC
From: Robert Baer <robertbaer@earthlink.net>
Message-ID: <40824FBE.50F41CB5@earthlink.net>
Source record: 26796
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

James Meyer wrote:
>
> On Sat, 17 Apr 2004 07:43:49 GMT, Robert Baer <robertbaer@earthlink.net> posted
> this:
>
> >John Larkin wrote:
> >>
> >>
> >> Well, all the usual methods: resonance width, phase shift, ringdown,
> >> stuff like that. I work with gadgets with Qs over 1e9, and people
> >> measure them without difficulty.
> >>
> >> John
> >
> > Ringdown is the easist way when Qs are extremely high.
>
> You must still account for the energy you extract from the circuit in
> order to measure the ringdown. Even the energy needed to drive a high impedance
> probe is significant when the Q gets high.
>
> IOW, the Q without the probe will be higher than the Q when you insert
> the probe to measure the Q.
>
> Jim

Not a problem; use two different loads.
Just like measuring the internal resistance of a battery or a curent
meter...
...Never done directly.

3111. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 09:59:44 UTC
From: Spehro Pefhany <speffSNIP@interlogDOTyou.knowwhat>
Message-ID: <8rk48014b9pti1lmato1pbd10lmei12nvr@4ax.com>
Source record: 26697
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On Sat, 17 Apr 2004 17:45:00 -0700, the renowned Jim Thompson
<thegreatone@example.com> wrote:

>On Sun, 18 Apr 2004 00:35:15 GMT, Jan Panteltje
><pNaonStpealmtje@yahoo.com> wrote:
>
>>On a sunny day (Sun, 18 Apr 2004 01:08:04 +0100) it happened "Newsgroups"
>><f.dinger@ntlworld.com> wrote in <hQjgc.160$Jc5.69@newsfe1-win>:
>>
>>>>Charging 12 V Lead -Acid batteries to 14.4 V , voltage limited by a home
>>>made shunt controller .
>>>System includes a 150 Watts wind generator , to support system during windy
>>>(and usually sunless) periods
>>Now a wind generator would be cool, there are many windmils of huge size here,
>>one next to my house (100m or so), a BIG one that replaced 5 smaller ones...
>>It is on the coast, and it is always windy here...
>>How big is that thing?
>>JP
>
>Have you seen the windmill "farm" west of Indio, California (on I10) ?
>
>HUNDREDS of large windmill AC generators.
>
> ...Jim Thompson

It's an unusual place- the wind just whistles through the canyons
there and there are dust stoms. A fair number of them seem to be down
for maintenance whenever I go through. I wonder if it is really more
cost effective than burning coal.

Best regards,
Spehro Pefhany
--
"it's the network..." "The Journey is the reward"
speff@interlog.com Info for manufacturers: http://www.trexon.com
Embedded software/hardware/analog Info for designers: http://www.speff.com

3112. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 11:35:43 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404180335.6a17abca@posting.google.com>
Source record: 26698
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

James Meyer <jmeyer@nowhere.com> wrote in message
news:<l303805mkt65l91f0il6lh64pvcqo9n4lv@4ax.com>...
> On 17 Apr 2004 10:09:22 -0700, k7itm@aol.com (Tom Bruhns) posted this:
>
> >Robert Baer <robertbaer@earthlink.net> wrote in message
news:<4080E14E.A942C575@earthlink.net>...
> >...
> >> Yes, but the emphasis was on small size, and a helical resonator
> >> allows a goodly shrinkage of volume wihout a corresponding loss large of
> >> Q.
> >
> >As compared with what? A given coil in a helical resonator will
> >result in lower Qu than that same coil unshielded and simply resonated
> >with a good capacitor.
> >
> >
> Not so. And others have pointed that out. If you take an unshielded
> coil to it's ultimate configuration you are confronted with a resonant antenna
> that is loaded by its radiation resistance and that results in a *lower* Q than
> a properly shielded resonator.

ONLY if it's really big. See Reg's posting in this thread on that
subject. We're talking about making things small here, like smaller
than a 1 inch diameter coil at 18MHz. The cavity for a standard
helical resonator design will ding the Q by 15% or more; for such a
small unshielded coil do you expect that much radiation? I don't.
Not even close.

Cheers,
Tom

3113. Re: Homebrew PTO/VFO question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 12:12:13 UTC
From: Somebody <ihave@enough.spam>
Message-ID: <xgugc.241$j86.72@newssvr15.news.prodigy.com>
Source record: 26699

I think I several hours building mine from an ARRL handbook design of some sort, then maybe a half hour a day for a couple of weeks with a 50 Watt lamp for heating and a fan for cooling until I tweaked the drift with various N750, etc. ceramic caps. A real challenge but whatever drift I have now is virtually nil . I think I quit tweaking at about 200 Hz "cold" to "warm" drift. BTW, my transmitter is a hetrodyne affair, 5.0 to 5.2 MHz VFO + keyed crystal oscillator, both feeding Mini-Circuits DBM.
If you are interested, I can put to schematic what I ended up with as I need to do it anyways for my own reference.
kb8tl at arrl dot net
Bob

3114. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 13:36:05 UTC
From: James Meyer <jmeyer@nowhere.com>
Message-ID: <3p0580d6p0f5mnieisiu30fbdmv28jdjja@4ax.com>
Source record: 26700
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Sat, 17 Apr 2004 18:56:14 -0700, Roy Lewallen <w7el@eznec.com> posted this:

>Thanks for the profound observation about mathematicians and engineers.
>In which category does one put a person who's satisfied with
>calculations made without thinking about, caring about, or considering
>the errors caused by ignoring fundamental effects? Certainly not an
>engineer as I use the term.
>
>Roy Lewallen, W7EL

Such a person as you describe is commonly known as a physicist. I have
had to work with several. That some of them are still alive is a testament to
my degree of self control.

Jim

3115. May 86 Article ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 13:52:08 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <cKvgc.8856$PO4.5841@newssvr24.news.prodigy.com>
Source record: 26701
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

There'a an article in the May 1986 QEX titled "A Bridge Method of Sweep-Frequency Impedance Measurement" by W3UB. My QEX collection is missing this issue and I wonder if anyone has a scan they can provide me?
tnx
Hank WD5JFR

3116. Re: Has QSL.net network problems ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 14:22:33 UTC
From: Hern&#65533;n S&#65533;nchez <hernan.sanchez@iname.com>
Message-ID: <c5u2v5$5lj2f$1@ID-169358.news.uni-berlin.de>
Source record: 26702

Thanks... I think this is the answer... I live in South America (Colombia).
Do you know how can I contact QSL.NET to help me with access there ? any
QSL.NET mirror ? I'm a ham radio and QSL.NET is an excellent source of
ideas.

Thanks

Hern&#65533;n S&#65533;nchez
HJ4SZY

"Dave Platt" <dplatt@radagast.org> escribi&#65533; en el mensaje
news:1083elsmc1qpkb1@corp.supernews.com...
> In article <c5rc3m$4qfoa$1@ID-169358.news.uni-berlin.de>,
> Hern&#65533;n S&#65533;nchez <hernan.sanchez@iname.com> wrote:
>
> >"IP packets are being list past network 'UUNET Technologies, Inc.
UUNET65'
> >at hop 8. VisualRoute cannot determine the next network at hop 9. Node
> >65.207.92.86 at hop 8 in network 'UUNET Technologies, Inc. UUNET65'
reports
> >'The destination host is unreachable'".
> >
> >It means is not my ISP problem, but a generic problem. Has anyone any
idea
> >of what's happening ?
>
> According to some discussion on the linux-hams mailing list, QSL.NET
> had a problem a short while ago - their system was being attacked by
> "crackers" located somewhere in South America - Brazil, I believe. If
> I understand the situation correctly, they were unable to get support
> or assistance from ISP(s) from which the attacks were originating. As
> a result, they have apparently started blocking inbound TCP/IP traffic
> to their site from a significant portion of South America.
>
> --
> Dave Platt <dplatt@radagast.org> AE6EO
> Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
> I do _not_ wish to receive unsolicited commercial email, and I will
> boycott any company which has the gall to send me such ads!

3117. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 14:49:14 UTC
From: Jan Panteltje <pNaonStpealmtje@yahoo.com>
Message-ID: <c5u4ha$1qmk$1@news.f.de.plusline.net>
Source record: 26703
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On a sunny day (Sat, 17 Apr 2004 17:45:00 -0700) it happened Jim Thompson
<thegreatone@example.com> wrote in
<epj380tefb05kspk05k75h34bjeio7k46e@4ax.com>:

>On Sun, 18 Apr 2004 00:35:15 GMT, Jan Panteltje
><pNaonStpealmtje@yahoo.com> wrote:
>
>>On a sunny day (Sun, 18 Apr 2004 01:08:04 +0100) it happened "Newsgroups"
>><f.dinger@ntlworld.com> wrote in <hQjgc.160$Jc5.69@newsfe1-win>:
>>
>>>Charging 12 V Lead -Acid batteries to 14.4 V , voltage limited by a home
>>>made shunt controller .
>>>System includes a 150 Watts wind generator , to support system during windy
>>>(and usually sunless) periods
>>Now a wind generator would be cool, there are many windmils of huge size here,
>>one next to my house (100m or so), a BIG one that replaced 5 smaller ones...
>>It is on the coast, and it is always windy here...
>>How big is that thing?
>>JP
>
>Have you seen the windmill "farm" west of Indio, California (on I10) ?
>
>HUNDREDS of large windmill AC generators.
Only seen pictures of it.
These look the same as the ones we have here.
There are plans to build a whole bunch out in the sea here, but I dunno how
far that is from realization.
JP

3118. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 14:54:13 UTC
From: Jan Panteltje <pNaonStpealmtje@yahoo.com>
Message-ID: <c5u4qm$1qpr$1@news.f.de.plusline.net>
Source record: 26704
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

```
On a sunny day (Sat, 17 Apr 2004 19:11:48 -0700) it happened "Watson A.Name -
\"Watt Sun, the Dark Remover\"" <NOSPAM@dslextreme.com> wrote in
<1083ovh1aaq6u4f@corp.supernews.com>:

>
>"Jan Panteltje" <pNaonStpealmtje@yahoo.com> wrote in message
>news:c5mqgb$23pc$1@news.wplus.net...
>> On a sunny day (Thu, 15 Apr 2004 05:57:18 GMT) it happened
>> ehsjr@bellatlantic.net wrote in <407E2458.C40B070D@bellatlantic.net>:
>> >A guy in Florida quoted 48 years pay back time. I ran
>> >the numbers for my home - over 40 years, and I pay 13
>> >cents per kwh. A 2 kW system costs $15000. Assuming
>> >an average of 8 hours per day of 2kW per hour, that
>> >solar system would give me 16 kWh. I pay 16*.13 or
>> >$2.08 for 16 kWh. Works out to 19+ years for payback,
>> >if you don't count on mortgage payments for the system.
>> >Add that in, and the cost of a $15000 system is
>> >much worse - over 30,000 in a 25 year, 7% mortgage.
>> You have to take into account that the cost of a kWh from
>> the grid in 25 years will be a LOT higher too, if there
>> still is a grid during and after WW3 that is.
>> JP
>
>I don't blame you for being paranoid about WW3, if you're from Holland.
>History has treated those countries poorly during the last WWs. But
>then, who cares if there's a WW3? I'm more concerned about the next big
>earthquake. Some scientists are predicting a big 6.something earthquake
>in the Southern Calif. desert before Sept. I hope so, 'cause some of
>these immigrants might consider going back to their point of
>origination.
Yea, every place has it problems, here it is the water level, and dikes
-so flooding-.
Those imigrants are a workforce, illegal immigrants behave usually pretty
well to avoid being exposed.
I personally think they have equal rights as the native Americans who stole
the land from the Indiens (spelling?).
Zero rights? Or the right of the strongest.
Was it not Reagan who pardonned most of them in California?
Then they started paying taxes....
Was not California short of cash?
JP
```

3119. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 15:00:57 UTC
From: Jim Thompson <thegreatone@example.com>
Message-ID: <4v5580dqo25439oql37hfkrjendd4b19lo@4ax.com>
Source record: 26705
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On Sun, 18 Apr 2004 14:54:13 GMT, Jan Panteltje
<pNaonStpealmtje@yahoo.com> wrote:

>On a sunny day (Sat, 17 Apr 2004 19:11:48 -0700) it happened "Watson A.Name -
>\"Watt Sun, the Dark Remover\"" <NOSPAM@dslextreme.com> wrote in
><1083ovh1aaq6u4f@corp.supernews.com>:
>
>>
>>"Jan Panteltje" <pNaonStpealmtje@yahoo.com> wrote in message
>>news:c5mqgb$23pc$1@news.wplus.net...
>>> On a sunny day (Thu, 15 Apr 2004 05:57:18 GMT) it happened
>>> ehsjr@bellatlantic.net wrote in <407E2458.C40B070D@bellatlantic.net>:
>>> >A guy in Florida quoted 48 years pay back time. I ran
>>> >the numbers for my home - over 40 years, and I pay 13
>>> >cents per kwh. A 2 kW system costs $15000. Assuming
>>> >an average of 8 hours per day of 2kW per hour, that
>>> >solar system would give me 16 kWh. I pay 16*.13 or
>>> >$2.08 for 16 kWh. Works out to 19+ years for payback,
>>> >if you don't count on mortgage payments for the system.
>>> >Add that in, and the cost of a $15000 system is
>>> >much worse - over 30,000 in a 25 year, 7% mortgage.
>>> You have to take into account that the cost of a kWh from
>>> the grid in 25 years will be a LOT higher too, if there
>>> still is a grid during and after WW3 that is.
>>> JP
>>
>>I don't blame you for being paranoid about WW3, if you're from Holland.
>>History has treated those countries poorly during the last WWs. But
>>then, who cares if there's a WW3? I'm more concerned about the next big
>>earthquake. Some scientists are predicting a big 6.something earthquake
>>in the Southern Calif. desert before Sept. I hope so, 'cause some of
>>these immigrants might consider going back to their point of
>>origination.
>Yea, every place has it problems, here it is the water level, and dikes
>-so flooding-.
>Those imigrants are a workforce, illegal immigrants behave usually pretty
>well to avoid being exposed.
>I personally think they have equal rights as the native Americans who stole
>the land from the Indiens (spelling?).
>Zero rights? Or the right of the strongest.
>Was it not Reagan who pardonned most of them in California?
>Then they started paying taxes....
>Was not California short of cash?

>JP

FINALLY! I've figured out Jan's source of news and historical
information... comic books ;-)

...Jim Thompson
--
James E.Thompson, P.E.	mens
Analog Innovations, Inc.	et
Analog/Mixed-Signal ASIC's and Discrete Systems	manus
Phoenix, Arizona Voice:(480)460-2350	
E-mail Address at Website Fax:(480)460-2142	Brass Rat
http://www.analog-innovations.com	1962

I love to cook with wine. Sometimes I even put it in the food.

3120. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 15:08:20 UTC
From: John Woodgate <jmw@jmwa.demon.contraspam.yuk>
Message-ID: <Q78h4EDknpgAFwK$@jmwa.demon.co.uk>
Source record: 26707
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

I read in sci.electronics.design that James Meyer <jmeyer@nowhere.com>
wrote (in <3p0580d6p0f5mnieisiu30fbdmv28jdjja@4ax.com>) about 'A neat
and compact way to generate RF harmonics...', on Sun, 18 Apr 2004:
>On Sat, 17 Apr 2004 18:56:14 -0700, Roy Lewallen <w7el@eznec.com> posted this:
>
>
>>Thanks for the profound observation about mathematicians and engineers.
>>In which category does one put a person who's satisfied with
>>calculations made without thinking about, caring about, or considering
>>the errors caused by ignoring fundamental effects? Certainly not an
>>engineer as I use the term.
>>
>>Roy Lewallen, W7EL
>
> Such a person as you describe is commonly known as a physicist. I have
>had to work with several. That some of them are still alive is a testament to
>my degree of self control.
>
LOL! But physicists are usually *preoccupied* with fundamental effects
and tend to ignore others.

In my brief skirmish with aeronautical engineering, I formed the opinion
that most of the calculations were as pragmatic as RL suggests; the only
consolation is that they seem to work.
--
Regards, John Woodgate, OOO - Own Opinions Only.
The good news is that nothing is compulsory.
The bad news is that everything is prohibited.
http://www.jmwa.demon.co.uk Also see http://www.isce.org.uk

3121. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 15:13:19 UTC
From: maxfoo <maxfooHeadFromButt@punkass.com>
Message-ID: <sm6580l82njl442eugmv0te8icrlm947mq@4ax.com>
Source record: 26706
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On Sun, 18 Apr 2004 08:00:57 -0700, Jim Thompson <thegreatone@example.com>
wrote:

>
>FINALLY! I've figured out Jan's source of news and historical
>information... comic books ;-)

My guess would of been http://www.theonion.com/

Remove "HeadFromButt", before replying by email.

3122. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 15:27:14 UTC
From: Jim Thompson <thegreatone@example.com>
Message-ID: <uh758096r1pvc6dculnubklg37fd2g288l@4ax.com>
Source record: 26709
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On Sun, 18 Apr 2004 15:13:19 GMT, maxfoo
<maxfooHeadFromButt@punkass.com> wrote:

>On Sun, 18 Apr 2004 08:00:57 -0700, Jim Thompson <thegreatone@example.com>
>wrote:
>
>>
>>FINALLY! I've figured out Jan's source of news and historical
>>information... comic books ;-)
>
>My guess would of been http://www.theonion.com/
>

LOL! Probably so!

...Jim Thompson
--
James E.Thompson, P.E.	mens
Analog Innovations, Inc.	et
Analog/Mixed-Signal ASIC's and Discrete Systems	manus
Phoenix, Arizona Voice:(480)460-2350	
E-mail Address at Website Fax:(480)460-2142	Brass Rat
http://www.analog-innovations.com	1962

I love to cook with wine. Sometimes I even put it in the food.

3123. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 15:28:31 UTC
From: KR Williams <krw@att.biz>
Message-ID: <MPG.1aec689493de524e98972e@news1.news.adelphia.net>
Source record: 26708
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

In article <c5mqgb$23pc$1@news.wplus.net>,
pNaonStpealmtje@yahoo.com says...
> On a sunny day (Thu, 15 Apr 2004 05:57:18 GMT) it happened
> ehsjr@bellatlantic.net wrote in <407E2458.C40B070D@bellatlantic.net>:
> >A guy in Florida quoted 48 years pay back time. I ran
> >the numbers for my home - over 40 years, and I pay 13
> >cents per kwh. A 2 kW system costs $15000. Assuming
> >an average of 8 hours per day of 2kW per hour, that
> >solar system would give me 16 kWh. I pay 16*.13 or
> >$2.08 for 16 kWh. Works out to 19+ years for payback,
> >if you don't count on mortgage payments for the system.
> >Add that in, and the cost of a $15000 system is
> >much worse - over 30,000 in a 25 year, 7% mortgage.

> You have to take into account that the cost of a kWh from
> the grid in 25 years will be a LOT higher too, if there
> still is a grid during and after WW3 that is.

That's silly economics. I do not have to take into account the
cost of electricity in 25 years. I can wait. Solar cells are
becoming cheaper too. When the cost of the solar cell is less
than the cost of power from the grid I can switch, saving all of
the negative amortization inbetween, and have a *new* system in
25 years, just as you're in need of replacing yours. ;-)

My guess though, is that solar cells for the individual will
never become cheaper than power from the grid, since the power
company has access to the same technology and a *lot* better
financing possibilities. ...and they don't have to have the pay-
back in my lifetime.

--
Keith

3124. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 15:50:41 UTC
From: Jan Panteltje <pNaonStpealmtje@yahoo.com>
Message-ID: <c5u84i$1tff$1@news.f.de.plusline.net>
Source record: 26710
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On a sunny day (Sun, 18 Apr 2004 08:00:57 -0700) it happened Jim Thompson
<thegreatone@example.com> wrote in
<4v5580dqo25439oql37hfkrjendd4b19lo@4ax.com>:

>On Sun, 18 Apr 2004 14:54:13 GMT, Jan Panteltje
><pNaonStpealmtje@yahoo.com> wrote:
>
>>On a sunny day (Sat, 17 Apr 2004 19:11:48 -0700) it happened "Watson A.Name -
>>\"Watt Sun, the Dark Remover\"" <NOSPAM@dslextreme.com> wrote in
>><1083ovh1aaq6u4f@corp.supernews.com>:
>>
>>>
>>>"Jan Panteltje" <pNaonStpealmtje@yahoo.com> wrote in message
>>>news:c5mqgb$23pc$1@news.wplus.net...
>>>> On a sunny day (Thu, 15 Apr 2004 05:57:18 GMT) it happened
>>>> ehsjr@bellatlantic.net wrote in <407E2458.C40B070D@bellatlantic.net>:
>>>> >A guy in Florida quoted 48 years pay back time. I ran
>>>> >the numbers for my home - over 40 years, and I pay 13
>>>> >cents per kwh. A 2 kW system costs $15000. Assuming
>>>> >an average of 8 hours per day of 2kW per hour, that
>>>> >solar system would give me 16 kWh. I pay 16*.13 or
>>>> >$2.08 for 16 kWh. Works out to 19+ years for payback,
>>>> >if you don't count on mortgage payments for the system.
>>>> >Add that in, and the cost of a $15000 system is
>>>> >much worse - over 30,000 in a 25 year, 7% mortgage.
>>>> You have to take into account that the cost of a kWh from
>>>> the grid in 25 years will be a LOT higher too, if there
>>>> still is a grid during and after WW3 that is.
>>>> JP
>>>
>>>I don't blame you for being paranoid about WW3, if you're from Holland.
>>>History has treated those countries poorly during the last WWs. But
>>>then, who cares if there's a WW3? I'm more concerned about the next big
>>>earthquake. Some scientists are predicting a big 6.something earthquake
>>>in the Southern Calif. desert before Sept. I hope so, 'cause some of
>>>these immigrants might consider going back to their point of
>>>origination.
>>Yea, every place has it problems, here it is the water level, and dikes
>>-so flooding-.
>>Those imigrants are a workforce, illegal immigrants behave usually pretty
>>well to avoid being exposed.
>>I personally think they have equal rights as the native Americans who stole
>>the land from the Indiens (spelling?).

>>Zero rights? Or the right of the strongest.
>>Was it not Reagan who pardonned most of them in California?
>>Then they started paying taxes....
>>Was not California short of cash?
>>JP
>
>FINALLY! I've figured out Jan's source of news and historical
>information... comic books ;-)
Wrong again, as first hand experience working in California
I KNOW how it is.
I ALSO know what a jail full of illegal Mexicans looks like from the inside.
So you better stop joking, I probably know US better then you.
And no I am not a Mexican.
That was the south border, I can also tell you about the north border.
Now go and dream on, dream dream dream the US dream my friend.
JP

3125. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 15:55:45 UTC
From: Jan Panteltje <pNaonStpealmtje@yahoo.com>
Message-ID: <c5u8e2$1ti1$1@news.f.de.plusline.net>
Source record: 26712
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On a sunny day (Sun, 18 Apr 2004 11:28:31 -0400) it happened KR Williams
<krw@att.biz> wrote in <MPG.1aec689493de524e98972e@news1.news.adelphia.net>:

>My guess though, is that solar cells for the individual will
>never become cheaper than power from the grid, since the power
>company has access to the same technology and a *lot* better
>financing possibilities. ...and they don't have to have the pay-
>back in my lifetime.
A guess it is, given that solar cell efficiancy will eventually reach 60 %
in my estimate, then yes, buy one like that in your next lifetime if you
believe in that stuff.
In the mean time there are thoso who use them now.
When the US gets a real oil problem, you can always get one at crisis price.
JP

3126. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 15:56:48 UTC
From: KR Williams <krw@att.biz>
Message-ID: <MPG.1aec6f2fb38ecdf198972f@news1.news.adelphia.net>
Source record: 26711
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

In article <epj380tefb05kspk05k75h34bjeio7k46e@4ax.com>,
thegreatone@example.com says...
> On Sun, 18 Apr 2004 00:35:15 GMT, Jan Panteltje
> <pNaonStpealmtje@yahoo.com> wrote:
>
> >On a sunny day (Sun, 18 Apr 2004 01:08:04 +0100) it happened "Newsgroups"
> ><f.dinger@ntlworld.com> wrote in <hQjgc.160$Jc5.69@newsfe1-win>:
> >
> >>Charging 12 V Lead -Acid batteries to 14.4 V , voltage limited by a home
> >>made shunt controller .
> >>System includes a 150 Watts wind generator , to support system during windy
> >>(and usually sunless) periods
> >Now a wind generator would be cool, there are many windmils of huge size here,
> >one next to my house (100m or so), a BIG one that replaced 5 smaller ones...
> >It is on the coast, and it is always windy here...
> >How big is that thing?
> >JP
>
> Have you seen the windmill "farm" west of Indio, California (on I10) ?
>
> HUNDREDS of large windmill AC generators.

Is that the farm between LA and (around) Palm Springs? I drove
through there ~five years ago and was amazed at the size of the
wind-farm(s?) and the number of turbines that were stopped.

I believe the name of that farm is "San Gorgonio Pass" and has
about 3500 turbines. The "Altimont Pass" farm has another 3500
and an even larger one in "Tehachapi Pass" (5000). (there is a
common thread in these names ;-)

Altogether something like 1% of CA's electricity comes from wind.
That's impressive, though hardly scale able to 100%. The CA
mountain passes hardly indicate the viability of wind power in
the rest of the country/world.

--
Keith

3127. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 15:59:40 UTC
From: Jim Thompson <thegreatone@example.com>
Message-ID: <c995805s3u7mpk6auk3btpuokolnr70nss@4ax.com>
Source record: 26713
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On Sun, 18 Apr 2004 11:56:48 -0400, KR Williams <krw@att.biz> wrote:

>In article <epj380tefb05kspk05k75h34bjeio7k46e@4ax.com>,
>thegreatone@example.com says...
[snip]
>> Have you seen the windmill "farm" west of Indio, California (on I10) ?
>>
>> HUNDREDS of large windmill AC generators.
>
>Is that the farm between LA and (around) Palm Springs? I drove
>through there ~five years ago and was amazed at the size of the
>wind-farm(s?) and the number of turbines that were stopped.

I haven't been able to determine if the stopped units were off-line
for repair, or simply off-line based on grid needs. I've *never* seen
anyone *working* on them, but I drive by there only once or twice a
year.

[snip]

...Jim Thompson
--
James E.Thompson, P.E.	mens
Analog Innovations, Inc.	et
Analog/Mixed-Signal ASIC's and Discrete Systems	manus
Phoenix, Arizona Voice:(480)460-2350	
E-mail Address at Website Fax:(480)460-2142	Brass Rat
http://www.analog-innovations.com	1962

I love to cook with wine. Sometimes I even put it in the food.

3128. DBM and constant R band pass filters.

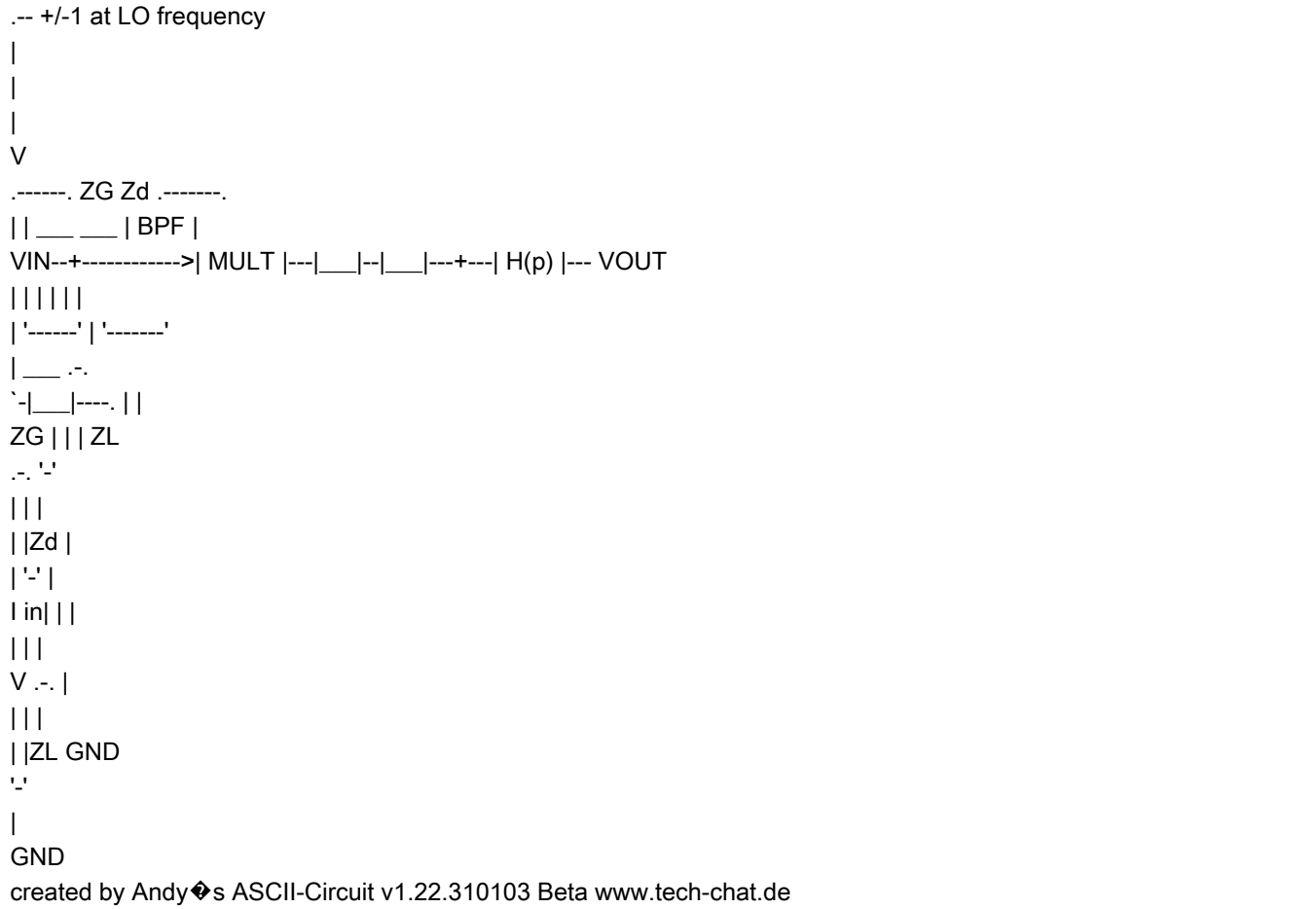
Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 16:10:30 UTC
From: Fred Bartoli <fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo>
Message-ID: <4082a8d8$0$15659$626a14ce@news.free.fr>
Source record: 26714
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Hello,

I have to use some DBMs in a measurement instrument and of course have to design the following bp filters.

I have often seen recommended that the DBMs see the resistive load of a constant R filter (diplexer) rather that the reactive load of a more traditional filter.

I can think of (model) the DBM mixer to the first order as follows :



ZG being the source impedance,
Zd the diode dynamic resistance,
ZL the filter input impedance,
H(p) the BPF voltage transfer function.
The multiplier is a high Zin, null Zout device with unity gain.

I can't see any requirement in this first order model for a constant R load.

Do I miss something ? Is it needed because of second order effects ?
Any thought, any pointer to (preferably) detailed analysis is welcomed.

Thanks,
Fred.

3129. Re: A neat and compact way to generate RF harmonics...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 16:32:55 UTC
From: John Larkin <jjlarkin@highlandSNIPtechTHISnologyPLEASE.com>
Message-ID: <u5b580tcgnb446mnbc67hcrvefn8t88usd@4ax.com>
Source record: 26715
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Sat, 17 Apr 2004 23:48:01 GMT, James Meyer <jmeyer@nowhere.com>
wrote:

>On Sat, 17 Apr 2004 12:22:03 -0700, Roy Lewallen <w7el@eznec.com> posted this:
>
>>Ah, just the person I've been waiting for. How do you account for
>>current bunching on the conductors (that is, non-uniform distribution of
>>current around the conductors)? What reference, equation, or program do
>>you use? Nearly all "first principle" calculations of Q I've seen
>>grossly overestimate Q, and I believe the failure to take this into
>>account is at least part of the reason. I haven't seen a decent
>>analytical method of dealing with it, and an anxious to see how you do it.
>>
>>Then there's surface corrosion and roughness, radiation, and coupling to
>>nearby objects. How do you deal with those? Have you identified some of
>>the other factors that often make a simplistic "first principle"
>>calculation disagree so badly with carefully made measurements?
>>
>>Roy Lewallen, W7EL
>>
>>James Meyer wrote:
>>>
>>> If you have to "do the math", you might as well just calculate the Q
>>> from first principles and forget the "measurement".
>>>
>>> Jim
>>>
>
> I was responding to a suggestion that one could do the math to calculate
>what the Q would have been if you hadn't tried to measure it. I was pointing
>out that if you could do that math, and get it correct, that you could do the
>whole exercise with math and forget measuring anything.
>

The math in question is trivial. Qs from 1 to 1e9 can be measured
accurately without difficulty.

>
> An engineer knows when to say "close enough". A mathematician is never
>satisfied.

But then, mathematicians don't measure things, do they?

John

3130. Re: Has QSL.net network problems ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 16:44:22 UTC
From: xpyttl <xpyttl_NOSPAM@earthling.net>
Message-ID: <1085c8ombv19hc0@corp.supernews.com>
Source record: 26716

Hern&#65533;n

There are a number of sites that allow you to browse other sites. The idea here is to hide what sites you are browsing by connecting to the websites from an address other than your own. They should be able to help you out by stepping around the problem.

www.anonymizer.com is one of these, but there are tons of others. I haven't actually used any of them so I can't tell you if one is better than another. I did put a qsl.net address into anonymizer.com and didn't like what I saw. But if you poke anonymous browsing into google you'll get a zillion sites to try.

..

"Hern&#65533;n S&#65533;nchez" <hernan.sanchez@iname.com> wrote in message news:c5u2v5$5lj2f$1@ID-169358.news.uni-berlin.de...
> Thanks... I think this is the answer... I live in South America (Colombia).
> Do you know how can I contact QSL.NET to help me with access there ? any
> QSL.NET mirror ? I'm a ham radio and QSL.NET is an excellent source of
> ideas.
>
> Thanks
>
> Hern&#65533;n S&#65533;nchez
> HJ4SZY
>
>
>
> "Dave Platt" <dplatt@radagast.org> escribi&#65533; en el mensaje
> news:1083elsmc1qpkb1@corp.supernews.com...
> > In article <c5rc3m$4qfoa$1@ID-169358.news.uni-berlin.de>,
> > Hern&#65533;n S&#65533;nchez <hernan.sanchez@iname.com> wrote:
> >
> > >"IP packets are being list past network 'UUNET Technologies, Inc. UUNET65'
> > >at hop 8. VisualRoute cannot determine the next network at hop 9. Node
> > >65.207.92.86 at hop 8 in network 'UUNET Technologies, Inc. UUNET65' reports
> > >'The destination host is unreachable'".
> > >
> > >It means is not my ISP problem, but a generic problem. Has anyone any idea
> > >of what's happening ?

> >
> > According to some discussion on the linux-hams mailing list, QSL.NET
> > had a problem a short while ago - their system was being attacked by
> > "crackers" located somewhere in South America - Brazil, I believe. If
> > I understand the situation correctly, they were unable to get support
> > or assistance from ISP(s) from which the attacks were originating. As
> > a result, they have apparently started blocking inbound TCP/IP traffic
> > to their site from a significant portion of South America.
> >
> > --
> > Dave Platt <dplatt@radagast.org> AE6EO
> > Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
> > I do _not_ wish to receive unsolicited commercial email, and I will
> > boycott any company which has the gall to send me such ads!
>
>

3131. Re: May 86 Article ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 16:50:23 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <jlygc.18358$gF.9928@newssvr22.news.prodigy.com>
Source record: 26717
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

I got them..
thanks
Hank WD5JFR
"Henry Kolesnik" <kolesnik@sbcglobal.net> wrote in message
news:cKvgc.8856$PO4.5841@newssvr24.news.prodigy.com...
> There'a an article in the May 1986 QEX titled "A Bridge Method of
> Sweep-Frequency Impedance Measurement" by W3UB. My QEX collection is
> missing this issue and I wonder if anyone has a scan they can provide me?
> tnx
> Hank WD5JFR
>
>

3132. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 17:14:36 UTC
From: KR Williams <krw@att.biz>
Message-ID: <MPG.1aec816151601f38989736@news1.news.adelphia.net>
Source record: 26718
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

In article <c995805s3u7mpk6auk3btpuokolnr70nss@4ax.com>,
thegreatone@example.com says...
> On Sun, 18 Apr 2004 11:56:48 -0400, KR Williams <krw@att.biz> wrote:
>
> >In article <epj380tefb05kspk05k75h34bjeio7k46e@4ax.com>,
> >thegreatone@example.com says...
> [snip]
> >> Have you seen the windmill "farm" west of Indio, California (on I10) ?
> >>
> >> HUNDREDS of large windmill AC generators.
> >
> >Is that the farm between LA and (around) Palm Springs? I drove
> >through there ~five years ago and was amazed at the size of the
> >wind-farm(s?) and the number of turbines that were stopped.
>
> I haven't been able to determine if the stopped units were off-line
> for repair, or simply off-line based on grid needs. I've *never* seen
> anyone *working* on them, but I drive by there only once or twice a
> year.

From my conversations with wind-energy proponents after seeing
the farm, they seem to be off-line for maintenance, and the
required maintenance wasn't deemed profitable. No subsidies for
maintenance, only development. This may have changed since the
generators have become cheaper, perhaps even profitable. ;-)

--
Keith

3133. Re: Belden 9907

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 17:15:54 UTC
From: Roger and Ute Brown <rogerbrown@gci.net>
Message-ID: <1085hg2gmh9cac9@corp.supernews.com>
Source record: 26721

Mike:
The COAX isn't going to be a cause for your new rig to burn up - but a high SWR might (although the rig should shut down first). The question was "will it handle the power," and apparently it will. Assuming that and a well matched rig/coax/antenna combination - you will have no problems.
Roger, KL7Q

MOPARMEDIC101 <moparmedic101@aol.com> wrote in message news:20040417202317.08932.00000056@mb-m14.aol.com...
> I'm wondering if anyone can help me with this question, I'm getting ready to
> put new coax on my mobile system. I have 950 feet of Belden 9907 coax. It's
> 50
> Ohm, low loss ethernet coax. Can It handle 75 watts from my Icom IC V-8000?
> Or should I opt for standard Mini 8U coax? Thanks for the feedback.
> Mike
> KC8OIT

3134. Re: Has QSL.net network problems ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 17:36:46 UTC
From: dplatt@radagast.org
Message-ID: <1085f5e1u514cc9@corp.supernews.com>
Source record: 26719

>Thanks... I think this is the answer... I live in South America (Colombia).
>Do you know how can I contact QSL.NET to help me with access there ? any
>QSL.NET mirror ? I'm a ham radio and QSL.NET is an excellent source of
>ideas.

You could probably contact them by using any of several Web-based email services - e.g. Yahoo.com or similar ones. Create yourself a free account and use it to email QSL.NET - since the email itself will originate at the webmail service's IP address it won't be blocked.

I don't know of any QSL.NET mirrors - it's a self-funded and donation-funded operation and I don't think anyone has volunteered to provide a mirror.

You could probably access it semi-indirectly, by using one of the various "anonymous web surfing" proxy services scattered around the Net. [There are also about a bazillion wide-open web proxys running on poorly-configured or Trojan-exploited personal computers on numerous cable-modem and home-DSL networks, but using these without the owners' explicit permissions would be very bad form and is quite often a violation of one or another law.]

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

3135. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 18:10:56 UTC
From: KR Williams <krw@att.biz>
Message-ID: <MPG.1aec8e9c252b0521989739@news1.news.adelphia.net>
Source record: 26720
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

In article <c5u8e2$1ti1$1@news.f.de.plusline.net>,
pNaonStpealmtje@yahoo.com says...
> On a sunny day (Sun, 18 Apr 2004 11:28:31 -0400) it happened KR Williams
> <krw@att.biz> wrote in <MPG.1aec689493de524e98972e@news1.news.adelphia.net>:
>
> >My guess though, is that solar cells for the individual will
> >never become cheaper than power from the grid, since the power
> >company has access to the same technology and a *lot* better
> >financing possibilities. ...and they don't have to have the pay-
> >back in my lifetime.
> A guess it is, given that solar cell efficiancy will eventually reach 60 %
> in my estimate, then yes, buy one like that in your next lifetime if you
> believe in that stuff.

Nope. That's why I'm not investing for the next lifetime. Only
fools without an ounce of economic sense do so.

> In the mean time there are thoso who use them now.

Economic illiterates, yes. Ok, there are some who choose to live
off-grid for other reasons. I work with one. Fool (for choosing
to live off-grid), yes. Economic fool, no.

> When the US gets a real oil problem, you can always get one at crisis price.

You're an economic illiterate too. Hasn't the concept of
competition reached that hell-hole yet? ...or are you really
that stupid?

--
Keith

3136. Re: Belden 9907

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 18:46:09 UTC
From: Lou <FFSTA17NO@SPAMACCESS995.COM>
Message-ID: <R1Agc.2827$WC3.23790@ord-read.news.verio.net>
Source record: 26722

"Roger and Ute Brown" <rogerbrown@gci.net> wrote in message
news:1085hg2gmh9cac9@corp.supernews.com...
> Mike:
> The COAX isn't going to be a cause for your new rig to burn up - but a
high
> SWR might (although the rig should shut down first). The question was
"will
> it handle the power," and apparently it will. Assuming that and a well
> matched rig/coax/antenna combination - you will have no problems.
> Roger, KL7Q

The operative word above is "should". I can't tell you how many times I've repaired rigs with bad RF Amps due to the shut down system not doing it's job. I'm talking H.F., 2 meters, public service radios. Best to test with a good SWR meter or some better equipment like a bird or some other. Do very short key ups til you see where it is initially and take it from there. Just a word of caution.

Lou

3137. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 18:47:54 UTC
From: Richard Henry <rphenry@home.com>
Message-ID: <v3Agc.23357$ab3.2684@fed1read02>
Source record: 26723
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Spehro Pefhany" <speffSNIP@interlogDOTyou.knowwhat> wrote in message
news:8rk48014b9pti1lmato1pbd10lmei12nvr@4ax.com...
> On Sat, 17 Apr 2004 17:45:00 -0700, the renowned Jim Thompson
> <thegreatone@example.com> wrote:
>
> >On Sun, 18 Apr 2004 00:35:15 GMT, Jan Panteltje
> ><pNaonStpealmtje@yahoo.com> wrote:
> >
> >>On a sunny day (Sun, 18 Apr 2004 01:08:04 +0100) it happened
"Newsgroups"
> >><f.dinger@ntlworld.com> wrote in <hQjgc.160$Jc5.69@newsfe1-win>:
> >>
> >>>Charging 12 V Lead -Acid batteries to 14.4 V , voltage limited by a
home
> >>>made shunt controller .
> >>>System includes a 150 Watts wind generator , to support system during
windy
> >>>(and usually sunless) periods
> >>Now a wind generator would be cool, there are many windmils of huge size
here,
> >>one next to my house (100m or so), a BIG one that replaced 5 smaller
ones...
> >>It is on the coast, and it is always windy here...
> >>How big is that thing?
> >>JP
> >
> >Have you seen the windmill "farm" west of Indio, California (on I10) ?
> >
> >HUNDREDS of large windmill AC generators.
> >
> > ...Jim Thompson
>
> It's an unusual place- the wind just whistles through the canyons
> there and there are dust stoms. A fair number of them seem to be down
> for maintenance whenever I go through. I wonder if it is really more
> cost effective than burning coal.

That depends to some degree what you consider the "costs" of burning coal
are.

3138. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 18:58:15 UTC
From: Richard Henry <rphenry@home.com>
Message-ID: <cdAgc.23363$ab3.662@fed1read02>
Source record: 26724
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Jan Panteltje" <pNaonStpealmtje@yahoo.com> wrote in message
news:c5u4ha$1qmk$1@news.f.de.plusline.net...
> On a sunny day (Sat, 17 Apr 2004 17:45:00 -0700) it happened Jim Thompson
> <thegreatone@example.com> wrote in
> <epj380tefb05kspk05k75h34bjeio7k46e@4ax.com>:
>
> >On Sun, 18 Apr 2004 00:35:15 GMT, Jan Panteltje
> ><pNaonStpealmtje@yahoo.com> wrote:
> >
> >>On a sunny day (Sun, 18 Apr 2004 01:08:04 +0100) it happened
"Newsgroups"
> >><f.dinger@ntlworld.com> wrote in <hQjgc.160$Jc5.69@newsfe1-win>:
> >>
> >>>Charging 12 V Lead -Acid batteries to 14.4 V , voltage limited by a
home
> >>>made shunt controller .
> >>>System includes a 150 Watts wind generator , to support system during
windy
> >>>(and usually sunless) periods
> >>Now a wind generator would be cool, there are many windmils of huge size
here,
> >>one next to my house (100m or so), a BIG one that replaced 5 smaller
ones...
> >>It is on the coast, and it is always windy here...
> >>How big is that thing?
> >>JP
> >
> >Have you seen the windmill "farm" west of Indio, California (on I10) ?
> >
> >HUNDREDS of large windmill AC generators.
> Only seen pictures of it.
> These look the same as the ones we have here.
> There are plans to build a whole bunch out in the sea here, but I dunno
how
> far that is from realization.

There are already a significant number of off-shore windmills in Denmark.
Or at least next to Denmark.

3139. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 19:07:38 UTC
From: Spehro Pefhany <speffSNIP@interlogDOTyou.knowwhat>
Message-ID: <aik580d3tedfp578a0775sfij6a4bde4j0@4ax.com>
Source record: 26725
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On Sun, 18 Apr 2004 11:47:54 -0700, the renowned "Richard Henry"
<rphenry@home.com> wrote:

>
>"Spehro Pefhany" <speffSNIP@interlogDOTyou.knowwhat> wrote in message
>news:8rk48014b9pti1lmato1pbd10lmei12nvr@4ax.com...
>> On Sat, 17 Apr 2004 17:45:00 -0700, the renowned Jim Thompson
>> <thegreatone@example.com> wrote:
>>
>> >On Sun, 18 Apr 2004 00:35:15 GMT, Jan Panteltje
>> ><pNaonStpealmtje@yahoo.com> wrote:
>> >
>> >>On a sunny day (Sun, 18 Apr 2004 01:08:04 +0100) it happened
>"Newsgroups"
>> >><f.dinger@ntlworld.com> wrote in <hQjgc.160$Jc5.69@newsfe1-win>:
>> >>
>> >>>Charging 12 V Lead -Acid batteries to 14.4 V , voltage limited by a
>home
>> >>>made shunt controller .
>> >>>System includes a 150 Watts wind generator , to support system during
>windy
>> >>>(and usually sunless) periods
>> >>Now a wind generator would be cool, there are many windmils of huge size
>here,
>> >>one next to my house (100m or so), a BIG one that replaced 5 smaller
>ones...
>> >>It is on the coast, and it is always windy here...
>> >>How big is that thing?
>> >>JP
>> >
>> >Have you seen the windmill "farm" west of Indio, California (on I10) ?
>> >
>> >HUNDREDS of large windmill AC generators.
>> >
>> > ...Jim Thompson
>>
>> It's an unusual place- the wind just whistles through the canyons
>> there and there are dust stoms. A fair number of them seem to be down
>> for maintenance whenever I go through. I wonder if it is really more
>> cost effective than burning coal.
>
>That depends to some degree what you consider the "costs" of burning coal
>are.

I think, other than the pollution, the costs are included in the overall running cost (dead miners, etc. etc.). The pollution is a bit harder to figure, but modern plants are pretty clean. I live close to a big thermal plant and the left-wing newspapers have been running pictures of the stacks (usually with evil lighting) saying that "smoke" is rising blah blah. They've dug up old pictures with all 4 stacks running, and it's usually running at 25%; never more than 50%. Of course it's mostly steam and some CO2- on a clear day you can see nothing in the air discoloring it, just the refraction from the heat and steam trails that rapidly dissipate. The stupid new gov't has been making noises about closing the thermal plants *AND* the nuclear plants- I don't know where they think the power would come from (maybe we can buy it all and export the problem to less "responsible" people). Bleh. Even with conservation measures and some deindustrialization, population is growing at a healthy rate, and so is consumption.

Best regards,
Spehro Pefhany
--
"it's the network..." "The Journey is the reward"
speff@interlog.com Info for manufacturers: http://www.trexon.com
Embedded software/hardware/analog Info for designers: http://www.speff.com

3140. Re: Homebrew PTO/VFO question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 19:08:37 UTC
From: Brian <brianNADA@NOiquestSPAM.net>
Message-ID: <VmAgc.20057$A_4.954@newsread1.news.pas.earthlink.net>
Source record: 26726

Check out this very nice PTO/VFO from WA6OTP

http://www.wa6otp.com/pto.htm

"J Shrum" <shrumj@madisontelco.com> wrote in message
news:VJ-dnbim_5lq4hzdRVn-vA@shawneelink.net...
> I was curious if anyone has had any experience w/ homebrewing the PTO/VFO
> from
>
http://www.qrpp-i.com/projects/ka8mav/Tiny-Tornado/PTO-VFO-R1a-schematic.gif
> .
>
> I am pretty new to homebrewing, and was wondering if anyone knew of any
> problems w/ this design that I may watch for. I have read that VFO's can
be
> very tricky, but this one looks incredibly simple. I'm just looking for
> anyway to get out from under the rock that I'm bound to.
>
> Thanks for any input...
>
> James Shrum - KC9FFX
>
>

3141. QRPers - Run for the Bacon!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 19:10:09 UTC
From: Brian <brianNADA@NOiquestSPAM.net>
Message-ID: <loAgc.20143$A_4.16847@newsread1.news.pas.earthlink.net>
Source record: 26727

This April Run for the Bacon sprint is this evening. 01:00Z to 03:00Z

See http://www.fpqrp.com for details!!

Come and join the fun, you do not have to be a member to play!

--
==========
Agnus dei, qui tollis peccata mundi, dona nobis Pacem.
==========
KB9BVN/QRP QRP-L 1540 QRP-ARCI 10223
39.558 N 86.095 W Johnson Co., Indiana
GRID: EM69WN - Elecraft K1 - Attic Dipole - 5w
Member of the ARRL - SOC #400
FISTS 5695 CC 764 FPQRP #-57
==========

3142. RF Design 90s RLB article ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 19:31:20 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <clAgc.18390$fQ1.3296@newssvr22.news.prodigy.com>
Source record: 26728
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Does anyone recall seeing an article for constructing a return loss bridge
in RF Design in late 80s or early 90s? I'd like to see if I can get a
scan, I've been bitten by the RLB bug.
tnx
Hank WD5JFR

3143. Re: RF Design 90s RLB article ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 19:38:33 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <ZOAgc.21625$yD1.50337@attbi_s54>
Source record: 26729
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

> Does anyone recall seeing an article for constructing a return loss bridge
> in RF Design in late 80s or early 90s? I'd like to see if I can get a
> scan, I've been bitten by the RLB bug.

If you finished your VNA, you already have one Hank.

W4ZCB

3144. Re: DBM and constant R band pass filters.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 19:46:19 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <fWAgc.21658$yD1.50742@attbi_s54>
Source record: 26730
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

> Do I miss something ? Is it needed because of second order effects ?
> Any thought, any pointer to (preferably) detailed analysis is welcomed.
>
John Stephensen. QEX May-June 2001

W4ZCB

3145. Re: DBM and constant R band pass filters.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 19:50:28 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1085mvvtfltah74@corp.supernews.com>
Source record: 26731
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Fred Bartoli wrote:

> Hello,
>
> I have to use some DBMs in a measurement instrument and of course have to
> design the following bp filters.
>
> I have often seen recommended that the DBMs see the resistive load of a
> constant R filter (diplexer) rather that the reactive load of a more
> traditional filter.
>
> I can think of (model) the DBM mixer to the first order as follows :
>
>
> .-- +/-1 at LO frequency
> |
> |
> |
> V
> .-------. ZG Zd .--------.
> | | ___ ___ | BPF |
> VIN--+------------>| MULT |---|___|--|___|---+---| H(p) |--- VOUT
> | | | | | |
> | '------' | '-------'
> | ___ .-.
> `-|___|----. | |
> ZG | | | ZL
> .-. '-'
> | | |
> | |Zd |
> | '-' |
> I in| | |
> | | |
> V .-. |
> | | |
> | |ZL GND
> '-'
> |
> GND
> created by Andyï¿½s ASCII-Circuit v1.22.310103 Beta www.tech-chat.de
>
>
> ZG being the source impedance,

> Zd the diode dynamic resistance,
> ZL the filter input impedance,
> H(p) the BPF voltage transfer function.
> The multiplier is a high Zin, null Zout device with unity gain.
>
> I can't see any requirement in this first order model for a constant R load.
>
> Do I miss something ? Is it needed because of second order effects ?
> Any thought, any pointer to (preferably) detailed analysis is welcomed.
>
> Thanks,
> Fred.
>
>

The constant-R load is a requirement for diode-ring mixers, not double-balanced mixers in general. The diode-ring mixer acts like four switches that turn on and off as a function of the LO, RF and IF port voltages. You'd like this to just be as a function of the LO, however.

By it's nature a diode-ring mixer does exactly as good a job of mixing from the IF port to the RF port as it does going in the other direction (this can be handy for transceiver design, by the way). So when you terminate the IF (or any other port) with a non-constant R you get different voltage-current relationships at the image frequency than you do at the intended IF. These oddball voltages or currents (a) affect the mixing, and (b) get dutifully converted into energy that appears back at the RF port to get mixed _again_. Taken to extremes people with very large brains can even terminate a diode-ring mixer make a parametric amplifier from RF to IF.

My understanding is that you don't need a perfect DC to light constant-R termination: you just need to terminate for the expected frequencies out the IF port; primarily the IF and it's image (so RF +/- LO), but to be thorough you should consider the LO's odd harmonics.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

3146. Re: DBM and constant R band pass filters.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 21:17:23 UTC
From: Joerg <notthisjoergsch@removethispacbell.net>
Message-ID: <4082F162.E3CD5522@removethispacbell.net>
Source record: 26732
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Hello Fred,

A diplexer is certainly the Rolls Royce method. Elegant and impressive. But there are others.

You could also provide a buffer amp that has a matching input impedance and the mixer will be happy. One of my favorites is the AD603 if it fits the dynamic range requirements, frequency range and cost limits. That gives you a db-linear gain control of 40dB which often comes in real handy. They don't use Gilbert cells in there but a patented voltage controlled attenuator so there isn't a dynamic range penalty with gain reduction.

Regards, Joerg.

3147. Re: Homebrew PTO/VFO question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 22:40:45 UTC
From: J Shrum <shrumj@madisontelco.com>
Message-ID: <QcudnRdnqPJ0nh7dRVn-sw@shawneelink.net>
Source record: 26734

That PTO is actually exactly what I would want to build, however, ordering the kit is pretty much against the point.

Does anyone by chance have the schematic for the PTO/VFO by WA6OTP?

"Brian" <brianNADA@NOiquestSPAM.net> wrote in message news:VmAgc.20057$A_4.954@newsread1.news.pas.earthlink.net...
> Check out this very nice PTO/VFO from WA6OTP
>
> http://www.wa6otp.com/pto.htm
>
>
> "J Shrum" <shrumj@madisontelco.com> wrote in message
> news:VJ-dnbim_5lq4hzdRVn-vA@shawneelink.net...
> > I was curious if anyone has had any experience w/ homebrewing the PTO/VFO
> > from
> >
> http://www.qrpp-i.com/projects/ka8mav/Tiny-Tornado/PTO-VFO-R1a-schematic.gif
> > .
> >
> > I am pretty new to homebrewing, and was wondering if anyone knew of any
> > problems w/ this design that I may watch for. I have read that VFO's can
> be
> > very tricky, but this one looks incredibly simple. I'm just looking for
> > anyway to get out from under the rock that I'm bound to.
> >
> > Thanks for any input...
> >
> > James Shrum - KC9FFX
> >
> >
>
>

3148. Wind Generators ; was : Solar cell modules.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-18 23:11:09 UTC
From: Highland Ham <xygm0csz.wvkn6wh@ntlworld.com>
Message-ID: <v4Ngc.70$3m3.10@newsfe1-gui.server.ntli.net>
Source record: 26647
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

> Last month I went to Palm springs for the Faire, and there was no
> noticeable difference in the numbers of windmills in operation.
==========
Having seen these machines near Palm Springs ,they seem to be rather small
and of an older design.
Modern machines are much bigger (up to 2 MW rated capacity) and more
reliable.
In the Netherlands they are now planning a number of 2MW machines offshore
,approx 8 kms off the coast placed on seabed based stuctures.
Their designers are focussing on minimum maintenance (only once every 3
years) .

To date land based machines produce on average only 16% of their rated
capacity ,due to periods without adequate wind and to technical outage /
maintenance. Yet they seem profitable. In the Netherlands many farmers have
them on their land ,especially
in the northern provinces.

Frank GM0CSZ / KN6WH

3149. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 01:14:42 UTC
From: KR Williams <krw@att.biz>
Message-ID: <MPG.1aecf209eeea223398973f@news1.news.adelphia.net>
Source record: 26735
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

In article <8ABgc.23985$VG3.9293@newssvr27.news.prodigy.com>,
not@here.net says...
> X-No-Archive: yes
> "KR Williams" wrote
> : thegreatone@example.com wrote
> : > KR Williams wrote
> : > >thegreatone@example.com wrote
> : > [snip]
> : > >> Have you seen the windmill "farm" west of Indio,
> : > >> California (on I10) ?
> : > >> HUNDREDS of large windmill AC generators.
> : > >
> : > >Is that the farm between LA and (around) Palm Springs? I
> drove
> : > >through there ~five years ago and was amazed at the size of
> the
> : > >wind-farm(s?) and the number of turbines that were stopped.
> : >
> : > I haven't been able to determine if the stopped units were
> off-line
> : > for repair, or simply off-line based on grid needs. I've
> *never* seen
> : > anyone *working* on them, but I drive by there only once or
> twice a
> : > year.
> :
> : From my conversations with wind-energy proponents after seeing
> : the farm, they seem to be off-line for maintenance, and the
> : required maintenance wasn't deemed profitable. No subsidies for
> : maintenance, only development. This may have changed since the
> : generators have become cheaper, perhaps even profitable. ;-)
> : Keith
>
>
> Those Windmills, the bigger ones, cost about $1.2 million each,
> maintained is estimated at $60K per year each and there are
> hundreds of them, and from what I heard, (maybe not reliable) is
> that many of the ones that are feathered are waiting for parts.
> Bearings are the big one, thy have to tear the generator down to
> replace them, about once every five years. The bearing
> replacement is even more expensive than average!

You could easily be right. My source was from someone inside the
"renewable energy" biz. He may be overly optimistic.
...wouldn't be the first time.

--
Keith

3150. Wanted HF all Band Transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 01:53:49 UTC
From: Lushy <showbag@alphalink.com.au>
Message-ID: <40832fb4$1@news.alphalink.com.au>
Source record: 26736

Want to swap a Yeasu FT11R with all accessories for a say Kenwood 520 or
simular.
Lushy
VK3 HDL
Victoria Australia
03 59856480

3151. Need Help with ADI AT-200/AT-201 HT

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 02:09:03 UTC
From: Maxwell <maxheadspace@cox.net>
Message-ID: <2xGgc.21893$fq4.13039@lakeread05>
Source record: 26737

Greetings!

I have an ADI AT-200 and an AT-201 HT, but lost the instructions. Can anyone tell me how to program the PL tones?

Thanks much!
Max.
maxheadspace@cox.net

3152. Re: Homebrew PTO/VFO question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 02:42:36 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <w0Hgc.50969$K_.1158111@bgtnsc05-news.ops.worldnet.att.net>
Source record: 26738

"J Shrum" <shrumj@madisontelco.com> wrote in message
news:QcudnRdnqPJ0nh7dRVn-sw@shawneelink.net...
> That PTO is actually exactly what I would want to build, however, ordering
> the kit is pretty much against the point.
>
> Does anyone by chance have the schematic for the PTO/VFO by WA6OTP?

Look here: http://www.amqrp.org/kits/tin_ear/

The vfo in this simple receiver uses the same type of PTO construction. And
the manual includes a schematic.

73,

"PM"

3153. Re: questions about 433MHZ modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 02:47:13 UTC
From: John <jocjo_john@yooha.com>
Message-ID: <c5vejj02m7c@enews2.newsguy.com>
Source record: 26739

----- Original Message -----
From: "Joe" <nuisancewildlife@nospamearthlink.net>
Newsgroups: rec.radio.amateur.homebrew
Sent: Friday, April 16, 2004 7:15 PM
Subject: Re: questions about 433MHZ modules

> > Hi, Joe -
> >
> > I think the linear output is from the detector in the receiver while the
> > digital output is following an amplifier with AGC (automatic gain
> control).
> > If so, then you may find that the linear output will decrease in
amplitude
> > with distance but the digital output will stay constant until the range
is
> > so great that the signal drops into the noise. Using the decoder on the
> > digital output eliminates the noise you see when the transmitter is off.
> >
> > Sounds like a fun project.
> >
> > John
>
> Hi John,
>
> Yes, it is fun. Looks like I will be learning about PLLs too. By the
decoder
> do you mean the holtek?

Yes, that's what I meant.

> I was not going to use the encoder and decoder,
> since this is not a really critical application. I was planning on
> generating a square wave with a 555 at the transmitter data pin and then
> when the receiver detects it, take a picture. Yes, I think you are right
> about the linear pin, because I noticed the magnitude of the received
signal
> seemed to drop a little with distance, but the digital pin stayed strong
the
> whole distance when I moved the transmitter from it. The linear pin seems
to
> be much quieter tho.

Yes, it would be because of the lower gain. If you need the AGC associated
with the digital output, you might be able to use a phase detector IC on
that output to detect your 555's frequency. Maybe the phase detector output

would be quiet with no incoming carrier. On the other hand, you may not need any more than what you've already tested. If you're happy with the distance you get using the detector output, don't worry about it.

> I still haven't worked on this yet today, so off I go to work on it some
> more and maybe I can get a working circuit soon.

Good luck with it and let us know how it works when you're done.

John

3154. CW IDER

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 03:18:29 UTC
From: sw6079@aol.com
Message-ID: <25e1f0d1.0404181918.57bc81d7@posting.google.com>
Source record: 26740

Anyone know of an easy to build ider? I know a basic stamp can be used, but I don't have the programming abilities. The QST ones I've seen all use outdated components and are complex. I'm building a small broacast band beacon (low end, around 530 khz) Thanks, 73, Mike.

3155. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 04:28:58 UTC
From: Jerry Koniecki <NOspam@my.mailbox>
Message-ID: <408355B0.8BCF6208@my.mailbox>
Source record: 26741
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

KR Williams wrote:
>
> In article <c5mqgb$23pc$1@news.wplus.net>,
> pNaonStpealmtje@yahoo.com says...
> > On a sunny day (Thu, 15 Apr 2004 05:57:18 GMT) it happened
> > ehsjr@bellatlantic.net wrote in <407E2458.C40B070D@bellatlantic.net>:

...snip...

> > >Add that in, and the cost of a $15000 system is
> > >much worse - over 30,000 in a 25 year, 7% mortgage.
>
> > You have to take into account that the cost of a kWh from
> > the grid in 25 years will be a LOT higher too, if there
> > still is a grid during and after WW3 that is.
>
> That's silly economics. I do not have to take into account the
> cost of electricity in 25 years. I can wait. Solar cells are
> becoming cheaper too. When the cost of the solar cell is less
> than the cost of power from the grid I can switch, saving all of
> the negative amortization inbetween, and have a *new* system in
> 25 years, just as you're in need of replacing yours. ;-)
>
> My guess though, is that solar cells for the individual will
> never become cheaper than power from the grid, since the power
> company has access to the same technology and a *lot* better
> financing possibilities. ...and they don't have to have the pay-
> back in my lifetime.

They have access to the tech, BUT, they also have to maintain the
distribution system. Since my electricity has been unbundled,
roughly half of my cost per Kwh goes to the distribution co., not the
producer. Ice storms, drunk drivers, blown line fuses all cost money.
As well as the personel and associated benefits packages,
transportation costs of materials, etc. for maintaining the lines.
All this is avoided cost on home solar.

And...
www.solaraccess.com/news/story?storyid=6482

talking about a new discovery:

"A solar cell with the simplest possible physical structure could
achieve 50 percent efficiency or better, far higher than any yet
demonstrated in the laboratory."

It isn't cost effective for most of us yet, but the tipping point
is coming.

--
Jerry wa2rkn no email @ present

3156. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 04:52:08 UTC
From: Jerry Koniecki <NOspam@my.mailbox>
Message-ID: <40835B1F.8A503C99@my.mailbox>
Source record: 26742
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Spehro Pefhany wrote:
>
> On Sun, 18 Apr 2004 11:47:54 -0700, the renowned "Richard Henry"
> <rphenry@home.com> wrote:
>
> >
> >"Spehro Pefhany" <speffSNIP@interlogDOTyou.knowwhat> wrote in message
> >news:8rk48014b9pti1lmato1pbd10lmei12nvr@4ax.com...
> >> On Sat, 17 Apr 2004 17:45:00 -0700, the renowned Jim Thompson
> >> <thegreatone@example.com> wrote:
> >>
> >> >On Sun, 18 Apr 2004 00:35:15 GMT, Jan Panteltje
> >> ><pNaonStpealmtje@yahoo.com> wrote:
> >> >
> >> >>On a sunny day (Sun, 18 Apr 2004 01:08:04 +0100) it happened
> >"Newsgroups"
> >> >><f.dinger@ntlworld.com> wrote in <hQjgc.160$Jc5.69@newsfe1-win>:

...snip...

> >> It's an unusual place- the wind just whistles through the canyons
> >> there and there are dust stoms. A fair number of them seem to be down
> >> for maintenance whenever I go through. I wonder if it is really more
> >> cost effective than burning coal.
> >
> >That depends to some degree what you consider the "costs" of burning coal
> >are.
>
> I think, other than the pollution, the costs are included in the
> overall running cost (dead miners, etc. etc.). The pollution is a bit
> harder to figure, but modern plants are pretty clean. I live close to
> a big thermal plant and the left-wing newspapers have been running
> pictures of the stacks (usually with evil lighting) saying that
> "smoke" is rising blah blah. They've dug up old pictures with all 4
> stacks running, and it's usually running at 25%; never more than 50%.
> Of course it's mostly steam and some CO2- on a clear day you can see
> nothing in the air discoloring it, just the refraction from the heat
> and steam trails that rapidly dissipate. The stupid new gov't has been
> making noises about closing the thermal plants *AND* the nuclear
> plants- I don't know where they think the power would come from (maybe
> we can buy it all and export the problem to less "responsible"
> people). Bleh. Even with conservation measures and some
> deindustrialization, population is growing at a healthy rate, and so
> is consumption.

I assume you are talking about coal fired plants? They release particles
as well as mercury and radioactivity. There is no clean power.

--
Jerry wa2rkn no email @ present

3157. Oscillating 3rd overtone XTAL at fundamental?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 06:38:18 UTC
From: PaoloC <ollollo@hotpop.com>
Message-ID: <c5vs4g$6eoag$1@ID-199778.news.uni-berlin.de>
Source record: 26743

Hi.
I have spent part of the weekend trying to resonate al old CB XTAL at its fundamental frequency.

The XTAL is labelled 27.125 MHz, with a fundamental of about 9.041 MHz, which falls into 18m HAM band when multiplied by two. I assume 27MHz XTALs are 3rd overtone.

Since the circuitry is/will be digital, the oscillator is one gate of a 74HC14. 470ohm resistor from gate output to the parallel of 1Mohm//XTAL. 10pF and 33pF (from the junkbox) capacitors to ground on each side of the XTAL.

No oscillation (I have no oscilloscope, I use my HF receiver to troubleshoot oscillators at known frequencies).

If I replace the XTAL with a 10.000 MHz rock the oscillation is loud and clear.

I have never built something with an overtone XTAL. I know that I need an output resonating circuit if I want to extract the 3rd harmonic. Do I need the same if I want the fundamental?

Are overtone XTALs "harder" to resonate?

Are those old CB XTALs 3rd overtone?

I assume my 27MHz XTAL works. :-) Thanks in advance for all suggestions,
Paolo IK1ZYW

3158. XTAL oscillator with a XOR gate

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 06:53:04 UTC
From: PaoloC <ollollo@hotpop.com>
Message-ID: <c5vt05$66npd$1@ID-199778.news.uni-berlin.de>
Source record: 26744

[Slightly off-topic request]

Hi.
As of the other post of mine, another part of my weekend was spent trying to get a XOR gate to oscillate with a XTAL.

I have a working 74HC14 oscillator:
"One gate of a 74HC14. 470ohm resistor from gate output to the parallel of 1Mohm//XTAL. 10pF and 33pF (from the junkbox) capacitors to ground on each side of the XTAL."

Since my project calls for a frequency doubler, which I want to implement with a XOR gate, I wanted to use one XOR gate of a 74HC86 as oscillator. Remaining gates would work as buffer, delay line, digital mixer.

(I have Googled newsgroups and found an interesting discussion about XOR frequency doublers, so I am aware of its limitations.)

So I moved the oscillator circuitry (R; C; R, XTAL; C) from the 74HC14 to the 74HC86, pulling the other input of the XOR gate to "1", so that I would produce an inverter.

Nothing happens. I used a 10.0 MHz XTAL.

I understand that the 74HC14 has Schmitt trigger inputs and that a 74HC86 might have higher propagation delays. Still, is it possible to use a XOR gate as an inverter and oscillator? Do I overlook something?

In the end I recovered the 74HC14 oscillator, but this adds one component to the final circuit I have in mind that wastes energy, space and is underutilized.

Looking forward to your always helpful replies!
Paolo IK1ZYW

3159. Re: Oscillating 3rd overtone XTAL at fundamental?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 07:01:12 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c5vtfohpv1@freenet9.carleton.ca>
Source record: 26746

PaoloC (ollollo@hotpop.com) writes:
> Hi.
> I have spent part of the weekend trying to resonate al old CB XTAL at
> its fundamental frequency.
>
> The XTAL is labelled 27.125 MHz, with a fundamental of about 9.041 MHz,
> which falls into 18m HAM band when multiplied by two. I assume 27MHz
> XTALs are 3rd overtone.
>
> Since the circuitry is/will be digital, the oscillator is one gate of a
> 74HC14. 470ohm resistor from gate output to the parallel of 1Mohm//XTAL.
> 10pF and 33pF (from the junkbox) capacitors to ground on each side of
> the XTAL.
>
> No oscillation (I have no oscilloscope, I use my HF receiver to
> troubleshoot oscillators at known frequencies).
>
> If I replace the XTAL with a 10.000 MHz rock the oscillation is loud and
> clear.
>
> I have never built something with an overtone XTAL. I know that I need
> an output resonating circuit if I want to extract the 3rd harmonic. Do I
> need the same if I want the fundamental?
>
> Are overtone XTALs "harder" to resonate?
>
> Are those old CB XTALs 3rd overtone?
>
> I assume my 27MHz XTAL works. :-) Thanks in advance for all suggestions,
> Paolo IK1ZYW

Could the crystal be a receive crystal? CB crystals tended to show
the channel number or the frequency of the channel, and so if you simply
looked at the marked frequency, it would not tell you if it's for
transmit or receive. Though the ones I've seen did mark them with
"R" or "T". The point is that if it's a receive crystal, it wouldn't
be 1/3 of 27.125 but 27.125-IF and then divided by three.

I'd say there shouldn't be any problem getting an overtone crystal to
oscillate on the fundamental; if there's any problem it's getting an
overtone crystal to oscillate on its overtone frequency. Of course,
they usually oscillate at a slightly different frequency, so maybe
you need to tune around a bit.

Or maybe the circuit values are wrong for that crystal or frequency.
Or the crystal is indeed dead.

Michael VE2BVW

3160. Re: Need replacement CRT for Tek 492 Spectrum Analyser

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 07:02:09 UTC
From: John Miles <jmiles@pop.removethistomailme.net>
Message-ID: <MPG.1aed194b625e14d19896af@news-central.giganews.com>
Source record: 26745

In article <408119cb$0$95318$65c69314@mercury.nildram.net>, "Tom"
<m3cbzATmapctDOTcom> says...
> The title says it all :). Need a replacement tube for a 492 as the existing
> one is breaking down. So fails after 30 minutes of use.
>

Tom Neumann at http://www.tektrotom.de/web/intro.html usually has these
available. You can email him at info (at) tektrotom.de .

Tom's a good guy to work with, in my experience -- he has lots of Tek
490-series parts at reasonable prices.

Other possible sources: http://www.sphere.bc.ca/ , and Deane Kidd
(dektyr@teleport.com).

-- jm

---
http://www.qsl.net/ke5fx
Note: My E-mail address has been altered to avoid spam

3161. Re: Need replacement CRT for Tek 492 Spectrum Analyser

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 09:42:36 UTC
From: Highland Ham <xygm0csz.wvkn6wh@ntlworld.com>
Message-ID: <9tXgc.206$I%3.0@newsfe1-win>
Source record: 26688

> The title says it all :). Need a replacement tube for a 492 as the
existing
> one is breaking down. So fails after 30 minutes of use.
==========
Are you sure it is the CRT and not the power supply to it ; is the HV OK ?

Frank GM0CSZ / KN6WH

3162. Re: CW IDER

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 09:58:53 UTC
From: Scott <acepilot@bloomer.net>
Message-ID: <4083A2DD.8050905@bloomer.net>
Source record: 26651

Hamtronics has CW ID modules. Their CWID-2 IDer uses an EPROM and they
will program it for you.
http://www.hamtronics.com/

If you decide to build from scratch, Jameco probably has every
"obsolete" part you would need, but if it is (E)(EE) PROM based, you'd
have to build a programmer as well.
http://www.jameco.com/

Scott

zerobeat wrote:
> Anyone know of an easy to build ider? I know a basic stamp can be
> used, but I don't have the programming abilities. The QST ones I've
> seen all use outdated components and are complex. I'm building a
> small broacast band beacon (low end, around 530 khz) Thanks, 73,
> Mike.

3163. Re: CW IDER

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 10:06:54 UTC
From: Rv! <no@spam.here.thanks>
Message-ID: <1082369217.16918.0@doris.uk.clara.net>
Source record: 26648

> Anyone know of an easy to build ider?

Try www.k1el.com as he has some excellent projects
and CW keyers at very good prices. I own a K9 (if I remember right)
and it's excellent.

Rv!

3164. Re: Oscillating 3rd overtone XTAL at fundamental?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 10:12:40 UTC
From: sw6079@aol.com
Message-ID: <25e1f0d1.0404190212.5446d5e3@posting.google.com>
Source record: 26649

PaoloC <ollollo@hotpop.com> wrote in message
news:<c5vs4g$6eoag$1@ID-199778.news.uni-berlin.de>...
> Hi.
> I have spent part of the weekend trying to resonate al old CB XTAL at
> its fundamental frequency.
>

> need the same if I want the fundamental?
>
> Are overtone XTALs "harder" to resonate?
>
> Are those old CB XTALs 3rd overtone?
>
> I assume my 27MHz XTAL works. :-) Thanks in advance for all suggestions,
> Paolo IK1ZYW
Yup They are 3rd overtone. Try a little series inductance with the
rock, and maybe a few pf of capacitance in parallel. I seem to
remember these being cut for a 25 pf load versus the more common 330
or 32 pf load of fundamental rocks, but the rock may also be defective
(I've seen quite a few) Good luck, Mike.

3165. Re: Oscillating 3rd overtone XTAL at fundamental?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 10:22:30 UTC
From: sw6079@aol.com
Message-ID: <25e1f0d1.0404190222.6471ec43@posting.google.com>
Source record: 26650

Yup, they are 3rd. Try a little series inductance or parallel capacitance. A few pf of cap. may do the trick. Basically these were usually cut for 25 pf load versus the usual 32 or so of fundamental rocks. BTW the fundamental will not be at exactly one third of the overtone freq. (I don't remember why) You may very well have a bad xtal too, it happens quite often. Good Luck, Mike

3166. Re: Wind Generators ; was : Solar cell modules.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 11:02:15 UTC
From: Winfield Hill <Winfield_member@newsguy.com>
Message-ID: <c60bjn028e3@drn.newsguy.com>
Source record: 26652
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Highland Ham wrote...
>
> Having seen these machines near Palm Springs, they seem to be
> rather small and of an older design.

I wonder if they shouldn't be replaced, that's prime wind territory.

> In the Netherlands many farmers have them on their land, especially
> in the northern provinces.

Do they rent the space to the wind-generator owners, or do they each
install and maintain them themselves? Is there a subsidized rate for
the sale of electricity to the grid?

Thanks,
- Win

whill_at_picovolt-dot-com

3167. Re: CW IDER

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 12:22:17 UTC
From: "G.Beat" <now9spamgb@no.comcast.spam.net>
Message-ID: <YvPgc.27288$yD1.68819@attbi_s54>
Source record: 26653

"zerobeat" <sw6079@aol.com> wrote in message
news:25e1f0d1.0404181918.57bc81d7@posting.google.com...
> Anyone know of an easy to build ider? I know a basic stamp can be
> used, but I don't have the programming abilities. The QST ones I've
> seen all use outdated components and are complex. I'm building a
> small broacast band beacon (low end, around 530 khz) Thanks, 73,
> Mike.

You can also go the ComSpec ID-8 route (which is fully programmable)
http://www.com-spec.com/id8.htm

http://www.com-spec.com/id8test.htm

w9gb

3168. Re: CW IDER

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 12:46:10 UTC
From: xpyttl <xpyttl_NOSPAM@earthling.net>
Message-ID: <1087ignjgdaee6f@corp.supernews.com>
Source record: 26654

If you don't want to spend an afternoon building a programmer for a PIC, AVR or whatever, be prepared to pay the long dollar. There are few folks these days who would build an IDer from discrete circuits. However, it's a pain in the butt trying to make an IDer programmable for someone who doesn't want to program!

Understand that the "programming" doesn't have to be the barrier you suspect. Taking the PIC as an example, the PIC itself is under $3 depending on the model you choose. It needs 5 volts (a 78L05 and a couple of caps) or a 3 volt battery. If you are nutty about timing accuracy, it needs a crystal, 44 cents at DigiKey, or 98 cents if you want tiny. For an IDer, the only other thing you need is an interface to your audio, probably a transistor and a couple of resistors. If you want to build it up the "traditional" way, you will need a fistful of logic chips and a whole armload of diodes, or an array of DIP switches. Nobody would do that anymore, it's too exepnsive and complicated.

To program a PIC, there are dozens of circuits out there. Probably the one that got most people started is the No Parts PIC programmer from Covington Innovations, because you got to have a pretty lame junk box not to have all the parts you need. Even if you have nothing, you can go down to Radio Shack and get all the parts for under $15, even at their outrageous prices. There are simpler designs, as well. Commercial programmers range from about $20 to over $100. All of the necessary software is available free. Once you invest in the programming capability you now can make not only IDers, but keyers, CW readers, autotuners, synthesizers, and on and on and on.

I used the PIC only as an example. There are folks who would suggest that an AVR, HC908, or whatever is better. None of them change the equation very much. The PIC is one of the simpler parts and has been around a while, so there are hundreds of examples out there for all sorts of applications.

An IDer is a good learning application -- it's hard to think of something simpler. Unless you expect that this will be your last project, it's probably worthwhile to bite the bullet and dive in..

..

"zerobeat" <sw6079@aol.com> wrote in message
news:25e1f0d1.0404181918.57bc81d7@posting.google.com...
> Anyone know of an easy to build ider? I know a basic stamp can be
> used, but I don't have the programming abilities. The QST ones I've
> seen all use outdated components and are complex. I'm building a
> small broacast band beacon (low end, around 530 khz) Thanks, 73,
> Mike.

3169. Re: RF Design 90s RLB article ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 13:15:18 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c60jd6pcn1@titan.btinternet.com>
Source record: 26655
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

> Does anyone recall seeing an article for constructing a return loss bridge
> in RF Design in late 80s or early 90s? I'd like to see if I can get a
> scan, I've been bitten by the RLB bug.
==========

Isn't a return-loss bridge electrically exactly the same as the
common-or-garden SWR meter with the meter scale calibrated in something
different from SWR = 1 to infinity?

Same applies to reflection coefficient bridge.

3170. wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 14:52:05 UTC
From: WB0CTE <letourneau@wiktel.com>
Message-ID: <pIRgc.644$m3.29720@news7.onvoy.net>
Source record: 26657

Want one or two variable capacitors,three or four ganged 350 or more per section. Thease usually came out of older communications or broadcast receivers that had a rf stage.
Wayne wb0cte

3171. Re: Oscillating 3rd overtone XTAL at fundamental?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 14:52:14 UTC
From: JLB <IHateSpam@nospam.net>
Message-ID: <pIRgc.25943$pk5.6238@fe03.usenetserver.com>
Source record: 26656

Can't quite tell from your description what your circuit is, but if I recall correctly back when i was doing hardware design a crystal oscillator using logic gates required two gates. I used to use three---two for the oscillator and the third for a buffer.

The two inverters where tied together with a capacitor between them. Then the crystal was placed from the input of the first gate to the output of the second. The output of the second also went to the buffer stage.

!-----------------crystal-----------|
Like this: - gate one---capacitor---gate two---gate three---circuit output

As I recall, there was also a resistor from the input of gate one to ground, and from the output of gate two to ground.

I do not recall the capacitor or resistor values, but when properly built this circuit never failed to oscillate with any crystal within the range of the gates (fundamental mode only).

Jim
N8EE
"PaoloC" <ollollo@hotpop.com> wrote in message news:c5vs4g$6eoag$1@ID-199778.news.uni-berlin.de...
> Hi.
> I have spent part of the weekend trying to resonate al old CB XTAL at
> its fundamental frequency.
>
> The XTAL is labelled 27.125 MHz, with a fundamental of about 9.041 MHz,
> which falls into 18m HAM band when multiplied by two. I assume 27MHz
> XTALs are 3rd overtone.
>
> Since the circuitry is/will be digital, the oscillator is one gate of a
> 74HC14. 470ohm resistor from gate output to the parallel of 1Mohm//XTAL.
> 10pF and 33pF (from the junkbox) capacitors to ground on each side of
> the XTAL.
>
> No oscillation (I have no oscilloscope, I use my HF receiver to
> troubleshoot oscillators at known frequencies).
>
> If I replace the XTAL with a 10.000 MHz rock the oscillation is loud and
> clear.
>
> I have never built something with an overtone XTAL. I know that I need
> an output resonating circuit if I want to extract the 3rd harmonic. Do I
> need the same if I want the fundamental?

>
> Are overtone XTALs "harder" to resonate?
>
> Are those old CB XTALs 3rd overtone?
>
> I assume my 27MHz XTAL works. :-) Thanks in advance for all suggestions,
> Paolo IK1ZYW

3172. Re: RF Design 90s RLB article ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 14:56:37 UTC
From: wa0goz@arrl.net
Message-ID: <4083E8A4.75B8@arrl.net>
Source record: 26659
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Here is a newsgroup article I saved. I downloaded all of the RFD
programs from this site. Go here. Unwrap the URL.

Henry
==========
http://communities.msn.com/ElectricalEngineering/files.msnw?fc_p=%2FRF%20Design%20Legacy%2
0Software&fc_a=0

Date: Tue, 24 Apr 2001 13:30:11 -0700
From: "Neil" <neil@aade.com>
To: "Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>
Subject: [96966] Re: MSDOS BASIC software archive and RF Design Mag
software archive

For all those who asked about the RF design files:

Click on the "Join Now" icon in upper right corner of page and go from
there.
Involves getting MSN passport which is just e-mail address at
hotmail.com
and password of your choice.

There are nearly a hundred files so can't forward them but could any
single
file from list on that page. they are named RFDXXYY.ZIP where XXis month
and
YY is year.

I downloaded them by right clicking on each and chosing "save target
as".
Some reason it insisted on saving it as xxxx.ZIP.zip so I edited out the
..ZIP from each save as so it became xxxx.zip.

Neil
http://www.aade.com
mailto:neil@aade.com
Almost All Digital Electronics
1412 Elm St. SE
Auburn, WA 98092
253-351-9316

3173. Re: XTAL oscillator with a XOR gate

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 15:02:22 UTC
From: JLB <IHateSpam@nospam.net>
Message-ID: <YRRgc.26000$pk5.19092@fe03.usenetserver.com>
Source record: 26658

Hello again.

Go back to fundamentals. An oscillation occurs when there is positive feedback with a circuit gain of 1. That is, the signal is not inverted at the desired oscillation frequency. Another way to say this is that the phase of the signal at the input and output are the same. If the gain is less than one, the oscillation will die out---inother words it will not oscillate at all. If the gain is greater than one the circuit will 'lock up' at either 0 volts or the power supply voltage.

Most oscilaltors have some type of phase shift device between the input and output to ensure that the phase of the input and oputpuit signal are the same.

Note that in some circuits the feedback and phase shift may not be obvious. A vacuum tube oscillator, for example. Here the feedback is sometimes provided by the capacitance inside the tube.

Everything must be just right for the oscillation to occur and be stable.

With an oscillator built from inverting logic gates, you need two gates so there is no overall phase inversion through the gates. If you are using XOR gates, I would recommend tying one of the input lines on each gate high, That way it will act as an logic inverter.

Jim
N8EE

"PaoloC" <ollollo@hotpop.com> wrote in message
news:c5vt05$66npd$1@ID-199778.news.uni-berlin.de...
> [Slightly off-topic request]
>
> Hi.
> As of the other post of mine, another part of my weekend was spent
> trying to get a XOR gate to oscillate with a XTAL.
>
> I have a working 74HC14 oscillator:
> "One gate of a 74HC14. 470ohm resistor from gate output to the parallel
> of 1Mohm//XTAL. 10pF and 33pF (from the junkbox) capacitors to ground on
> each side of the XTAL."
>
> Since my project calls for a frequency doubler, which I want to
> implement with a XOR gate, I wanted to use one XOR gate of a 74HC86 as
> oscillator. Remaining gates would work as buffer, delay line, digital
mixer.
>

> (I have Googled newsgroups and found an interesting discussion about XOR
> frequency doublers, so I am aware of its limitations.)
>
> So I moved the oscillator circuitry (R; C; R, XTAL; C) from the 74HC14
> to the 74HC86, pulling the other input of the XOR gate to "1", so that I
> would produce an inverter.
>
> Nothing happens. I used a 10.0 MHz XTAL.
>
> I understand that the 74HC14 has Schmitt trigger inputs and that a
> 74HC86 might have higher propagation delays. Still, is it possible to
> use a XOR gate as an inverter and oscillator? Do I overlook something?
>
> In the end I recovered the 74HC14 oscillator, but this adds one
> component to the final circuit I have in mind that wastes energy, space
> and is underutilized.
>
> Looking forward to your always helpful replies!
> Paolo IK1ZYW
>

3174. Re: wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 15:32:38 UTC
From: Brian <brianNADA@NOiquestSPAM.net>
Message-ID: <qiSgc.2342$e4.1723@newsread2.news.pas.earthlink.net>
Source record: 26660

Try Ocean State Electronics.

http://www.oselectronics.com/ose_p96.htm

Also, Fair Radio Sales in Columbus Ohio has been known to carry them.

http://www.fairradio.com/

"WB0CTE" <letourneau@wiktel.com> wrote in message
news:pIRgc.644$m3.29720@news7.onvoy.net...
> Want one or two variable capacitors,three or four ganged 350 or more per
> section. Thease usually came out of older communications or broadcast
> receivers that had a rf stage.
> Wayne wb0cte
>
>

3175. Re: Oscillating 3rd overtone XTAL at fundamental?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 15:39:07 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c60rqr$b6a$1@freenet9.carleton.ca>
Source record: 26661

"JLB" (IHateSpam@nospam.net) writes:
> Can't quite tell from your description what your circuit is, but if I recall
> correctly back when i was doing hardware design a crystal oscillator using
> logic gates required two gates. I used to use three---two for the
> oscillator and the third for a buffer.
>
> The two inverters where tied together with a capacitor between them. Then
> the crystal was placed from the input of the first gate to the output of the
> second. The output of the second also went to the buffer stage.
>
>
> !-----------------crystal------------|
> Like this: - gate one---capacitor---gate two---gate three---circuit
> output
>
> As I recall, there was also a resistor from the input of gate one to ground,
> and from the output of gate two to ground.
>
> I do not recall the capacitor or resistor values, but when properly built
> this circuit never failed to oscillate with any crystal within the range of
> the gates (fundamental mode only).
>
> Jim
> N8EE

That was a standard oscillator with TTL. I used a 7400, and 470ohm resistors
from input to output of each gate. No coupling capacitor was needed, though
there was a low value cap in series with the crystal for load capacitance.
(The resistors linearized the gates.)

There were obviously variations on the theme, and your suggestion was
one of them.

And as you say, these tended to oscillate with most crystals. I had one
built up as a module, so I'd have a general purpose oscillator read,
to check crystals or as a signal source.

But, for some reason, when they moved to CMOS oscillators, the norm
became one gate, with a feedback resistor and a pair of capacitors, one
from input to ground, and the other from output to ground.

Michael VE2BVW

> "PaoloC" <ollollo@hotpop.com> wrote in message
> news:c5vs4g$6eoag$1@ID-199778.news.uni-berlin.de...
>> Hi.

>> I have spent part of the weekend trying to resonate al old CB XTAL at
>> its fundamental frequency.
>>
>> The XTAL is labelled 27.125 MHz, with a fundamental of about 9.041 MHz,
>> which falls into 18m HAM band when multiplied by two. I assume 27MHz
>> XTALs are 3rd overtone.
>>
>> Since the circuitry is/will be digital, the oscillator is one gate of a
>> 74HC14. 470ohm resistor from gate output to the parallel of 1Mohm//XTAL.
>> 10pF and 33pF (from the junkbox) capacitors to ground on each side of
>> the XTAL.
>>
>> No oscillation (I have no oscilloscope, I use my HF receiver to
>> troubleshoot oscillators at known frequencies).
>>
>> If I replace the XTAL with a 10.000 MHz rock the oscillation is loud and
>> clear.
>>
>> I have never built something with an overtone XTAL. I know that I need
>> an output resonating circuit if I want to extract the 3rd harmonic. Do I
>> need the same if I want the fundamental?
>>
>> Are overtone XTALs "harder" to resonate?
>>
>> Are those old CB XTALs 3rd overtone?
>>
>> I assume my 27MHz XTAL works. :-) Thanks in advance for all suggestions,
>> Paolo IK1ZYW
>
>
>

3176. Re: CW IDER

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 15:42:12 UTC
From: marsgal42@hotmail.com
Message-ID: <d42b5a72.0404190742.46be5f78@posting.google.com>
Source record: 26662

sw6079@aol.com (zerobeat) wrote in message
news:<25e1f0d1.0404181918.57bc81d7@posting.google.com>...
> Anyone know of an easy to build ider? I know a basic stamp can be
> used, but I don't have the programming abilities. The QST ones I've
> seen all use outdated components and are complex. I'm building a
> small broacast band beacon (low end, around 530 khz) Thanks, 73,
> Mike.

Parallax have already produced Application Note 8,
which does exactly what you need. You just have to
change one line to have it send the message you want.
Please explain how this is difficult.

Laura Halliday VE7LDH "Que les nuages soient notre
Grid: CN89mg pied a terre..."
ICBM: 49 16.05 N 122 56.92 W - Hospital/Shafte

3177. Re: XTAL oscillator with a XOR gate

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 15:45:38 UTC
From: JLB <IHateSpam@nospam.net>
Message-ID: <tuSgc.26235$pk5.9358@fe03.usenetserver.com>
Source record: 26663

Some further comments...

Most oscillators that use a single active device (transistor or tube) are linear analog circuits. You are trying to use a nonlinear (that is, digital) device in an analog application.

The circuit using two inverting gates chasing each other's tail is called a ring oscillator. It can be made to work without a crystal but will be relatively unstable. Most such circuits I have seen using a crystal are in non ciritical applications. I suspect that it will be not too stable (temperature wise) and may not be suitable for use in a radio circuit. Also, you will need to use a good filter becasue the signal will be full of harmonics.

Jim
N8EE

"PaoloC" <ollollo@hotpop.com> wrote in message
news:c5vt05$66npd$1@ID-199778.news.uni-berlin.de...
> [Slightly off-topic request]
>
> Hi.
> As of the other post of mine, another part of my weekend was spent
> trying to get a XOR gate to oscillate with a XTAL.
>
> I have a working 74HC14 oscillator:
> "One gate of a 74HC14. 470ohm resistor from gate output to the parallel
> of 1Mohm//XTAL. 10pF and 33pF (from the junkbox) capacitors to ground on
> each side of the XTAL."
>
> Since my project calls for a frequency doubler, which I want to
> implement with a XOR gate, I wanted to use one XOR gate of a 74HC86 as
> oscillator. Remaining gates would work as buffer, delay line, digital
mixer.
>
> (I have Googled newsgroups and found an interesting discussion about XOR
> frequency doublers, so I am aware of its limitations.)
>
> So I moved the oscillator circuitry (R; C; R, XTAL; C) from the 74HC14
> to the 74HC86, pulling the other input of the XOR gate to "1", so that I
> would produce an inverter.
>
> Nothing happens. I used a 10.0 MHz XTAL.
>
> I understand that the 74HC14 has Schmitt trigger inputs and that a

> 74HC86 might have higher propagation delays. Still, is it possible to
> use a XOR gate as an inverter and oscillator? Do I overlook something?
>
> In the end I recovered the 74HC14 oscillator, but this adds one
> component to the final circuit I have in mind that wastes energy, space
> and is underutilized.
>
> Looking forward to your always helpful replies!
> Paolo IK1ZYW
>

3178. Re: Oscillating 3rd overtone XTAL at fundamental?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 15:53:13 UTC
From: JLB <IHateSpam@nospam.net>
Message-ID: <ABSgc.26272$pk5.9387@fe03.usenetserver.com>
Source record: 26664

"Michael Black" <et472@FreeNet.Carleton.CA> wrote in message
news:c60rqr$b6a$1@freenet9.carleton.ca...
>
> But, for some reason, when they moved to CMOS oscillators, the norm
> became one gate, with a feedback resistor and a pair of capacitors, one
> from input to ground, and the other from output to ground.
>
Oh, yes. That rang a bell.

CMOS logic is easier to get to work as an analog device than TTL. At least for the good ol' RCA 4000 series. I am not familiar with the newer 74HC00 series to judge its performance. I would suspect that the 'bias' resistors would have to be carefully chosen and that it would be sensitive to both the crystal frequency and the ambient temperature.

When I was doing circuit desgin everyone most were still using TTL. The 74LS00 series was the hot item at the time.

Just from a logical viewpoint (pun not intended, by the way) I still think he should try using two gates in a ring circuit.

Jim
N8EE

3179. Re: XTAL oscillator with a XOR gate

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 16:22:31 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1087v5tat346q0a@corp.supernews.com>
Source record: 26665

PaoloC wrote:

> [Slightly off-topic request]
>
> Hi.
> As of the other post of mine, another part of my weekend was spent
> trying to get a XOR gate to oscillate with a XTAL.
>
> I have a working 74HC14 oscillator:
> "One gate of a 74HC14. 470ohm resistor from gate output to the parallel
> of 1Mohm//XTAL. 10pF and 33pF (from the junkbox) capacitors to ground on
> each side of the XTAL."
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> Since my project calls for a frequency doubler, which I want to
> implement with a XOR gate, I wanted to use one XOR gate of a 74HC86 as
> oscillator. Remaining gates would work as buffer, delay line, digital
> mixer.
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> (I have Googled newsgroups and found an interesting discussion about XOR
> frequency doublers, so I am aware of its limitations.)
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> So I moved the oscillator circuitry (R; C; R, XTAL; C) from the 74HC14
> to the 74HC86, pulling the other input of the XOR gate to "1", so that I
> would produce an inverter.
>
> Nothing happens. I used a 10.0 MHz XTAL.
>
> I understand that the 74HC14 has Schmitt trigger inputs and that a
> 74HC86 might have higher propagation delays. Still, is it possible to
> use a XOR gate as an inverter and oscillator? Do I overlook something?
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> In the end I recovered the 74HC14 oscillator, but this adds one
> component to the final circuit I have in mind that wastes energy, space
> and is underutilized.
>
> Looking forward to your always helpful replies!
> Paolo IK1ZYW
>

Frankly I'm surprised that you're getting it to work at all with the
74HC14. I'd recommend that you use a 74HCU04 (an _unbuffered_
inverter), or a transistor oscillator with an output tuned to get the
signal strong enough to tickle a CMOS gate.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

3180. Re: XTAL oscillator with a XOR gate

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 16:57:00 UTC
From: Chuck Olson <chuckolson01@REMOVETHIScomcast.net>
Message-ID: <wxTgc.28439$ru4.27412@attbi_s52>
Source record: 26666

"PaoloC" <ollollo@hotpop.com> wrote in message
news:c5vt05$66npd$1@ID-199778.news.uni-berlin.de...
> [Slightly off-topic request]
>
> Hi.
> As of the other post of mine, another part of my weekend was spent
> trying to get a XOR gate to oscillate with a XTAL.
>
> I have a working 74HC14 oscillator:
> "One gate of a 74HC14. 470ohm resistor from gate output to the parallel
> of 1Mohm//XTAL. 10pF and 33pF (from the junkbox) capacitors to ground on
> each side of the XTAL."
>
> Since my project calls for a frequency doubler, which I want to
> implement with a XOR gate, I wanted to use one XOR gate of a 74HC86 as
> oscillator. Remaining gates would work as buffer, delay line, digital
mixer.
>
> (I have Googled newsgroups and found an interesting discussion about XOR
> frequency doublers, so I am aware of its limitations.)
>
> So I moved the oscillator circuitry (R; C; R, XTAL; C) from the 74HC14
> to the 74HC86, pulling the other input of the XOR gate to "1", so that I
> would produce an inverter.
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> Nothing happens. I used a 10.0 MHz XTAL.
>
> I understand that the 74HC14 has Schmitt trigger inputs and that a
> 74HC86 might have higher propagation delays. Still, is it possible to
> use a XOR gate as an inverter and oscillator? Do I overlook something?
>
> In the end I recovered the 74HC14 oscillator, but this adds one
> component to the final circuit I have in mind that wastes energy, space
> and is underutilized.
>
> Looking forward to your always helpful replies!
> Paolo IK1ZYW
>
Yes, you can get each XOR of the 74HC86 to work as an inverting stage by
tying one input high. Then you can get it to act like a linear inverting
amplifier by putting a 1 Meg resistor from output to the other input. Now,
if you have two of these linear inverting amplifiers in cascade, a feedback
path from the second output through a crystal to the first input should
produce oscillation. You may even find that just one of the linear

inverting stages will be sufficient, since there will be a phase shift if you put a 30pf capacitor in series with the crystal. You can control the feedback with the capacitors to ground that you mentioned.

To run a doubler, you need a non-symmetrical square wave or pulse waveform, since a symmetrical square wave has no second harmonic content (only odd harmonics). With vacuum tube amplifiers, this was called Class C operation, since conduction occurred for considerable less than 1/2 the cycle and doubling was easy. Doubling requires about 90 degree conduction (1/4 cycle).

You should get yourself an oscilloscope, if you are a sighted person.

Chuck

3181. Re: Need replacement CRT for Tek 492 Spectrum Analyser

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 16:59:10 UTC
From: Rv! <no@spam.here.thanks>
Message-ID: <1082393951.6672.0@damia.uk.clara.net>
Source record: 26667

FYI.
http://cgi.ebay.co.uk/ws/eBayISAPI.dll?ViewItem&item=3810870866

3182. Re: Homebrew PTO/VFO question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 17:46:57 UTC
From: Brian <brianNADA@NOiquestSPAM.net>
Message-ID: <lgUgc.520$eZ5.502@newsread1.news.pas.earthlink.net>
Source record: 26668

Why is ordering the kit against the point?

It's a manhattan style construction product. All you get is a baggie of
parts, the schematic, and some PCBoard material to work with. A fun and
challenging build no matter how you look at it.

"J Shrum" <shrumj@madisontelco.com> wrote in message
news:QcudnRdnqPJ0nh7dRVn-sw@shawneelink.net...
> That PTO is actually exactly what I would want to build, however, ordering
> the kit is pretty much against the point.
>
> Does anyone by chance have the schematic for the PTO/VFO by WA6OTP?
>
>
> "Brian" <brianNADA@NOiquestSPAM.net> wrote in message
> news:VmAgc.20057$A_4.954@newsread1.news.pas.earthlink.net...
> > Check out this very nice PTO/VFO from WA6OTP
> >
> > http://www.wa6otp.com/pto.htm
> >
> >
> > "J Shrum" <shrumj@madisontelco.com> wrote in message
> > news:VJ-dnbim_5lq4hzdRVn-vA@shawneelink.net...
> > > I was curious if anyone has had any experience w/ homebrewing the
> PTO/VFO
> > > from
> > >
> >
>
http://www.qrpp-i.com/projects/ka8mav/Tiny-Tornado/PTO-VFO-R1a-schematic.gif
> > > .
> > >
> > > I am pretty new to homebrewing, and was wondering if anyone knew of
any
> > > problems w/ this design that I may watch for. I have read that VFO's
can
> > be
> > > very tricky, but this one looks incredibly simple. I'm just looking
for
> > > anyway to get out from under the rock that I'm bound to.
> > >
> > > Thanks for any input...
> > >
> > > James Shrum - KC9FFX
> > >

> > >
> >
> >
>
>

3183. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 17:58:38 UTC
From: "Fred B. McGalliard" <frederick.b.mcgalliard@boeing.com>
Message-ID: <HwFJ9p.L7H@news.boeing.com>
Source record: 26670
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Roger has been listening to those who have a nice tidy explanation of
everything. Sometime you want to try to explain to him how come our lettuce
is so cheap.

"Roger Gt" <not@here.net> wrote in message
news:fLTgc.38581$Xr3.21091@newssvr29.news.prodigy.com...
...
> Is that why 18% of inmates in the Oregon prison system are
> illegals? Nearly one third of petty criminals in Southern Ca are also
> illegals.

Actually, this probably has more to do with the great public defender they
are likely to get.

> You haven't got the perspective! The sleep on the streets and
> hang out at businesses hoping to be offered work and have
> destroyed whole neighborhoods.

Well, I lived down in Orange County CA for a long time. I must admit that
there are some offensive things going on, but most of the illegals I know
about are not the quintessential Hobos of our modern society. Too much risk
in coming above "the man's" radar. They hang with their extended families,
and out in the farming districts where they get seasonal work. Big
population in Colorado for some reason.

> The problem is spreading and it is
> really bad the nearer you get to the boarder. Farmers along the
> border have their crops and equipment stolen or spoiled and have
> to maintain a security patrol to keep their homes from being
> broken into. These people are criminals and do not respect any
> laws.

Beg pardon. These people, except for course for the drug mules that we pay
to bring us our cheap drugs, are the brightest, best, and most ambitious of
a seriously abused population. We might solve 90% of our problems, at the
cost of a bit more expensive lettuce, by making them semi legals and
preventing their abuse.

... (subject. Paying taxes.)
> Not then, nor now! They are a major burden on the state to the
> tune of about $4b a year!

Whew! Is that all? They are responsible for around 12 billion in company
proffits, of which they get around 3 billion, and out of that they pay
around half billion in sales taxes. Actually I expect their employers
collect federal and state tax from their salary, and pay it to themselves. I

think that overall our illegal emegrants likely provide us more benifit than cost, and on top of that they are such an easy target for racial and cultural hatred. Easy to blame our total failure to provide for our own poor by calling them all illegals because some few are, horror of horrors, unable to get legally admitted to our official version of heaven.

BTB, I just made up the numbers for the heck of it. Sounds reasonable to me, so find better ones.

3184. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 18:05:29 UTC
From: Richard Henry <rphenry@home.com>
Message-ID: <KxUgc.24273$ab3.3968@fed1read02>
Source record: 26669
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Roger Gt" <not@here.net> wrote in message
news:fLTgc.38581$Xr3.21091@newssvr29.news.prodigy.com...

> The savages who lived here didn't own the land,

Who did? The King of Spain?

3185. Re: Solar cell modules/Wind Generator combination

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 18:18:54 UTC
From: Jan Panteltje <pNaonStpealmtje@yahoo.com>
Message-ID: <c6156akeo1@news.f.de.plusline.net>
Source record: 26671
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On a sunny day (Sun, 18 Apr 2004 09:20:33 +0100) it happened "Highland Ham"
<xygm0csz.wvkn6wh@spamisbad.com> wrote in <rSCgc.657$Gq3.274@newsfe1-win>:

>> Now a wind generator would be cool, there are many windmils of huge size
>here,
>> one next to my house (100m or so), a BIG one that replaced 5 smaller
>ones...
>> It is on the coast, and it is always windy here...
>> How big is that thing?
>> JP
>==============================
>As I reported in a previous message its rated capacity is only 150 Watts.
>6 Blades , 900 mm diameter, max rpm approx 250 , 3 phase generator (DC
>through one and a half standard 25 Amperes bridge rectifiers)
>The thing sits on a street lamp post with an extension (approx 8 metres
>above ground.
>
>Frank GM0CSZ / KN6WH
Thx, sounds good.
I have a place for such a thing, and 1 meter diameter is not much.
Will think about this a bit :-)
JP

3186. Question about surface mount antennas?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 18:37:42 UTC
From: Joe <nuisancewildlife@nospamearthlink.net>
Message-ID: <W%Ugc.2522$e4.2079@newsread2.news.pas.earthlink.net>
Source record: 26672

I am working with RX433 and TX433 modules to create a remote camera control. I previously received some excellent advice on this forum about using a phase locked loop in the receiver section to detect the signal from the transmitter and eliminate most of the noise.

I breadboarded both the receiver and transmitter and gave it a trial run. I am still a little shaky on the PLL, it seems there's maybe a little black magic involved with the design there, but overall the system works. It locks at the proper frequency, but now I don't seem to have as much range as before the PLL. As a 'range booster', I used a piece of 24ga wire about 30cm long on the receiver and about 15cm (almost quarter wave) on the transmitter. both 'antennas' were vertical to the breadboards. That helped to extend the range about another 15 feet or so.

I saw a surface mount antenna advertised in the mouser catalog and I was wondering if anyone has had any experience with these. It is made by Yageo, part number is 4311-121-20043, but there does not seem to be a data sheet on it at the mouser site or at the Yageo site. My concern is that the receiver and transmitter boards will be in the horizontal plane, and I am wondering if a straight up telescoping antenna would output a larger range radiation pattern. If I mount a surface mount antenna to the boards, maybe the pattern will all be radiating upwards? Does anyone know? Also, can someone steer me to a good tutorial or site that discusses radiation patterns of different types of antennas?

TIA,
Joe
KB1KVI

3187. Re: XTAL oscillator with a XOR gate

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 18:53:16 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <weVgc.6739$2v.6549@nwrdny02.gnilink.net>
Source record: 26673

Using CMOS inverters to build oscillators works best when using "unbuffered" inverters. These can be identified by the letter "U" in the part number, as in "74HCU04".

If you use a buffered part or a part that has Schmitt trigger inputs, then the input-output transfer function becomes very steep (too much gain) and the oscillation becomes hard to control. When this happens, the circuit often oscillates, but at some frequency much higher than the crystal frequency. I've made oscillators out of XOR gates, but if it doesn't come up on the right frequency it can be hard to debug without a scope.

To determine if it's oscillating at all, I suggest measuring the DC current consumption with the feedback removed (crystal out of circuit), and then with the feedback closed (crystal in circuit). When the circuit is oscillating, the current will be markedly higher. Once you know it's oscillating, then you have to determine where it's oscillating. This might be challenging if all you have is a receiver.

Joe
W3JDR

"PaoloC" <ollollo@hotpop.com> wrote in message
news:c5vt05$66npd$1@ID-199778.news.uni-berlin.de...
> [Slightly off-topic request]
>
> Hi.
> As of the other post of mine, another part of my weekend was spent
> trying to get a XOR gate to oscillate with a XTAL.
>
> I have a working 74HC14 oscillator:
> "One gate of a 74HC14. 470ohm resistor from gate output to the parallel
> of 1Mohm//XTAL. 10pF and 33pF (from the junkbox) capacitors to ground on
> each side of the XTAL."
>
> Since my project calls for a frequency doubler, which I want to
> implement with a XOR gate, I wanted to use one XOR gate of a 74HC86 as
> oscillator. Remaining gates would work as buffer, delay line, digital
mixer.
>
> (I have Googled newsgroups and found an interesting discussion about XOR
> frequency doublers, so I am aware of its limitations.)
>
> So I moved the oscillator circuitry (R; C; R, XTAL; C) from the 74HC14
> to the 74HC86, pulling the other input of the XOR gate to "1", so that I
> would produce an inverter.

>
> Nothing happens. I used a 10.0 MHz XTAL.
>
> I understand that the 74HC14 has Schmitt trigger inputs and that a
> 74HC86 might have higher propagation delays. Still, is it possible to
> use a XOR gate as an inverter and oscillator? Do I overlook something?
>
> In the end I recovered the 74HC14 oscillator, but this adds one
> component to the final circuit I have in mind that wastes energy, space
> and is underutilized.
>
> Looking forward to your always helpful replies!
> Paolo IK1ZYW
>

3188. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 18:55:22 UTC
From: maxfoo <maxfooHeadFromButt@punkass.com>
Message-ID: <pu78805lcl9t5qf8v4ckf6lpbhiarpmenj@4ax.com>
Source record: 26674
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On Mon, 19 Apr 2004 17:11:39 GMT, "Roger Gt" <not@here.net> wrote:

>No... Regan did not and could not pardon Illegals, he didn't have
>that power. He would have been recalled had he even suggested it,
>and the problem is much worse now!

Sure he had the power. Just as Jimmy Carter granted amnesty to the draft dodgers
that ran to Canada.

Remove "HeadFromButt", before replying by email.

3189. Re: questions about 433MHZ modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 18:55:58 UTC
From: Joe <nuisancewildlife@nospamearthlink.net>
Message-ID: <2hVgc.2533$e4.733@newsread2.news.pas.earthlink.net>
Source record: 26675

"John" <jocjo_john@yooha.com> wrote in message
news:c5vejj02m7c@enews2.newsguy.com...
> ----- Original Message -----
> From: "Joe" <nuisancewildlife@nospamearthlink.net>
> Newsgroups: rec.radio.amateur.homebrew
> Sent: Friday, April 16, 2004 7:15 PM
> Subject: Re: questions about 433MHZ modules
>
> > > Hi, Joe -
> > >
> > > I think the linear output is from the detector in the receiver while
the
> > > digital output is following an amplifier with AGC (automatic gain
> > control).
> > > If so, then you may find that the linear output will decrease in
> amplitude
> > > with distance but the digital output will stay constant until the
range
> is
> > > so great that the signal drops into the noise. Using the decoder on
the
> > > digital output eliminates the noise you see when the transmitter is
off.
> > >
> > > Sounds like a fun project.
> > >
> > > John
> >
> > Hi John,
> >
> > Yes, it is fun. Looks like I will be learning about PLLs too. By the
> decoder
> > do you mean the holtek?
>
>
> Yes, that's what I meant.
>
>
> > I was not going to use the encoder and decoder,
> > since this is not a really critical application. I was planning on
> > generating a square wave with a 555 at the transmitter data pin and then
> > when the receiver detects it, take a picture. Yes, I think you are right
> > about the linear pin, because I noticed the magnitude of the received
> signal

> > seemed to drop a little with distance, but the digital pin stayed strong
> the
> > whole distance when I moved the transmitter from it. The linear pin
seems
> to
> > be much quieter tho.
>
>
> Yes, it would be because of the lower gain. If you need the AGC associated
> with the digital output, you might be able to use a phase detector IC on
> that output to detect your 555's frequency. Maybe the phase detector
output
> would be quiet with no incoming carrier. On the other hand, you may not
need
> any more than what you've already tested. If you're happy with the
distance
> you get using the detector output, don't worry about it.
>
>
> > I still haven't worked on this yet today, so off I go to work on it some
> > more and maybe I can get a working circuit soon.
>
>
> Good luck with it and let us know how it works when you're done.
>
> John

Hi John,

See my question about surface mount antennas posted above (LOL). Maybe I should just leave the PLL out of the circuit and see if I can use just the receiver. The digital pin of the receiver seems to be noisy only when the transmitter it within a few feet of it, once I move it away, the noise goes away. Thanks.

Joe
KB1KVI

3190. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 19:11:24 UTC
From: Roger Gt <not@here.net>
Message-ID: <wvVgc.38621$Vq4.21134@newssvr29.news.prodigy.com>
Source record: 26676
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"maxfoo" <maxfooHeadFromButt@punkass.com> wrote in message
news:pu78805lcl9t5qf8v4ckf6lpbhiarpmenj@4ax.com...
: On Mon, 19 Apr 2004 17:11:39 GMT, "Roger Gt" <not@here.net>
wrote:
:
: >No... Regan did not and could not pardon Illegals, he didn't
have
: >that power. He would have been recalled had he even suggested
it,
: >and the problem is much worse now!
:
: Sure he had the power. Just as Jimmy Carter granted amnesty to
the draft dodgers
: that ran to Canada.
:

When Regan was governor? What has that to do with immigration?

3191. Re: RF Design 90s RLB article ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 19:28:12 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <gLVgc.9115$%J5.1921@newssvr24.news.prodigy.com>
Source record: 26677
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

I'm just learning so here's what I know. A RLB is a directional coupler with directivity, isolation and a bridge. Return loss is the reciprocal of the reflection coefficient. A basic RLB has 3 ports, source or input, output or DUT, and coupled or reflected. Connect a piece of coax to the DUT port, a sig gen to source and a meter to reflected. A shorted or unterminated coax will reflect 100% less round trip line loss so the meter will read launch signal less 2 time line loss. If the coax is properly terminated the meter can read anywhere from 30 to 60 dB down, depending on how well terminated in relation to the coax impedance. If you use a tracking generator for the source and a spectrum analyzer on reflected for the meter you can sweep a filter, antenna or whatever you're interested in. Retrun loss is the fraction of power that isn't absorbed by the load. See QST April 1959 pp 24-28 for Warren Bruene's article, "An Inside Picture of Directional Wattmeters."
A retrun loss 1 dB is a VSWR of 17.4, 6db RL is VSWR of 3, 10 dB RL is VSWR of1.93, while a RL of 30 dB is a VSWR of 1.06 and this can be done at low power which is quite difficult with SWR bridges.
Two hams have told me that they've made RLBs that achieved 60 dB. That's my project if I can get the article.
Hank WD5JFR
"Reg Edwards" <g4fgq.regp@ZZZbtinternet.com> wrote in message news:c60jd6pcn1@titan.btinternet.com...
> > Does anyone recall seeing an article for constructing a return loss bridge
> > in RF Design in late 80s or early 90s? I'd like to see if I can get a
> > scan, I've been bitten by the RLB bug.
> ================================
>
> Isn't a return-loss bridge electrically exactly the same as the
> common-or-garden SWR meter with the meter scale calibrated in something
> different from SWR = 1 to infinity?
>
> Same applies to reflection coefficient bridge.
>
>

3192. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 19:30:26 UTC
From: maxfoo <maxfooHeadFromButt@punkass.com>
Message-ID: <2r988096qdbh8otbopmtbfv2vciaao9rvb@4ax.com>
Source record: 26678
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On Mon, 19 Apr 2004 19:11:24 GMT, "Roger Gt" <not@here.net> wrote:

>
>When Regan was governor? What has that to do with immigration?
>
Reagan was Governor from 1967-1975, didn't think illegals were on the radar
back then. During his presidency in the 1980s they were noticeable. I lived in
LA til '86...so thought you were referring to that time period.

Remove "HeadFromButt", before replying by email.

3193. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 19:49:50 UTC
From: "Fred B. McGalliard" <frederick.b.mcgalliard@boeing.com>
Message-ID: <HwFoF1.4Kt@news.boeing.com>
Source record: 26681
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Richard Henry" <rphenry@home.com> wrote in message
news:KxUgc.24273$ab3.3968@fed1read02...
>
> "Roger Gt" <not@here.net> wrote in message
> news:fLTgc.38581$Xr3.21091@newssvr29.news.prodigy.com...
>
> > The savages who lived here didn't own the land,
>
> Who did? The King of Spain?

No. The tribes "owned" the land they could defend with their ferocity,
cunning, and a sharp stick or flint ax. They did not farm as individuals but
as extended families, so they had no need to own the land as individuals.
The horse, and the steel blades changed all that quite rapidly in historic
terms, well before the settlers started to sweep across the country.

3194. Re: Oscillating 3rd overtone XTAL at fundamental?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 20:01:16 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c61ba1$t9f$1@newshost.mot.com>
Source record: 26684

"Michael Black" <et472@FreeNet.Carleton.CA> wrote in message
news:c5vtfohpv1@freenet9.carleton.ca...
> PaoloC (ollollo@hotpop.com) writes:
> > Hi.
> > I have spent part of the weekend trying to resonate al old CB XTAL at
> > its fundamental frequency.
> >
> > The XTAL is labelled 27.125 MHz, with a fundamental of about 9.041 MHz,
> > which falls into 18m HAM band when multiplied by two. I assume 27MHz
> > XTALs are 3rd overtone....
>
> Could the crystal be a receive crystal? CB crystals tended to show
> the channel number or the frequency of the channel, and so if you simply
> looked at the marked frequency, it would not tell you if it's for
> transmit or receive. Though the ones I've seen did mark them with
> "R" or "T". The point is that if it's a receive crystal, it wouldn't
> be 1/3 of 27.125 but 27.125-IF and then divided by three.

IFs were frequently 455KHz

I have used fundamental crystals on their overtones and overtone
crystals on the fundamental. They are not exactly 1/3 or 1/5 ratio due to
parasitics in the crystal. All crystals have the fund and OT responses, but
the responses are optimized for the intended use - by changing some of the
construction. (I'm talking AT cuts)
Overtone crystals *tend* to be used in the SERIES resonant mode, though
not always. Fundamental crystals tend to be used mostly in the parallel
resonant mode. This will also cause additinal frequency error when using
the marked frequency. The parallel freq is higher than the series (if I
recall correctly)
If I recall, the two gate oscillator is a series resonant oscillator and
the one gate is parallel. I would use a transistor Colpits oscillator
myself. The digital gate oscillators can run the crystal at a higher drive
than it should causing more crystal heating than desired (more drift
w/time).
If you are going to use a OT xtal as a fund., I'd pick a parallel type
osc like the Colpits (I think it has another name when it has a crystal
rather than a coil). I never did like the digital gate oscillators. They
tend to be a *bruit force* oscillator. Because of the Rs of the crystal,
crystals of some frequencies are easier to over drive than others.
Unfortunately, I don't remember which is which.
The fact that your 10mMHz xtal works is a good start. The other one
probably will, but since it was made for the third OT, there may be enough
difference to keep it from oscillating without some circuit change.
If you have no scope, measure the current drain. There may be a change

when the xtal is inserted if it is oscillating. Also, you could try measuring some voltage through a large resistor or choke to see changes when the xtal is inserted.

--
Steve N, K,9;d, c. i My email has no u's.

3195. Re: wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 20:03:57 UTC
From: "J. Yazel" <jyazel@netset.com>
Message-ID: <s2c88015uaees0m48dciovtbput4mfgj63@4ax.com>
Source record: 26679

>Also, Fair Radio Sales in Columbus Ohio has been known to carry them.
>
==========

Actually, it's in Lima, Ohio (about 100 miles from Columbus).

Picky, picky,

Jack

3196. Re: Wind Generators ; was : Solar cell modules.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 20:04:20 UTC
From: "Watson A.Name \"Watt Sun - the Dark Remover\"" <NOSPAM@dslextreme.com>
Message-ID: <c61b99$6osof$1@hades.csu.net>
Source record: 26680
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Highland Ham wrote:
>>Last month I went to Palm springs for the Faire, and there was no
>>noticeable difference in the numbers of windmills in operation.
>
> ====================
> Having seen these machines near Palm Springs ,they seem to be rather small
> and of an older design.

Rather small?!!!! You call 350kW or more with blades 150 Feet (45m)
long *SMALL*????

> Modern machines are much bigger (up to 2 MW rated capacity) and more
> reliable.

Even bigger!

> In the Netherlands they are now planning a number of 2MW machines offshore
> ,approx 8 kms off the coast placed on seabed based stuctures.
> Their designers are focussing on minimum maintenance (only once every 3
> years) .

> To date land based machines produce on average only 16% of their rated
> capacity ,due to periods without adequate wind and to technical outage /
> maintenance. Yet they seem profitable. In the Netherlands many farmers have
> them on their land ,especially
> in the northern provinces.

I'd like to know what has to be done to get the generated power back
into the grid.

> Frank GM0CSZ / KN6WH

3197. Re: XTAL oscillator with a XOR gate

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 20:06:53 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c61bkj$11$1@newshost.mot.com>
Source record: 26683

"JLB" <IHateSpam@nospam.net> wrote in message
news:YRRgc.26000$pk5.19092@fe03.usenetserver.com...
>
> ...With an oscillator built from inverting logic gates, you need two
gates so
> there is no overall phase inversion through the gates.

There are two types of oscillators with gates. Series and parallel.
The former requires no inversion the latter does.

> If you are using XOR
> gates, I would recommend tying one of the input lines on each gate high

He said he was.

I think the biggest issue here is thr Schmidt input. It can't be biased
in the active region.

--
Steve N, K,9;d, c. i My email has no u's.

3198. Re: Wind Generators ; was : Solar cell modules.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 20:07:11 UTC
From: "Watson A.Name \"Watt Sun - the Dark Remover\"" <NOSPAM@dslextreme.com>
Message-ID: <c61bej$6osof$2@hades.csu.net>
Source record: 26682
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Winfield Hill wrote:

> Highland Ham wrote...

>>Having seen these machines near Palm Springs, they seem to be
>>rather small and of an older design.

> I wonder if they shouldn't be replaced, that's prime wind territory.

Well, you know that the coops or companies that built them had to invest heavily and borrow money to finance their construction. What makes you think they can just tear down the old ones before they've paid off their loans, and borrow even more heavily to finance new ones??

>>In the Netherlands many farmers have them on their land, especially
>>in the northern provinces.

> Do they rent the space to the wind-generator owners, or do they each
> install and maintain them themselves? Is there a subsidized rate for
> the sale of electricity to the grid?

> Thanks,
> - Win

> whill_at_picovolt-dot-com

3199. Re: Question about surface mount antennas?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 21:09:54 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <1088g14hhr0fjb8@corp.supernews.com>
Source record: 26685

The surface mount antenna is likely to be a patch, or microstrip, antenna. When mounted on a horizontal surface, They radiate or receive most strongly straight up, although they do reasonably well at lower angles and have some response at the horizon. Among other applications, they're commonly used as GPS antennas, for receiving signals from satellites. But a vertical antenna would almost certainly do much better in your application.

I don't know of a site or tutorial that gives the kind of basic information you're looking for, but you might find what you need at http://www.cebik.com. Be cautious at other sites, since there's a huge amount of misunderstanding and misinformation about antennas out there, and the ability to make a fancy and professional looking web site has nothing to do with whether the author really understands the subject matter. If you're interested in a little more depth from a reliable source, the _ARRL Antenna Book_ is a good investment.

Roy Lewallen, W7EL

Joe wrote:
> . . .
> I saw a surface mount antenna advertised in the mouser catalog and I was
> wondering if anyone has had any experience with these. It is made by Yageo,
> part number is 4311-121-20043, but there does not seem to be a data sheet on
> it at the mouser site or at the Yageo site. My concern is that the receiver
> and transmitter boards will be in the horizontal plane, and I am wondering
> if a straight up telescoping antenna would output a larger range radiation
> pattern. If I mount a surface mount antenna to the boards, maybe the pattern
> will all be radiating upwards? Does anyone know? Also, can someone steer me
> to a good tutorial or site that discusses radiation patterns of different
> types of antennas?
>
>
> TIA,
> Joe
> KB1KVI
>
>

3200. Re: RF Design 90s RLB article ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 21:14:00 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <1088g8r6ra4a93a@corp.supernews.com>
Source record: 26686
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

You'll also find information about return loss bridges and how to construct and use them in Hayward, Campbell, and Larkin's _Experimental Methods in RF Design_ (ARRL) and its now out-of-print predecessor _Solid State Design for the Radio Amateur_ by Hayward and DeMaw (ARRL).

Roy Lewallen, W7EL

3201. homebrew specialty paint finish

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 21:25:10 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BCA9BBF4.4EA1%outhouse@midcoast.com>
Source record: 26687

So the project is done and you want to put it in a box, maybe even paint it...

Well here is a slightly unrelated inquiry, maybe someone here knows to point me in the right direction or give me the proper name for a kind of paint, I call it a crinkle finish, some refer to it as alligator finish.

It is the kind of paint finish you see on Bolex and Arriflex movie cameras, I also see it on military style electronic gear, very resilient, black crinkly finish which also prevents the item from slipping out of your hand.

What is it really called and who would have such stuff??

73 Uwe

3202. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 21:37:36 UTC
From: Richard Henry <rphenry@home.com>
Message-ID: <BEXgc.24286$ab3.4767@fed1read02>
Source record: 26689
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Roger Gt" <not@here.net> wrote in message
news:m8Vgc.38613$ie4.16232@newssvr29.news.prodigy.com...

> READ, it will inform you!

That's pretty funny.

3203. Re: homebrew specialty paint finish

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 21:45:05 UTC
From: dplatt@radagast.org
Message-ID: <1088i314052ra8d@corp.supernews.com>
Source record: 26690

In article <BCA9BBF4.4EA1%outhouse@midcoast.com>,
Uwe <outhouse@midcoast.com> wrote:

>So the project is done and you want to put it in a box, maybe even paint
>it...
>
>Well here is a slightly unrelated inquiry, maybe someone here knows to point
>me in the right direction or give me the proper name for a kind of paint, I
>call it a crinkle finish, some refer to it as alligator finish.
>
>It is the kind of paint finish you see on Bolex and Arriflex movie cameras,
>I also see it on military style electronic gear, very resilient, black
>crinkly finish which also prevents the item from slipping out of your hand.
>
>What is it really called and who would have such stuff??

Usually called "wrinkle finish" or "crinkle finish" paint, I believe.

Antique Electronic Supply carries it in black and grey, at least -
browse http://www.tubesandmore.com/ and search for "paint".

It's apparently available from Krylon as "wrinkle paint", and from
Plasti-kote / Volspar. The Plasti-kote type is being sold as an
automotive spray paint, "Perfect for air cleaners and valve covers".

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

3204. Re: CW IDER

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 21:45:49 UTC
From: sw6079@aol.com
Message-ID: <25e1f0d1.0404191345.4b48f3d8@posting.google.com>
Source record: 26691

"xpyttl" <xpyttl_NOSPAM@earthling.net> wrote in message
news:<1087ignjgdaee6f@corp.supernews.com>...
If you don't want to spend an afternoon building a programmer for a
PIC, AVR
or whatever, be prepared to pay the long dollar. There are few folks
these
days who would build an IDer from discrete circuits. However, it's a
pain
in the butt trying to make an IDer programmable for someone who
doesn't want
to program!

The Hamtronics suggestion was most welcomed... As I'd stated I
don't have the knowledge or expertise at programming, debugging
software, etc. to indulge in the PIC. I'm sure it is a useful device
and honestly, if I had the time to spend, I'd go that route, 73, Mike.

3205. Re: CW IDER

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 21:55:17 UTC
From: Skipp has a BD-1 <hatespam@yahoo.com>
Message-ID: <c61hs5$p2r$1@woodrow.ucdavis.edu>
Source record: 26692

Do a search on Ebay for "repeater controller". You might try one of Boyds BD-1 repeater controllers, which also make killer ID'ers. B&D Enterprises has a web site that can be found with google.

For about $69 you get a complete controller, that programs as an ID'er and/or repeater controller. You can talk to it with your computer (serial port) and program what ever message you want to transmit. The unit also responds to dtmf commands.

Very Cool!

cheers
skipp

www.radiowrench.com

: zerobeat <sw6079@aol.com> wrote:
: Anyone know of an easy to build ider? I know a basic stamp can be
: used, but I don't have the programming abilities. The QST ones I've
: seen all use outdated components and are complex. I'm building a
: small broacast band beacon (low end, around 530 khz) Thanks, 73,
: Mike.

3206. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 21:56:00 UTC
From: Jan Panteltje <pNaonStpealmtje@yahoo.com>
Message-ID: <c61htatfu1@news.f.de.plusline.net>
Source record: 26693
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On a sunny day (Mon, 19 Apr 2004 17:11:39 GMT) it happened "Roger Gt"
<not@here.net> wrote in <fLTgc.38581$Xr3.21091@newssvr29.news.prodigy.com>:

>
So 'savages' and 'from the east' and 'cannibals'?
Pretty much describes US in Iraq.
You <---- have to understand human.

Your recollection of history seems a bit tinted too.
Why not give the indiens (spelling?) their land back ;-)?
JP

3207. Re: wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 22:27:57 UTC
From: Brian <brianNADA@NOiquestSPAM.net>
Message-ID: <NnYgc.828$eZ5.113@newsread1.news.pas.earthlink.net>
Source record: 26694

Yup...hey whats the radio place that is or WAS in Reynoldsburg Ohio?

Was that Universal Radio?

"J. Yazel" <jyazel@netset.com> wrote in message
news:s2c88015uaees0m48dciovtbput4mfgj63@4ax.com...
>
> >Also, Fair Radio Sales in Columbus Ohio has been known to carry them.
> >
> ======================
>
> Actually, it's in Lima, Ohio (about 100 miles from Columbus).
>
> Picky, picky,
>
> Jack
>

3208. Re: wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 22:46:58 UTC
From: Incognito <BLB@sero.net>
Message-ID: <FFYgc.13557$432.1951@fed1read01>
Source record: 26695

Yup
http://www.universal-radio.com/

--
Incognito By Necessity (:-(

If you can't convince them, confuse them.
- - -Harry S Truman

"Brian" <brianNADA@NOiquestSPAM.net> wrote in message
news:NnYgc.828$eZ5.113@newsread1.news.pas.earthlink.net...
> Yup...hey whats the radio place that is or WAS in Reynoldsburg Ohio?
>
> Was that Universal Radio?
>
>
> "J. Yazel" <jyazel@netset.com> wrote in message
> news:s2c88015uaees0m48dciovtbput4mfgj63@4ax.com...
> >
> > >Also, Fair Radio Sales in Columbus Ohio has been known to carry them.
> > >
> > ======================
> >
> > Actually, it's in Lima, Ohio (about 100 miles from Columbus).
> >
> > Picky, picky,
> >
> > Jack
> >
>
>

3209. Re: XTAL oscillator with a XOR gate

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-19 22:54:28 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <scl8805m4gfiff7m3n619sr7e0kd0tnned@4ax.com>
Source record: 26696

On Mon, 19 Apr 2004 18:53:16 GMT, "W3JDR" <joe@roccis.com> wrote:

>Using CMOS inverters to build oscillators works best when using "unbuffered"
>inverters. These can be identified by the letter "U" in the part number, as
>in "74HCU04".
>
>If you use a buffered part or a part that has Schmitt trigger inputs, then
>the input-output transfer function becomes very steep (too much gain) and
>the oscillation becomes hard to control. When this happens, the circuit
>often oscillates, but at some frequency much higher than the crystal
>frequency. I've made oscillators out of XOR gates, but if it doesn't come up
>on the right frequency it can be hard to debug without a scope.
>
>To determine if it's oscillating at all, I suggest measuring the DC current
>consumption with the feedback removed (crystal out of circuit), and then
>with the feedback closed (crystal in circuit). When the circuit is
>oscillating, the current will be markedly higher. Once you know it's
>oscillating, then you have to determine where it's oscillating. This might
>be challenging if all you have is a receiver.

Certainly would be. The other thing about using Schmidt type inputs is
the likelihood of causing longer-term damage to the crystal. They
'prefer' not to be driven to hard and the sharpness of the buffered
gates ain't good for 'em.

3210. Re: homebrew specialty paint finish

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 00:34:02 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <40846FFA.F3009966@rica.net>
Source record: 26597

Uwe wrote:
>
> So the project is done and you want to put it in a box, maybe even paint
> it...
>
> Well here is a slightly unrelated inquiry, maybe someone here knows to point
> me in the right direction or give me the proper name for a kind of paint, I
> call it a crinkle finish, some refer to it as alligator finish.
>
> It is the kind of paint finish you see on Bolex and Arriflex movie cameras,
> I also see it on military style electronic gear, very resilient, black
> crinkly finish which also prevents the item from slipping out of your hand.
>
> What is it really called and who would have such stuff??
>
> 73 Uwe

http://www.mikeogara.net/tools/paint-coating/wrinkle-paint-black-aerosol-12-oz.html
http://www.nfauto.co.uk/wrinkle_paint_chrome.htm
http://auto-restoration.akoss.net/car-products.php?fr=120&c=Specialty-Paints-and-Coatings
http://cruiseclassics.com/partswarehouse/products.htm
http://www.speco.com.au/vht_special.html

--
John Popelish

3211. Re: Question about surface mount antennas?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 02:36:34 UTC
From: Joe <nuisancewildlife@nospamearthlink.net>
Message-ID: <S00hc.3157$e4.3037@newsread2.news.pas.earthlink.net>
Source record: 26598

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:1088g14hhr0fjb8@corp.supernews.com...
> The surface mount antenna is likely to be a patch, or microstrip,
> antenna. When mounted on a horizontal surface, They radiate or receive
> most strongly straight up, although they do reasonably well at lower
> angles and have some response at the horizon. Among other applications,
> they're commonly used as GPS antennas, for receiving signals from
> satellites. But a vertical antenna would almost certainly do much better
> in your application.
>
> I don't know of a site or tutorial that gives the kind of basic
> information you're looking for, but you might find what you need at
> http://www.cebik.com. Be cautious at other sites, since there's a huge
> amount of misunderstanding and misinformation about antennas out there,
> and the ability to make a fancy and professional looking web site has
> nothing to do with whether the author really understands the subject
> matter. If you're interested in a little more depth from a reliable
> source, the _ARRL Antenna Book_ is a good investment.
>
> Roy Lewallen, W7EL
>

Hi Roy,

Thanks, I was reading my Radio Amateur Handbook to try and get some ideas and from the graphic figures they have in there, it did look like a vertical antenna would be better. I wanted to get another opinion though. Also, thanks for the link, I have added it to my favorites. There's a lot of stuff there to read so I can visit the site and learn more as I have time.

Regards,
Joe
KB1KVI

3212. Re: Homebrew PTO/VFO question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 02:49:05 UTC
From: J Shrum <shrumj@madisontelco.com>
Message-ID: <r8ydnft8ROEHEhndRVn-tw@shawneelink.net>
Source record: 26599

Point taken.

But my goal at this point is to build w/ salvaged parts from my mound of junk...

But thanks for all the input. It is much appreciated.

"Brian" <brianNADA@NOiquestSPAM.net> wrote in message news:lgUgc.520$eZ5.502@newsread1.news.pas.earthlink.net...
> Why is ordering the kit against the point?
>
> It's a manhattan style construction product. All you get is a baggie of
> parts, the schematic, and some PCBoard material to work with. A fun and
> challenging build no matter how you look at it.
>
>
> "J Shrum" <shrumj@madisontelco.com> wrote in message
> news:QcudnRdnqPJ0nh7dRVn-sw@shawneelink.net...
> > That PTO is actually exactly what I would want to build, however, ordering
> > the kit is pretty much against the point.
> >
> > Does anyone by chance have the schematic for the PTO/VFO by WA6OTP?
> >
> >
> > "Brian" <brianNADA@NOiquestSPAM.net> wrote in message
> > news:VmAgc.20057$A_4.954@newsread1.news.pas.earthlink.net...
> > > Check out this very nice PTO/VFO from WA6OTP
> > >
> > > http://www.wa6otp.com/pto.htm
> > >
> > >
> > > "J Shrum" <shrumj@madisontelco.com> wrote in message
> > > news:VJ-dnbim_5lq4hzdRVn-vA@shawneelink.net...
> > > > I was curious if anyone has had any experience w/ homebrewing the
> > PTO/VFO
> > > > from
> > > >
> > >
> > >
> >
> http://www.qrpp-i.com/projects/ka8mav/Tiny-Tornado/PTO-VFO-R1a-schematic.gif
> > > > .
> > > >
> > > > I am pretty new to homebrewing, and was wondering if anyone knew of

> any
> > > > problems w/ this design that I may watch for. I have read that VFO's
> can
> > > > be
> > > > > very tricky, but this one looks incredibly simple. I'm just looking
> for
> > > > > anyway to get out from under the rock that I'm bound to.
> > > > >
> > > > > Thanks for any input...
> > > > >
> > > > > James Shrum - KC9FFX
> > > > >
> > > > >
> > > >
> > > >
> > >
> > >
> >
>

3213. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 03:29:44 UTC
From: KR Williams <krw@att.biz>
Message-ID: <MPG.1aee5dc15a68ae80989762@news1.news.adelphia.net>
Source record: 26600
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

In article <c61htatfu1@news.f.de.plusline.net>,
pNaonStpealmtje@yahoo.com says...
> On a sunny day (Mon, 19 Apr 2004 17:11:39 GMT) it happened "Roger Gt"
> <not@here.net> wrote in <fLTgc.38581$Xr3.21091@newssvr29.news.prodigy.com>:
>
> >
> So 'savages' and 'from the east' and 'cannibals'?
> Pretty much describes US in Iraq.
> You <---- have to understand human.
>
> Your recollection of history seems a bit tinted too.
> Why not give the indiens (spelling?) their land back ;-)

Get back on your drugs. You can't even spell (and are too lazy
to look up "Indians", you know sorta like "India").

--
Keith

3214. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 03:29:44 UTC
From: KR Williams <krw@att.biz>
Message-ID: <MPG.1aee5eba67595b37989763@news1.news.adelphia.net>
Source record: 26601
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

In article <408355B0.8BCF6208@my.mailbox>, NOspam@my.mailbox
says...
> KR Williams wrote:
> >
> > In article <c5mqgb$23pc$1@news.wplus.net>,
> > pNaonStpealmtje@yahoo.com says...
> > > On a sunny day (Thu, 15 Apr 2004 05:57:18 GMT) it happened
> > > ehsjr@bellatlantic.net wrote in <407E2458.C40B070D@bellatlantic.net>:
>
> ...snip...
>
> > > >Add that in, and the cost of a $15000 system is
> > > >much worse - over 30,000 in a 25 year, 7% mortgage.
> >
> > > You have to take into account that the cost of a kWh from
> > > the grid in 25 years will be a LOT higher too, if there
> > > still is a grid during and after WW3 that is.
> >
> > That's silly economics. I do not have to take into account the
> > cost of electricity in 25 years. I can wait. Solar cells are
> > becoming cheaper too. When the cost of the solar cell is less
> > than the cost of power from the grid I can switch, saving all of
> > the negative amortization inbetween, and have a *new* system in
> > 25 years, just as you're in need of replacing yours. ;-)
> >
> > My guess though, is that solar cells for the individual will
> > never become cheaper than power from the grid, since the power
> > company has access to the same technology and a *lot* better
> > financing possibilities. ...and they don't have to have the pay-
> > back in my lifetime.
>
> They have access to the tech, BUT, they also have to maintain the
> distribution system. Since my electricity has been unbundled,
> roughly half of my cost per Kwh goes to the distribution co., not the
> producer. Ice storms, drunk drivers, blown line fuses all cost money.
> As well as the personel and associated benefits packages,
> transportation costs of materials, etc. for maintaining the lines.
> All this is avoided cost on home solar.

There is still a huge advantage of scale. Without the grid
you'll have to store your own energy, which is certainly not
free. Peak energy usage is not near peak insolation.
> And...

> www.solaraccess.com/news/story?storyid=6482
>
> talking about a new discovery:
>
> "A solar cell with the simplest possible physical structure could
> achieve 50 percent efficiency or better, far higher than any yet
> demonstrated in the laboratory."

Irrelevant. The large producers will have any technology you
will, first and on a much more massive scale.

>
> It isn't cost effective for most of us yet, but the tipping point
> is coming.

So is the end of the oil reserves. It's been coming twenty years
from now, for about a hundred years. The tipping point will
certainly come, but the large generators will make it there
before your piss-ant house will.

--
Keith

3215. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 04:18:45 UTC
From: Anthony Matonak <res04ijs@verizon.net>
Message-ID: <4084A4A5.7000401@verizon.net>
Source record: 26602
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

KR Williams wrote:
> In article <408355B0.8BCF6208@my.mailbox>, NOspam@my.mailbox
> says...
>>It isn't cost effective for most of us yet, but the tipping point
>>is coming.
>
> So is the end of the oil reserves. It's been coming twenty years
> from now, for about a hundred years. The tipping point will
> certainly come, but the large generators will make it there
> before your piss-ant house will.

I think the main point is that solar PV is a technology that
does not require massive infrastructure. It's something that
can be done on an individual and distributed basis. The big
power companies really don't have that much advantage over
individuals.

Anthony

3216. Re: RF Design 90s RLB article ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 04:38:01 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404192038.56be3846@posting.google.com>
Source record: 26603
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

"Henry Kolesnik" <kolesnik@sbcglobal.net> wrote in message
news:<gLVgc.9115$%J5.1921@newssvr24.news.prodigy.com>...
> Return loss is the
> fraction of power that isn't absorbed by the load. See QST April 1959 pp
> 24-28 for Warren Bruene's article, "An Inside Picture of Directional
> Wattmeters."

You can find lots of references on the web, too. I think Charles
Wenzel's pages are almost always quite good, and recommend
http://www.wenzel.com/documents/swr.html, but a simple search may well
turn up things that suit your learning style better.

Cheers,
Tom

PS...Hank...sending a scan-to-text of the annual indexes for about
1988-1992, for couplers and whatever else was close to them on those
pages. I suspect it may be Joel Dunsmore's "Simple SMT Bridge Circuit
Mimics Ultar-Broadband Coupler" that you are interested in. I have
that here and can scan it, but you might check out Neil's referenced
site too.

3217. Re: Wind Generators ; was : Solar cell modules.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 06:15:45 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <44f980t3tvm9p2edrkhfrpf3ots2o9hihb@4ax.com>
Source record: 26604
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On Mon, 19 Apr 2004 00:11:09 +0100, "Highland Ham"
<xygm0csz.wvkn6wh@ntlworld.com> wrote:

>
>To date land based machines produce on average only 16% of their rated
>capacity ,due to periods without adequate wind and to technical outage /
>maintenance. Yet they seem profitable. In the Netherlands many farmers have
>them on their land ,especially
>in the northern provinces.

Those 16 % rated capacity figures seems to be quite low, since usually
20-30 % is quoted for land based windmills near the coast over here.
Of course, if you use a too big generator for a particular place and
wing size, the percentage will go down.

If you use a smaller generator with the same turbine and same
location, the percentage will go up, however, during stronger winds
you can only utilise the amount of power as the generator is rated for
and some of the wind energy is "lost" during stronger winds compared
to a larger generator.

During system design, you can select the percentage by selecting the
generator size. The generator cost compared to the other costs of the
windmill will determine the most economical generator size and thus
also this percentage.

Paul OH3LWR

3218. Re: Oscillating 3rd overtone XTAL at fundamental?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 07:22:00 UTC
From: PaoloC <ollollo@hotpop.com>
Message-ID: <c62j2b$76cb0$1@ID-199778.news.uni-berlin.de>
Source record: 26605

Hi,
thanks to all those who replied and discussed this topic, providing me with a lot of good suggestions.

I will try a different ex-CB rock, just in case the one I picked is broken. I actually tried a "Colpitts" oscillator with it and had no success either.

73,
Paolo IK1ZYW

3219. Re: XTAL oscillator with a XOR gate

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 07:28:33 UTC
From: PaoloC <ollollo@hotpop.com>
Message-ID: <c62jek$73cbv$1@ID-199778.news.uni-berlin.de>
Source record: 26606

Hi,
thanks to all those who replied and discussed this topic, providing me with a lot of good suggestions.

In the end I might use a BJT/FET oscillator instead, especially if it works with the ex-CB XTAL of my other post. Troubleshooting with a receiver and a DVM is fun, but time consuming and often demotivating.

I dream of an oscilloscope as much as I dream of an HF dipole up on the roof. Hopefully both will come with time, as well as children, a better wage, ... ;-)

73,
Paolo IK1ZYW

3220. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 08:00:46 UTC
From: Richard Henry <rphenry@home.com>
Message-ID: <PM4hc.24390$ab3.4927@fed1read02>
Source record: 26607
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Roger Gt" <not@here.net> wrote in message
news:j52hc.38758$rw1.37655@newssvr29.news.prodigy.com...
> X-No-Archive: yes
> "maxfoo" wrote
> : "Roger Gt" wrote
> : >
> : >When Regan was governor? What has that to do with immigration?
> : >
> : Reagan was Governor from 1967-1975, didn't think illegals were
> on the radar
> : back then. During his presidency in the 1980s they were
> noticeable. I lived in
> : LA til '86...so thought you were referring to that time period.
> :
> Nope... But when D.D. Eisenhower was president he declared
> martial law and cleared out the majority of the Illegals. I can't
> see why that wouldn't work again.

Martial law? I must have missed that.

3221. Re: Homebrew PTO/VFO question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 10:19:01 UTC
From: Brian <brianNADA@NOiquestSPAM.net>
Message-ID: <pO6hc.1729$eZ5.423@newsread1.news.pas.earthlink.net>
Source record: 26608

I prefer building stuff out of my junk pile. I do get a greater feeling of satisfaction when I can dive into the pile on hand and build something that works.

It's more fun that way!

73

"J Shrum" <shrumj@madisontelco.com> wrote in message news:r8ydnft8ROEHEhndRVn-tw@shawneelink.net...
> Point taken.
>
> But my goal at this point is to build w/ salvaged parts from my mound of
> junk...
>

3222. Re: RF Design 90s RLB article ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 10:58:11 UTC
From: Richard Hosking <richardh@iinet.net.au>
Message-ID: <40850343$0$16598$5a62ac22@freenews.iinet.net.au>
Source record: 26609
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

I have built a design out the ARRL handbook using a toroid transformer, and SM 100 ohm resistors in parallel to make up the 50 ohm sections. I could get 40 dB return loss to about 50 MHz, when matching a 50 ohm load. This gives an idea of the accuracy of your bridge, ie the higher the return loss in this situation, the better the bridge, assuming an accurate 50 ohm load. I used a spectrum analyser as the detector and the venerable HP8640B for the source.
You can even measure small inductances (I got reasonable accuracy to about 100nH) using a series RLC combination on the end of a length of coax as the unknown load. (ie do it remotely!) R=50, C=is known, L is unknown
At some frequency there is a max return loss. At this freq XL=XC and X(LC)~0, assuming perfect components. Thus the load is 50 ohms. You can work out L knowing C

Richard

Henry Kolesnik wrote:
> Does anyone recall seeing an article for constructing a return loss bridge
> in RF Design in late 80s or early 90s? I'd like to see if I can get a
> scan, I've been bitten by the RLB bug.
> tnx
> Hank WD5JFR
>
>

3223. Re: RF Design 90s RLB article ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 13:01:31 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <l5XVTQJr8RhAFAVP@ifwtech.co.uk>
Source record: 26612
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Richard Hosking wrote:
>I have built a design out the ARRL handbook using a toroid transformer,
>and SM 100 ohm resistors in parallel to make up the 50 ohm sections. I
>could get 40 dB return loss to about 50 MHz, when matching a 50 ohm
>load. This gives an idea of the accuracy of your bridge, ie the higher
>the return loss in this situation, the better the bridge, assuming an
>accurate 50 ohm load. I used a spectrum analyser as the detector

That also answers most of Reg's question about the difference between an RLB and an SWR bridge.

As Reg has often pointed out, the so-called "SWR bridge" is actually a reflection coefficient meter and it generally includes its own RF voltmeter.

An RLB generally doesn't, but has an RF output port for the reflected signal. That port is intended to be connected to a sensitive external RF power detector - such as Richard's spectrum analyser - which can accurately measure reflected signals down to -40dB... or even lower if you consider such readings meaningful.

Another difference from the normal SWR bridge is that an RLB is always a true bridge, with separate 'unknown' and 'reference' ports.

Normally your standard Zo load lives on the reference port, but if you remove it, you can then use the RLB to compare *any* two impedances that are intended to be the same (for example the two halves of a stacked yagi array). You can see how alike the two impedances are, without actually having to measure the value of either one... a very handy feature.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

3224. Re: Homebrew PTO/VFO question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 13:16:09 UTC
From: J Shrum <shrumj@madisontelco.com>
Message-ID: <ssednUf0MsEPvxjdRVn-ug@shawneelink.net>
Source record: 26610

Agreed!

Paul,
That tin ear is perfect... That is exactly the PTO I was looking for. I'll
give that one a shot.

Thanks for everyone...

KC9FFX
"Brian" <brianNADA@NOiquestSPAM.net> wrote in message
news:pO6hc.1729$eZ5.423@newsread1.news.pas.earthlink.net...
> I prefer building stuff out of my junk pile. I do get a greater feeling of
> satisfaction when I can dive into the pile on hand and build something
that
> works.
>
> It's more fun that way!
>
> 73
>
>
>
>
> "J Shrum" <shrumj@madisontelco.com> wrote in message
> news:r8ydnft8ROEHEhndRVn-tw@shawneelink.net...
> > Point taken.
> >
> > But my goal at this point is to build w/ salvaged parts from my mound of
> > junk...
> >
>
>

3225. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 14:24:09 UTC
From: "Fred B. McGalliard" <frederick.b.mcgalliard@boeing.com>
Message-ID: <HwH407.H08@news.boeing.com>
Source record: 26611
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Anthony Matonak" <res04ijs@verizon.net> wrote in message
news:4084A4A5.7000401@verizon.net...
...
> I think the main point is that solar PV is a technology that
> does not require massive infrastructure. It's something that
> can be done on an individual and distributed basis. The big
> power companies really don't have that much advantage over
> individuals.

Sorry Anthony, but I think this is quite wrong. Solar PV requires a very large infrastructure to build, and a substantial infrastructure to maintain. The cells may last 100 years, but the inverters, storage batteries and the like, are more typically 5-10 years. And, many of us do not live where sunlight is all that reliable. The more unreliable, the larger and more expensive the system that is required, and the more severe compromises have to be made to keep the night light on. The PV systems, to obtain maximum practical usage for the civilization as a whole, need to be installed in mass in the desert regions down in the temperate zones in the us, Texas and like that. This puts the big power companies in the cat bird seat, still. But it is that, or pay 3-4 times as much for the same electricity from a system that gives you constant headaches maintaining yourself, and one that may actually consume more power to build and install than it can produce in it's life, because we insist on living where we want instead of where solar power pays off.

3226. Solid State Design For The Radio Amateur

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 15:07:20 UTC
From: David Roper <davidandpearl@m0dad.freeserve.co.uk>
Message-ID: <c63e96$g9m$1@newsg3.svr.pol.co.uk>
Source record: 26613

Can anyone tell me where I could obtain a copy of the ARRL's book "Solid State Design for the Radio Amateur" Secondhand or new in any condition.
M0DAD

3227. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 15:11:34 UTC
From: Jim Thompson <thegreatone@example.com>
Message-ID: <n7fa80d06v4ic9piaiui3v01jio8fc9m6h@4ax.com>
Source record: 26614
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On Mon, 19 Apr 2004 21:18:45 -0700, Anthony Matonak
<res04ijs@verizon.net> wrote:
[snip]
>
>I think the main point is that solar PV is a technology that
>does not require massive infrastructure. It's something that
>can be done on an individual and distributed basis.

>The big
>power companies really don't have that much advantage over
>individuals.
>
>Anthony

Sure they do. While you are dicking around with solar cells the big
power companies will build a solar-powered steam plant with *huge*
servo'd mirrors. I put pencil-to-paper once upon a time... you can do
marvelously if you've got the acreage.

...Jim Thompson
--
James E.Thompson, P.E.	mens
Analog Innovations, Inc.	et
Analog/Mixed-Signal ASIC's and Discrete Systems	manus
Phoenix, Arizona Voice:(480)460-2350	
E-mail Address at Website Fax:(480)460-2142	Brass Rat
http://www.analog-innovations.com	1962

I love to cook with wine. Sometimes I even put it in the food.

3228. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 15:20:09 UTC
From: "Watson A.Name \"Watt Sun - the Dark Remover\"" <NOSPAM@dslextreme.com>
Message-ID: <c63f0c$6pa83$1@hades.csu.net>
Source record: 26615
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Anthony Matonak wrote:

> KR Williams wrote:
>
>> In article <408355B0.8BCF6208@my.mailbox>, NOspam@my.mailbox says...

>>> It isn't cost effective for most of us yet, but the tipping point
>>> is coming.

>> So is the end of the oil reserves. It's been coming twenty years from
>> now, for about a hundred years.

Your _doomsday_ assertion that oil reserves are ending is totally ridiculous. There are a zillion gallons of oil locked up in shale in North America, just waiting for an economical way to extract them. Problem is, they cost too much to extract, so that's not practical _at_this_time_. But if the price of petroleum continues to go up, then finally someday the point will come where the cost to extract it *is* competitive. Then it will get included in reserves.

Another possibility is that if the cost of petroleum continues to rise, the cost of alternative energy sources may become more competitive, and will replace petroleum. Alcohol from corn is one that comes to mind.

Maybe if the cost of gas goes up another buck or so, I'll be able to drive down the street without having to fight so much traffic. All those gas guzzling vehicles will drive their owners to the poorhouse and they'll stay off the roads. ;-)

>> The tipping point will certainly
>> come, but the large generators will make it there before your piss-ant
>> house will.

> I think the main point is that solar PV is a technology that
> does not require massive infrastructure. It's something that
> can be done on an individual and distributed basis. The big
> power companies really don't have that much advantage over
> individuals.

> Anthony
>

3229. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 15:54:50 UTC
From: Anthony Matonak <res04ijs@verizon.net>
Message-ID: <408547CA.90005@verizon.net>
Source record: 26616
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Fred B. McGalliard wrote:
> "Anthony Matonak" <res04ijs@verizon.net> wrote in message
>
>>I think the main point is that solar PV is a technology that
>>does not require massive infrastructure. It's something that
>>can be done on an individual and distributed basis. The big
>>power companies really don't have that much advantage over
>>individuals.
>
> Sorry Anthony, but I think this is quite wrong. Solar PV requires a very
> large infrastructure to build, and a substantial infrastructure to maintain.

I don't know about that. Solar PV can be used in any size from digital watches to powering hotels. Big power companies have to buy the same parts as individuals and would mostly pay similar prices. The large infrastructure to build and maintain them is called "the rest of civilization" for the most part and is accessible for an individual as it is for a big power company.

> The cells may last 100 years, but the inverters, storage batteries and the
> like, are more typically 5-10 years. And, many of us do not live where
> sunlight is all that reliable. The more unreliable, the larger and more
> expensive the system that is required, and the more severe compromises have
> to be made to keep the night light on. The PV systems, to obtain maximum
> practical usage for the civilization as a whole, need to be installed in
> mass in the desert regions down in the temperate zones in the us, Texas and
> like that. This puts the big power companies in the cat bird seat, still.

Oddly enough, many people do live where the sunlight is fairly reliable and a PV system can be small enough to be practical for an individual. The civilization as a whole is just a collection of individuals when you look at it closely enough.

> But it is that, or pay 3-4 times as much for the same electricity from a
> system that gives you constant headaches maintaining yourself, and one that
> may actually consume more power to build and install than it can produce in
> it's life, because we insist on living where we want instead of where solar
> power pays off.

Grid tied systems need close to zero maintenance so I hardly see that as giving constant headaches. Even with a battery system, I've heard about some that only require a checkup every six months or so. Lastly, while PV may be more expensive than grid power, I don't think that a big power company can build solar PV all that much cheaper than anyone else.

Anthony

3230. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 16:00:18 UTC
From: Jan Panteltje <pNaonStpealmtje@yahoo.com>
Message-ID: <c63hec$2ae9$1@news.wplus.net>
Source record: 26617
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On a sunny day (Mon, 19 Apr 2004 23:29:44 -0400) it happened KR Williams
<krw@att.biz> wrote in <MPG.1aee5dc15a68ae80989762@news1.news.adelphia.net>:

>In article <c61htatfu1@news.f.de.plusline.net>,
>pNaonStpealmtje@yahoo.com says...
>> On a sunny day (Mon, 19 Apr 2004 17:11:39 GMT) it happened "Roger Gt"
>> <not@here.net> wrote in <fLTgc.38581$Xr3.21091@newssvr29.news.prodigy.com>:
>>
>> >
>> So 'savages' and 'from the east' and 'cannibals'?
>> Pretty much describes US in Iraq.
>> You <---- have to understand human.
>>
>> Your recollection of history seems a bit tinted too.
>> Why not give the indiens (spelling?) their land back ;-)
>
>Get back on your drugs. You can't even spell (and are too lazy
>to look up "Indians", you know sorta like "India").
Thank you Keith, as for the drugs I cannot help you there.
But this morning it occured to me that it is purely academic,
kill Iraqies, for the oil, sell the oil, buy food from that
money and eat it -versus- kill and eat Iraqies directly.
So cannibals applies.
Since you did not object to that, I take it you vote for impeachment
of the Bush clan too?
JP

3231. Re: RF Design 90s RLB article ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 16:22:10 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <S6chc.9541$2v4.1700@newssvr24.news.prodigy.com>
Source record: 26618
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

I now have what may be better info, apparently Ihad it wron as far as RLB.
It was RF Design May and June 1982 titled "Low Cost Wideband Directional
Coupler" by Robert S. McDonald.

73
Hank WD5JFR
"Henry Kolesnik" <kolesnik@sbcglobal.net> wrote in message
news:cIAgc.18390$fQ1.3296@newssvr22.news.prodigy.com...
> Does anyone recall seeing an article for constructing a return loss bridge
> in RF Design in late 80s or early 90s? I'd like to see if I can get a
> scan, I've been bitten by the RLB bug.
> tnx
> Hank WD5JFR
>
>

3232. need replacement for mc3340p (or idea)

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 16:33:08 UTC
From: mac <mac_dx@tnij.poczta.onet.pl>
Message-ID: <c63ja7fhr1@inews.gazeta.pl>
Source record: 26619

Heeelp. need it to RX (between mc3362 and lm386) to work as audio AGC

MAc
sp9mrn

3233. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 17:14:31 UTC
From: Richard Henry <rphenry@home.com>
Message-ID: <ZTchc.24421$ab3.10091@fed1read02>
Source record: 26620
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Jim Thompson" <thegreatone@example.com> wrote in message
news:n7fa80d06v4ic9piaiui3v01jio8fc9m6h@4ax.com...

> While you are dicking around with solar cells the big
> power companies will build a solar-powered steam plant with *huge*
> servo'd mirrors. I put pencil-to-paper once upon a time... you can do
> marvelously if you've got the acreage.
>

They already have.

http://www.volker-quaschning.de/downloads/VGB2001.pdf

Scroll down to page 5.

3234. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 17:19:59 UTC
From: Richard Henry <rphenry@home.com>
Message-ID: <5Zchc.24422$ab3.17362@fed1read02>
Source record: 26621
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Roger Gt" <not@here.net> wrote in message
news:kqchc.24608$4k5.4365@newssvr27.news.prodigy.com...
> X-No-Archive: yes
> "Richard Henry" wrote
> : "Roger Gt" wrote
> : > "maxfoo" wrote
> : > : "Roger Gt" wrote
> : > : >
> <snip>
> : > :
> : > Nope... But when D.D. Eisenhower was president he declared
> : > martial law and cleared out the majority of the Illegals. I
> can't
> : > see why that wouldn't work again.
> :
> : Martial law? I must have missed that.
>
> Well gee, what were you doing in 1956-1960? Didn't you vote?

In 1960, I turned 13, so no voting for me then.

I don't recall any martial law, either. Can you be more specific?

3235. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 17:21:00 UTC
From: Jim Thompson <thegreatone@example.com>
Message-ID: <6rma80pevilb63ecse8ls63k3r3gadtuho@4ax.com>
Source record: 26622
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On Tue, 20 Apr 2004 10:14:31 -0700, "Richard Henry" <rphenry@home.com>
wrote:

>
>"Jim Thompson" <thegreatone@example.com> wrote in message
>news:n7fa80d06v4ic9piaiui3v01jio8fc9m6h@4ax.com...
>
>> While you are dicking around with solar cells the big
>> power companies will build a solar-powered steam plant with *huge*
>> servo'd mirrors. I put pencil-to-paper once upon a time... you can do
>> marvelously if you've got the acreage.
>>
>
>They already have.
>
>http://www.volker-quaschning.de/downloads/VGB2001.pdf
>
>Scroll down to page 5.
>

Arizona Public Service has a similar operating facility west of
Phoenix that, for some reason, is kept very hush-hush. It was in the
papers a few years ago, then no more mention.

The efficiency of such a system FAR exceeds what will EVER be attained
with photo cells.

...Jim Thompson
--
James E.Thompson, P.E.	mens
Analog Innovations, Inc.	et
Analog/Mixed-Signal ASIC's and Discrete Systems	manus
Phoenix, Arizona Voice:(480)460-2350	
E-mail Address at Website Fax:(480)460-2142	Brass Rat
http://www.analog-innovations.com	1962

I love to cook with wine. Sometimes I even put it in the food.

3236. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 17:32:24 UTC
From: "Fred B. McGalliard" <frederick.b.mcgalliard@boeing.com>
Message-ID: <HwHCpy.4Hx@news.boeing.com>
Source record: 26624
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Anthony Matonak" <res04ijs@verizon.net> wrote in message
news:408547CA.90005@verizon.net...
...
> I don't know about that. Solar PV can be used in any size from digital
> watches to powering hotels. Big power companies have to buy the same
> parts as individuals and would mostly pay similar prices. The large
> infrastructure to build and maintain them is called "the rest of
> civilization" for the most part and is accessible for an individual
> as it is for a big power company.

So, first you have to build and support a huge civilization, not stand alone as an individual. Big point that. The power company would buy in really large blocks, install in a single area without pre-existing structures in the way. I would be surprised if their PV installed cost were (assuming they are in this for profit not subsidies) any more than a third what the individual must suffer. Of course a skilled do it yourselfer with time to hunt up bargains might do a lot better, but this has to apply to the whole people, not just the few.

...
> Oddly enough, many people do live where the sunlight is fairly reliable
> and a PV system can be small enough to be practical for an individual.
> The civilization as a whole is just a collection of individuals when
> you look at it closely enough.

I am not saying that an individual cannot spend an arm and a leg, buy a system that is three times the size of an optimized well sited system, overwhelm everything with massive and expensive battery storage, and be perfectly happy with running out of power in the middle of microwaving his hot dogs, but you gotta recognize that overall this process needs to be made as inexpensive as possible or it will make most of us a lot poorer. I am concerned that you are seeing that a PV system can be built, but not what the trade offs of this system imply to our lives. I believe that when PV electricity becomes cheaper than coal/natural gas/uranium, (if it can), then most of us will be buying most of our electricity from huge PV arrays in the southern deserts, not from a little farm outside our town. There will be few who will "roll their own", and some small town back up plants for summer peaks and such, but the bulk power has to be the cheap power and that has to be large and in the right place to make solar power.

...
> Grid tied systems need close to zero maintenance so I hardly see that as
> giving constant headaches. Even with a battery system, I've heard about
> some that only require a checkup every six months or so. Lastly, while

> PV may be more expensive than grid power, I don't think that a big power
> company can build solar PV all that much cheaper than anyone else.

Grid tie is great for a small system or two. If we get more than 20% from such systems, the grid has to be redesigned to be a storage system of sorts. I overstated what I think is the actual level of difficulty to get you to think about the demand you are making on the ordinary citizen to maintain his private power system. Every few years he has something break down, and he knows nothing about it. The maintenance costs eat his profit for dinner. A tree branch, an ice storm, a battery failure, a lightening bolt, and his system is disconnected from the grid so he can turn his lights on, and we are back to the centralized distributions system. Your last point, that you think a big company can not build PV much cheaper than Joe, and the general implication that the cost to Joe of electricity from his local PV system is competitive with ConEd from the Mohave Desert by way of the grid, needs a lot more quantification I think. As I recall there is around a 3 to 1 difference in the average solar insolation between Seattle and Phoenix, for example. It is pretty hard to make up for that kind of a cost differential, but on top of that you have to add even more storage someplace for all that electricity, since the winter insolation up here is really crappy for months on end. That is one heck of a lot of storage, and to do it locally is generally from hard to impossible. (In Seattle we might be able to find a nearby mountain valley we could turn into a lake for hydrostorage, but a lot of locations are a long ways from any possible storage site). .

3237. Re: Solid State Design For The Radio Amateur

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 17:43:53 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BCAAD998.4EC6%outhouse@midcoast.com>
Source record: 26623

in article c63e96$g9m$1@newsg3.svr.pol.co.uk, David Roper at
davidandpearl@m0dad.freeserve.co.uk wrote on 4/20/04 11:07:

> Can anyone tell me where I could obtain a copy of the ARRL's book "Solid
> State Design for the Radio Amateur" Secondhand or new in any condition.
> M0DAD
>
>

I just saw a few at a hamfest in Maine

Uwe

3238. Re: Oscillating 3rd overtone XTAL at fundamental?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 18:16:28 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c63phj$qc5$1@newshost.mot.com>
Source record: 26626

Get something working with a good crystal first.

A Google search (Colpitts Crystal oscillator circuits) turned up lots of gate oscillators. This has the type of transistor oscillators I am used to using:

http://hem.passagen.se/communication/txo.html

There are many other references at:
http://users.telenet.be/educypedia/electronics/analogosciltypes.htm

I don't like this circuit:
http://www.electronics-tutorials.com/oscillators/crystal-oscillators.htm

3239. Re: Solid State Design For The Radio Amateur

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 18:21:16 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <wSdhc.34841$yD1.99775@attbi_s54>
Source record: 26625

> > Can anyone tell me where I could obtain a copy of the ARRL's book "Solid
> > State Design for the Radio Amateur" Secondhand or new in any condition.
> > M0DAD
> >
It's pretty close to obsolete, you'd be well served to buy the brand new Experimental Methods in RFDesign. However, I have always maintained 2 copies, one for the shop and one for the reading room you know. I just was the recipient of gifts from two very kind fellow hams, Donnie Lee and John Larkin, and in an attempt to repay their thoughtfulness would happily mail you one of my two copies of SSD if you'll send me your snail mail address.

Regards

W4ZCB

3240. Re: XTAL oscillator with a XOR gate

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 18:21:49 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c63prkqjn1@newshost.mot.com>
Source record: 26630

like Figure 7:

http://www.northcountryradio.com/PDFs/column007.pdf

--
Steve N, K,9;d, c. i My email has no u's.

"Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote in message
news:c61bkj$11$1@newshost.mot.com...
>
> "JLB" <IHateSpam@nospam.net> wrote in message
> news:YRRgc.26000$pk5.19092@fe03.usenetserver.com...
> >
> > ...With an oscillator built from inverting logic gates, you need two
> gates so
> > there is no overall phase inversion through the gates.
>
> There are two types of oscillators with gates. Series and parallel.
> The former requires no inversion the latter does.
>
> > If you are using XOR
> > gates, I would recommend tying one of the input lines on each gate high
>
> He said he was.
>
> I think the biggest issue here is thr Schmidt input. It can't be
biased
> *in the active region*.
>
> --
> Steve N, K,9;d, c. i My email has no u's.
>
>

3241. Re: XTAL oscillator with a XOR gate

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 18:23:52 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c63pveqka1@newshost.mot.com>
Source record: 26629

Sorry. Poseted to wrong thread... , Steve

"Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote in message
news:c63prkqjn1@newshost.mot.com...
> like Figure 7:
>
> http://www.northcountryradio.com/PDFs/column007.pdf
>
>
> --
> Steve N, K,9;d, c. i My email has no u's.
>
>
> "Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote in message
> news:c61bkj$11$1@newshost.mot.com...
> >
> > "JLB" <IHateSpam@nospam.net> wrote in message
> > news:YRRgc.26000$pk5.19092@fe03.usenetserver.com...
> > >
> > > ...With an oscillator built from inverting logic gates, you need two
> > gates so
> > > there is no overall phase inversion through the gates.
> >
> > There are two types of oscillators with gates. Series and parallel.
> > The former requires no inversion the latter does.
> >
> > > If you are using XOR
> > > gates, I would recommend tying one of the input lines on each gate
high
> >
> > He said he was.
> >
> > I think the biggest issue here is thr Schmidt input. It can't be
> biased
> > *in the active region*.
> >
> > --
> > Steve N, K,9;d, c. i My email has no u's.
> >
> >
>
>

3242. Re: Oscillating 3rd overtone XTAL at fundamental?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 18:27:20 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c63q5u$qo8$1@newshost.mot.com>
Source record: 26628

I dunn-o. I had great success with this cricuit. It's used in all the older Motorola channel elements. Just about any rock will fly at the fundamental unless its really bad. You can play with the ratio of the two feedback caps (Base-to-emitter and emitter-to-ground) Base-to-emitter cap decrease to get more feedback. I even modeled one of these on P-Spice. Really neat to see it oscillate.

like Figure 7:

http://www.northcountryradio.com/PDFs/column007.pdf

--
Steve N, K,9;d, c. i My email has no u's.

"Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote in message news:c63phj$qc5$1@newshost.mot.com...
> Get something working with a good crystal first.
>
> A Google search (Colpitts Crystal oscillator circuits) turned up lots of
> gate oscillators. This has the type of transistor oscillators I am used to
> using:
>
> http://hem.passagen.se/communication/txo.html
>
> There are many other references at:
> http://users.telenet.be/educypedia/electronics/analogosciltypes.htm
>
>
> I don't like this circuit:
> http://www.electronics-tutorials.com/oscillators/crystal-oscillators.htm
>
>
>

3243. Re: Solid State Design For The Radio Amateur

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 18:28:56 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <108aqvcg3mb8a1@corp.supernews.com>
Source record: 26627

Just in case you might not know. . .

There's a newer book that contains a lot of the same information, plus more, and a CD with some very useful programs and data. It's _Experimental Methods in RF Design_, by Hayward, Campbell, and Larkin, available from the ARRL and many bookstores.

Unless you want _Solid State Design_ for a collection, you might consider the newer book.

Roy Lewallen, W7EL

David Roper wrote:
> Can anyone tell me where I could obtain a copy of the ARRL's book "Solid
> State Design for the Radio Amateur" Secondhand or new in any condition.
> M0DAD
>
>

3244. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 18:50:55 UTC
From: Richard Henry <rphenry@home.com>
Message-ID: <liehc.24430$ab3.5640@fed1read02>
Source record: 26631
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Roger Gt" <not@here.net> wrote in message
news:SJchc.24622$9x5.18471@newssvr27.news.prodigy.com...

> Manhattan Island was "Bought" for $24.00 worth of beads, from
> Indians who thought it strange that anyone would ask to "Buy"
> anything, but they took the beads!

The fact that the colonists were willing to pay anything of value implies
that they ecognized the origianl inhabitants claim to the land

> The only thing Indians "Owned" was a franchise to build Casinos!!!

I have some questions about your history books: How many pictures are on
each page? 1, 4, or 8? Are they precolored, or do you have to use your
crayons? Is some of the text in balloons or is it all in the captions?

3245. Re: CW IDER

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 20:32:30 UTC
From: john graesser <graesser@tca.net>
Message-ID: <108b2639dkuicef@corp.supernews.com>
Source record: 26632

"Skipp has a BD-1" <hatespam@yahoo.com> wrote in message
news:c61hs5$p2r$1@woodrow.ucdavis.edu...
> Do a search on Ebay for "repeater controller". You might try one of Boyds
> BD-1 repeater controllers, which also make killer ID'ers. B&D Enterprises
> has a web site that can be found with google.
>
> For about $69 you get a complete controller, that programs as an ID'er
> and/or repeater controller. You can talk to it with your computer (serial
> port) and program what ever message you want to transmit. The unit also
> responds to dtmf commands.

Depending on how small and low power this has to be, you might even go the large route and buy a $15-20 used 386 or 486 computer with sound card, that way you could have a voice id, interfacing to the radio isn't too difficult. Something like the psk or mntty interface to trigger the radios ptt, and a simple program to do the timing and send out the audio.

3246. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 20:50:55 UTC
From: "Fred B. McGalliard" <frederick.b.mcgalliard@boeing.com>
Message-ID: <HwHLwu.H33@news.boeing.com>
Source record: 26634
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Jim Thompson" <thegreatone@example.com> wrote in message
news:6rma80pevilb63ecse8ls63k3r3gadtuho@4ax.com...
...
> The efficiency of such a system FAR exceeds what will EVER be attained
> with photo cells.

I won't take that without a bit of study. The solar cells take a scads of energy to build, but once built run for a very long time without much maintenance. The thermal system is mechanically more complex, requires a lot more maintenance, is more sensitive to wind loading, and of course you are running pretty cool so the thermal efficiency is not all that great. I would think the solar trough is more like 20% and probably much closer to PV than you allude. The very large focusing arrays can run a lot hotter, and may then give you a bit better efficiency, but you are still not likely to make much over 40% and even at that, if you add in the higher rates of "dead" space that the big focusing arrays use, you may find the total percentage of energy recovered per square mile to be under 20%. The cost per KWH recovered is, I think, the killer here, and the increased maintenance adds a lot to this cost for the thermal array.

3247. Re: CW IDER

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 20:56:52 UTC
From: Rv! <no@spam.here.thanks>
Message-ID: <1082494612.97565.0@iris.uk.clara.net>
Source record: 26633

Hi all,
I seem to have missed something here.
The OP wanted a CW ID Keyer and we've all came up with
various options. Some people are choosing products at over
$50 and the most recent one suggested a PC. Everyone has
had their reasons for these.

A problem I have here is the OP hasn't really given us a fair
chance of replying well, due to lack of information/feedback.

If the OP basically wanted a CW ID Keyer as suggested, I really
fail to see why a simple K1EL keyer for aroud $10 can be beat.
A K10 is programmed by CW, it has a beacon mode and lot's of
potentially useful features.

Please OP, tell us what you really want as this thread is beginning
to frustrate me due to all of the options, wide price range and
huge variations in complexity.

I understand we're all trying to help but the thread is getting
crazy on price and complexity for an oh-so-simple problem!

Rv!

3248. Re: Solid State Design For The Radio Amateur

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 21:17:33 UTC
From: Gary Morton <gary@alma.demon.co.uk>
Message-ID: <Nrghc.4062$HU6.38156560@news-text.cableinet.net>
Source record: 26635

David Roper wrote:
> Can anyone tell me where I could obtain a copy of the ARRL's book "Solid
> State Design for the Radio Amateur" Secondhand or new in any condition.
> M0DAD
>
>

David,

if you are lucky you will find a copy at a radio rally. I bought a copy
for 50p at the Swansea Radio Rally. I also saw a copy at the Yeovil QRP Radio
Rally but at a cost of ï¿½5. I've seen copies at other rallies too.

I've nearly read the book from cover to cover and it is indeed an excellent
reference. I have learned much.

regards...

--Gary

3249. Re: Homebrew PTO/VFO question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 22:39:36 UTC
From: Brian <brianNADA@NOiquestSPAM.net>
Message-ID: <IEhhc.4305$e4.3613@newsread2.news.pas.earthlink.net>
Source record: 26636

I grabbed the Tin Ear docs too...I think I will try to build this little
receiver from my parts pile.

I need another receiver like I need a hole in the head but what the
heck...looks fun.

"J Shrum" <shrumj@madisontelco.com> wrote in message
news:ssednUf0MsEPvxjdRVn-ug@shawneelink.net...
> Agreed!
>
> Paul,
> That tin ear is perfect... That is exactly the PTO I was looking for. I'll
> give that one a shot.
>
> Thanks for everyone...
>
> KC9FFX
> "Brian" <brianNADA@NOiquestSPAM.net> wrote in message
> news:pO6hc.1729$eZ5.423@newsread1.news.pas.earthlink.net...
> > I prefer building stuff out of my junk pile. I do get a greater feeling
of
> > satisfaction when I can dive into the pile on hand and build something
> that
> > works.
> >
> > It's more fun that way!
> >
> > 73
> >
> >
> >
> >
> > "J Shrum" <shrumj@madisontelco.com> wrote in message
> > news:r8ydnft8ROEHEhndRVn-tw@shawneelink.net...
> > > Point taken.
> > >
> > > But my goal at this point is to build w/ salvaged parts from my mound
of
> > > junk...
> > >
> >
> >
> >
>
>

3250. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 23:19:33 UTC
From: Clifford Heath <cjh-nospam@nospaManagesoft.com>
Message-ID: <1082502964.907583@excalibur.osa.com.au>
Source record: 26637
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Roger Gt wrote:
> The Indians would war on their Neighbors for anything they wanted.
> Kill anyone who resisted and sell prisoners into slavery.

Thanks, I wondered where the USA learnt to do that.
Made a fine art of it now, haven't they?

3251. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-20 23:35:11 UTC
From: "Watson A.Name \"Watt Sun - the Dark Remover\"" <NOSPAM@dslextreme.com>
Message-ID: <c64c0i$6p7li$3@hades.csu.net>
Source record: 26638
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Anthony Matonak wrote:

> Fred B. McGalliard wrote:
>
>> "Anthony Matonak" <res04ijs@verizon.net> wrote in message
>>
>>> I think the main point is that solar PV is a technology that
>>> does not require massive infrastructure. It's something that
>>> can be done on an individual and distributed basis. The big
>>> power companies really don't have that much advantage over
>>> individuals.
>>
>>
>> Sorry Anthony, but I think this is quite wrong. Solar PV requires a very
>> large infrastructure to build, and a substantial infrastructure to
>> maintain.
>
>
> I don't know about that. Solar PV can be used in any size from digital
> watches to powering hotels. [snip]

The point is not whether or not they can be used, but whether or not
they can be used economically and profitably.

3252. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 00:11:38 UTC
From: Anthony Matonak <res04ijs@verizon.net>
Message-ID: <4085BC3A.6090402@verizon.net>
Source record: 26639
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

Watson A.Name \"Watt Sun - the Dark Remover\" wrote:
> Anthony Matonak wrote:
>
>> Fred B. McGalliard wrote:
>>> Sorry Anthony, but I think this is quite wrong. Solar PV requires a very
>>> large infrastructure to build, and a substantial infrastructure to
>>> maintain.
>>
>> I don't know about that. Solar PV can be used in any size from digital
>> watches to powering hotels. [snip]
>
> The point is not whether or not they can be used, but whether or not
> they can be used economically and profitably.

Oh, if that was the point then it's already been decided. Right now,
solar PV is not economical or profitable except in niche applications
not connected to the grid. Tomorrow... who knows? It does seem to be
getting cheaper all the time.

This, of course, has nothing to do with the question of "Is the
profitable use of solar PV limited to big mega-corporations?"

If we go back a couple of articles in this thread...

KR Williams wrote:
> In article <408355B0.8BCF6208@my.mailbox>, NOspam@my.mailbox
> says...
>> KR Williams wrote:
>
>> > My guess though, is that solar cells for the individual will
>> > never become cheaper than power from the grid, since the power
>> > company has access to the same technology and a *lot* better
>> > financing possibilities. ...and they don't have to have the pay-
>> > back in my lifetime.
>>
>> They have access to the tech, BUT, they also have to maintain the
>> distribution system. ...
>> All this is avoided cost on home solar.
>
> There is still a huge advantage of scale.

Some technologies simply can not be affordably implemented on a small
homeowner scale and for them to be used you need a big company or co-op.
Solar PV is not in that category. The example of a solar powered radio
shows this. It does not require huge resources to build, buy or

maintain. The basic idea is that when it comes to solar PV installations there really isn't much advantage of scale. A huge installation will cost only slightly less per watt as a smaller one.

Anthony

3253. Re: CW IDER

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 01:15:24 UTC
From: xpyttl <xpyttl_NOSPAM@earthling.net>
Message-ID: <108bj318p5cj8c5@corp.supernews.com>
Source record: 26640

"Rv!" <no@spam.here.thanks> wrote in message
news:1082494612.97565.0@iris.uk.clara.net...
> Hi all,
> I seem to have missed something here.
> The OP wanted a CW ID Keyer and we've all came up with

Actually, the OP said IDer, not ID Keyer. Since the application was in the broadcast band, it seemed odd to me that he wanted an IDer, but clearly, I don't understand his application. I sort of wondered whether the COR was part of the problem, too, but he never revealed that much about his app. He seemed relatively happy with the Hamtronics choice, kinda pricey I thought, but they program it. That, apparently, is worth something to the OP. I suspect he may not know Morse so the K1EL keyer wouldn't be much use. In any case, he seemed to totally ignore the keyer suggestions, liked the high priced spread, and indicated he wouldn't mind rolling his own if he had the time.

I thought the 386 was a great suggestion in the true ham tradition. We're always looking for small, sexy solutions, when an old boat anchor could be pressed into service practically free. Well, except for the time, and that, apparently, is an issue for the original poster.

..

3254. soldering with a lighter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 01:38:46 UTC
From: dave d <no@sbcglobal.net>
Message-ID: <Ggkhc.19493$854.14711@newssvr22.news.prodigy.com>
Source record: 26641

Many of you probably figured this out already, but it was a revelation to me. I recently had to do a quick field repair out of my car. I had a voltage inverter and a small iron, but it didn't do very well. That iron has always been wimpy, and between possibly low voltage and cold ambient temperature it didn't work out. I then thought about how much my new Scripto wind resistant long-necked lighter (the kind you use to light a grill) looked like a small blow torch. It really puts out a good strong, tight flame. It wasn't as precise as I would have liked, but it was plenty hot and got the job done with only a few charred edges on the connector that I was repairing. I tinned the free wire away from everything else, left a small mouton blob hanging, quickly got it close to the multi-pin connector where it had to go, and hit the connector very quickly with the flame. It makes me wonder if a decent-quality little torch wouldn't be good for more soldering jobs, especially on thick parts.

3255. Re: Belden 9907

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 02:11:33 UTC
From: moparmedic101@aol.com
Message-ID: <20040420221133.03895.00000072@mb-m27.aol.com>
Source record: 26642

I appreciate all the help. I'll check my soldering and antenna with a VOM first, then with an SWR meter on low power (5 watts) and verify a low SWR as with all my installations. It's just the 1st time using 9907 and wanted feedback. Which is what I got. Thanks all and 73!

3256. Re: Homebrew PTO/VFO question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 02:13:49 UTC
From: J Shrum <shrumj@madisontelco.com>
Message-ID: <mNudnQ5GS4xJRRjd4p2dnA@shawneelink.net>
Source record: 26643

Brian,
Just by looking at that schematic, where would I stop building if I only
wanted the VFO to use on a simple transmitter?

I looked it over, and have a pretty good guess, but I'm not certain.

Thanks.

"Brian" <brianNADA@NOiquestSPAM.net> wrote in message
news:IEhhc.4305$e4.3613@newsread2.news.pas.earthlink.net...
> I grabbed the Tin Ear docs too...I think I will try to build this little
> receiver from my parts pile.
>
> I need another receiver like I need a hole in the head but what the
> heck...looks fun.
>
>
>
>
> "J Shrum" <shrumj@madisontelco.com> wrote in message
> news:ssednUf0MsEPvxjdRVn-ug@shawneelink.net...
> > Agreed!
> >
> > Paul,
> > That tin ear is perfect... That is exactly the PTO I was looking for.
I'll
> > give that one a shot.
> >
> > Thanks for everyone...
> >
> > KC9FFX
> > "Brian" <brianNADA@NOiquestSPAM.net> wrote in message
> > news:pO6hc.1729$eZ5.423@newsread1.news.pas.earthlink.net...
> > > I prefer building stuff out of my junk pile. I do get a greater
feeling
> of
> > > satisfaction when I can dive into the pile on hand and build something
> > that
> > > works.
> > >
> > > It's more fun that way!
> > >
> > > 73
> > >
> > >

> > >
> > >
> > > "J Shrum" <shrumj@madisontelco.com> wrote in message
> > > news:r8ydnft8ROEHEhndRVn-tw@shawneelink.net...
> > > > Point taken.
> > > >
> > > > But my goal at this point is to build w/ salvaged parts from my
mound
> of
> > > > junk...
> > > >
> > >
> > >
> >
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>
>

3257. Re: soldering with a lighter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 02:50:10 UTC
From: k3bu@aol.comNoUsama
Message-ID: <20040420225010.09311.00000243@mb-m28.aol.com>
Source record: 26644

>It
>makes me wonder if a decent-quality little torch wouldn't be good for more
>soldering jobs, especially on thick parts.
>

They sell pencil point soldering torches, various configurations.

Yuri

3258. Re: homebrew specialty paint finish

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 03:05:18 UTC
From: "Mike T." <Mike@rrs.com>
Message-ID: <MJadnV09XYw6eBjdRVn-hA@look.ca>
Source record: 26645

"Uwe" <outhouse@midcoast.com> wrote in message
news:BCA9BBF4.4EA1%outhouse@midcoast.com...
> So the project is done and you want to put it in a box, maybe even paint
> it...
>
> Well here is a slightly unrelated inquiry, maybe someone here knows to
point
> me in the right direction or give me the proper name for a kind of paint,
I
> call it a crinkle finish, some refer to it as alligator finish.
>
> It is the kind of paint finish you see on Bolex and Arriflex movie
cameras,
> I also see it on military style electronic gear, very resilient, black
> crinkly finish which also prevents the item from slipping out of your
hand.
>
> What is it really called and who would have such stuff??
>
> 73 Uwe<

See above links for various possibilities, sorry I can't help you. However, being a 'film professsional', by virture of my job, I've also seen these cameras 'up close'. What I was wondering was: is this truly 'paint' on those Arri's or more like a custom colored & baked on finish. The finishes are almost bulletproof / scratchproof and talk about resilient. If those cameras are indeed 'painted' - it's amazing because of it's durability.

Thanks for a good question
Mike T

>

3259. Re: homebrew specialty paint finish

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 04:44:52 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <8%mhc.5283$_o3.178218@bgtnsc05-news.ops.worldnet.att.net>
Source record: 26646

"Mike T." <Mike@rrs.com> wrote in message
news:MJadnV09XYw6eBjdRVn-hA@look.ca...
> See above links for various possibilities, sorry I can't help you.
However,
> being a 'film professsional', by virture of my job, I've also seen these
> cameras 'up close'. What I was wondering was: is this truly 'paint' on
those
> Arri's or more like a custom colored & baked on finish. The finishes are
> almost bulletproof / scratchproof and talk about resilient. If those
cameras
> are indeed 'painted' - it's amazing because of it's durability.

These are Swiss and German cameras, after all. They don't fool around.
Commercial wrinkle finish required a few steps to complete, it wasn't simply
sprayed on. Like all good paint jobs, it was baked, which hardens it. I once
saw a 1969 GTO done in black wrinkle. Saved having to wax it, I guess.

73,

"PM"

3260. DDS building blocks....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 06:31:12 UTC
From: nospam@nowhere.nil
Message-ID: <a74c80pu30obd6p72t6l9qjhob3q2dhcl7@4ax.com>
Source record: 26498

This is a bit, long but bear with me it is hombrew releated.

I'm one of the principals in a company called NetBurner.
We build Network enabled CPU modules etc...

The company has some core capabilities,
PCB design, Fab, SMT Assembly (BGA, 0402's) ,
Order processing, order fufilment UPS shipping etc...

As a ham and an engineer that likes to build things
I'm frustrated with some of todays finer pitch SMT technology.

I've often contemplated using the business to come out with a line of
"Hobby" oriented PCB's
Things like an ADI high end DDS
Some of the cool direct conversion mixer IC's ...
Simple switching power supplies...
Small uP boards (AVR etc...)
RS-232 level shifters....
MOSFET full bridge motor drive.
ADC's
DAC's
Audio amp chips...

and so on....

I'm not looking to make any $ on the hobby product line, but I'm not
looking to loose any $ either.

As a first pass we would build things that I would find fun to play
with.

The boards would be fully assembled, with a minimal implmentation of
what ever function they are supposed to do. Nothing fancy, nothing
extra just modules hobbiests can play with.
Support would be limited to Schematics and E-Mail.

Since almost all sales would be 1's and 2's cost would be about 4X
the 100pc component cost.

Would one sell any of this stuff?

What sort of modules would you personally buy?

Paul (KL7JG)

3261. Re: soldering with a lighter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 06:31:17 UTC
From: remove_ok1sip@atlas.cz
Message-ID: <5f5159fa.0404202231.44bfbaae@posting.google.com>
Source record: 26497

I remember I have read about technology for soldering wires: Remove the insulation and twist them together. Wrap the twisted wires with thin solder (i.e. "wire" containing the alloy and flux). Pack all this into aluminum foil tightly. Heat with a gas lighter for several seconds. The aluminum foil helps to distribute heat, prevents the solder alloy from dripping, the copper from oxidation and the flux and the wire insulation from burning. It can be removed after the connection cools or it may be left where it is.

BR from Ivan OK1SIP

3262. DIAGRAM

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 06:46:27 UTC
From: ON4VM <ageirna@skynet.be>
Message-ID: <408618ae$0$10899$a0ced6e1@news.skynet.be>
Source record: 26499

I am looking for a diagram from a RX ITT MAC KAY 3030A
Thanks

3263. Re: soldering with a lighter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 06:57:23 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <PL5$$$CTthhAFAyZ@ifwtech.co.uk>
Source record: 26501

dave d wrote:
>Many of you probably figured this out already, but it was a revelation to
>me. I recently had to do a quick field repair out of my car. I had a
>voltage inverter and a small iron, but it didn't do very well. That iron
>has always been wimpy, and between possibly low voltage and cold ambient
>temperature it didn't work out. I then thought about how much my new
>Scripto wind resistant long-necked lighter (the kind you use to light a
>grill) looked like a small blow torch. It really puts out a good strong,
>tight flame. It wasn't as precise as I would have liked, but it was plenty
>hot and got the job done with only a few charred edges on the connector that
>I was repairing. I tinned the free wire away from everything else, left a
>small mouton blob hanging, quickly got it close to the multi-pin connector
>where it had to go, and hit the connector very quickly with the flame. It
>makes me wonder if a decent-quality little torch wouldn't be good for more
>soldering jobs, especially on thick parts.
>
>
If you're out on the road, then whatever works is good.

Back home, a better use for a flame is as background heat for the
regular small soldering iron. The background heat provides most of the
temperature increase, but not enough to melt any solder. Then the small
iron *can* melt the solder, exactly where you want it.

This technique lets you do fine-detail soldering, even on large lumps of
metal.

Other background heat sources include an electric hot-air gun, a gas
torch (at a distance, never close-up) or sometimes the cooker hob.

This is definitely my preferred method for soldering PL-259s, even
outdoors in the cold: a quick blast from the hot-air gun onto the plug
body, and then the regular workbench iron works fine.

(Yes, I *do* have a traditional monster soldering iron, I *have* used it
and of course it *does* work. But not as well. This way works so much
better, I've forgotten where the monster iron is...)

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

3264. Re: CW IDER

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 09:52:10 UTC
From: Scott <acepilot@bloomer.net>
Message-ID: <Ynshc.1101$KG2.1667@reggie.win.bright.net>
Source record: 26500

Instead of using the K1EL KEYER, I would suggest the K-ID chip. K1EL
programs it so one doesn't need to know Morse at all. 8 Dollars plus
the price of one capacitor is certainly hard to beat!

Scott
N0EDV

xpyttl wrote:

> "Rv!" <no@spam.here.thanks> wrote in message
> news:1082494612.97565.0@iris.uk.clara.net...
>
>>Hi all,
>>I seem to have missed something here.
>>The OP wanted a CW ID Keyer and we've all came up with
>
>
> Actually, the OP said IDer, not ID Keyer. Since the application was in the
> broadcast band, it seemed odd to me that he wanted an IDer, but clearly, I
> don't understand his application. I sort of wondered whether the COR was
> part of the problem, too, but he never revealed that much about his app. He
> seemed relatively happy with the Hamtronics choice, kinda pricey I thought,
> but they program it. That, apparently, is worth something to the OP. I
> suspect he may not know Morse so the K1EL keyer wouldn't be much use. In
> any case, he seemed to totally ignore the keyer suggestions, liked the high
> priced spread, and indicated he wouldn't mind rolling his own if he had the
> time.
>
> I thought the 386 was a great suggestion in the true ham tradition. We're
> always looking for small, sexy solutions, when an old boat anchor could be
> pressed into service practically free. Well, except for the time, and that,
> apparently, is an issue for the original poster.
>
> ..
>
>

3265. Re: DDS building blocks....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 12:14:20 UTC
From: xpyttl <xpyttl_NOSPAM@earthling.net>
Message-ID: <108cpd2pfqdah5c@corp.supernews.com>
Source record: 26502

Paul

I think the NJQRP DDS Daughtercard is a good model for something that would sell. Indeed, NJQRP has had to take a break on making them because the volunteers who actually kit them are totally fried from assembling literally thousands of the things.

NJQRP and AmQRP have had remarkable success with their kits lately, not just the daughtercard. The PIC-EL had to be stopped after only a couple of months, again, because they neede a break more than anything else. Ditto with some others. I'm not sure what the magic is, but the daughtercard is a component in a number of other kits, as well as providing a simple module to solve a hard problem for folks homebrewing their own stuff. Of course, they have the unfair advantage of free labor, but on the flip side, they don't have the access to volume discounts that someone who was making a lot of other stuff might have.

With high quality circuit boards, I think the TSSOPs are within reach of most amateurs. Most of us, however, can't make circuit boards with that sort of feature size. The appearance of even more frustrating packages like BGAs is worrisome, though.

One of the challenges, of course, is that with these newer, more complex circuits, amateurs don't become comfortable with them until well into the product lifecycle. By the time the amateur community latches on to a part, it is already obsolete. This can lead to a pretty short life for some of these things. Some kits like the Small Wonder Labs DSW had to be pulled because the parts went out of availability almost before they appeared.

A potential way around this might be to package functionally complete modules that folks could use without really having to get to know the innards. This eliminates things like the synthesizers that really need microcontrollers to operate, thus requiring builders to get familiar with them, but perhaps something like a mixer, IF strip, etc. might work.

A lot of the builders these days are QRPers, and they are always looking for reducing size. I would think something like the FAR Circuits 9850 board, but entirely surface mount, might be a hit. You would need to provide some sort of ICSP port for this to play, however. And the 9850 has to be well along in its lifecycle. Personally, I would like to see some sort of quadrature DDS along with a Tayloe mixer pair.

Another angle you might pursue is using AmQRP to market the things. AmQRP is having trouble keeping up with the demand for their stuff. They really do seem to have figured out what sells and what the price point is. What they haven't figured out is how to assemble the kits in the sorts of volume

they are seeing. I don't know how comfortable they would be with that sort
of model, but given your production capability, and their access to the
market, it seems to make sense.

..

<nospam@nowhere.nil> wrote in message
news:a74c80pu30obd6p72t6l9qjhob3q2dhcl7@4ax.com...
> This is a bit, long but bear with me it is hombrew releated.
>
> I'm one of the principals in a company called NetBurner.
> We build Network enabled CPU modules etc...
>
> The company has some core capabilities,
> PCB design, Fab, SMT Assembly (BGA, 0402's) ,
> Order processing, order fufilment UPS shipping etc...
>
> As a ham and an engineer that likes to build things
> I'm frustrated with some of todays finer pitch SMT technology.
>
> I've often contemplated using the business to come out with a line of
> "Hobby" oriented PCB's
> Things like an ADI high end DDS
> Some of the cool direct conversion mixer IC's ...
> Simple switching power supplies...
> Small uP boards (AVR etc...)
> RS-232 level shifters....
> MOSFET full bridge motor drive.
> ADC's
> DAC's
> Audio amp chips...
>
> and so on....
>
> I'm not looking to make any $ on the hobby product line, but I'm not
> looking to loose any $ either.
>
> As a first pass we would build things that I would find fun to play
> with.
>
> The boards would be fully assembled, with a minimal implmentation of
> what ever function they are supposed to do. Nothing fancy, nothing
> extra just modules hobbiests can play with.
> Support would be limited to Schematics and E-Mail.
>
> Since almost all sales would be 1's and 2's cost would be about 4X
> the 100pc component cost.
>
>
> Would one sell any of this stuff?
>

> What sort of modules would you personally buy?
>
>
> Paul (KL7JG)
>
>
>
>
>
>
>
>
>
>
>

3266. Re: XTAL oscillator with a XOR gate

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 12:41:35 UTC
From: skavanagh72nospam@yahoo.ca
Message-ID: <5249fb3f.0404210441.7f907b3f@posting.google.com>
Source record: 26503

I have built a few LC oscillators (VFOs) using a single gate of a
74HC04. Yes I know the 'HCU-4 should give less trouble, but I didn't
have any at the time. For an example, see

http://www.arsqrp.com/ars/images/backissue_images/2002_images/0602_images/ve3sma_images/Vfo1.gif

It should be possible to insert a crystal somewhere in the feedback
path to get a single-inverter crystal oscillator, though I have not
tried it. The key is that the tuned circuit is used to provide an
extra 180 degree phase shift.

Steve VE3SMA

PaoloC <ollollo@hotpop.com> wrote in message
news:<c62jek$73cbv$1@ID-199778.news.uni-berlin.de>...
> Hi,
> thanks to all those who replied and discussed this topic, providing me
> with a lot of good suggestions.
>

3267. Re: XTAL oscillator with a XOR gate

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 13:06:53 UTC
From: skavanagh72nospam@yahoo.ca
Message-ID: <5249fb3f.0404210506.7606553@posting.google.com>
Source record: 26504

In fact I notice, now I am starting to completely wake up this
morning, in my link if you remove all the tuning components and
buffers, short the 330pF cap, and replace the inductor with a crystal
it becomes a standard crystal oscillator circuit used with the 'HCU04.
Seems to me it should work with the 'HC86 but there is always the
possibility of spurious oscillations with such buffered gates.

Steve VE3SMA

PaoloC <ollollo@hotpop.com> wrote in message
news:<c62jek$73cbv$1@ID-199778.news.uni-berlin.de>...
> Hi,
> thanks to all those who replied and discussed this topic, providing me
> with a lot of good suggestions.

3268. Re: DDS building blocks....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 13:31:06 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <uluhc.6647$_o3.218665@bgtnsc05-news.ops.worldnet.att.net>
Source record: 26505

"xpyttl" <xpyttl_NOSPAM@earthling.net> wrote in message
news:108cpd2pfqdah5c@corp.supernews.com...

> Another angle you might pursue is using AmQRP to market the things. AmQRP
> is having trouble keeping up with the demand for their stuff. They really
> do seem to have figured out what sells and what the price point is. What
> they haven't figured out is how to assemble the kits in the sorts of
volume
> they are seeing. I don't know how comfortable they would be with that sort
> of model, but given your production capability, and their access to the
> market, it seems to make sense.

A very well-reasoned reply. AmQRP has been the victim of its own success.
Based on the number of sales, I'm surprised no commercial vendor has offered
to PIC up the job. The prices would go up, of course, but there is still a
large demand, and many QRPers (not this one!) seem to have deep pockets.
Analog has been pretty well beaten to death in the QRP domain, and there
will be a growing market for products that are closer to the
state-of-the-art.

More and more new rigs are coming with VHF/UHF weak-signal capability as
standard. While not directly DDS-related, I think there may be a nascent
market in inexpensive narrow-band VHF/UHF transverters and transceivers,
too. What's available now is excellent, but priced accordingly. We have to
get more activity going on those bands or we're going to lose them.

73,

"PM"

3269. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 14:55:58 UTC
From: Richard Henry <rphenry@home.com>
Message-ID: <5Yvhc.26195$ab3.9986@fed1read02>
Source record: 26506
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Roger Gt" <not@here.net> wrote in message
news:6Mqhc.53755$TJ3.46994@newssvr25.news.prodigy.com...
> X-No-Archive: yes
> "Roger Gt" wrote
> : "Richard Henry" wrote
> : : "Roger Gt" wrote
> : : > "Richard Henry" wrote
> : : > : "Roger Gt" wrote
> : : > : > "maxfoo" wrote
> : : > : > : "Roger Gt" wrote
> : : > <snip>
> : : > : > Nope... But when D.D. Eisenhower was president he
> : declared
> : : > : > martial law and cleared out the majority of the
> Illegals.
> : I
> : : > : > can't see why that wouldn't work again.
> : : > : Martial law? I must have missed that.
> : : > Well gee, what were you doing in 1956-1960? Didn't you
> vote?
> : : In 1960, I turned 13, so no voting for me then.
> : : I don't recall any martial law, either. Can you be more
> : specific?
> :
> : I remember the announcement, I was in the Army at the time and
> : thought it was going to send me to a new assignment (it Didn't).
> : But I haven't seen anything about it a long time. Perhaps it
> was
> : the threat of marshal law that sent many thousands of illegal
> : aliens home. Whatever it worked! There were complaints about
> : the lost farm labor and a guest worker program was set up.
> :
> : I'll research it and get back to you with some references.....
> :
> Well Ike did use Martial law, but not for aliens!

Still no reference?

3270. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 15:07:26 UTC
From: "Fred B. McGalliard" <frederick.b.mcgalliard@boeing.com>
Message-ID: <HwJ0oD.1Iw@news.boeing.com>
Source record: 26507
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Clifford Heath" <cjh-nospam@nospaManagesoft.com> wrote in message
news:1082502964.907583@excalibur.osa.com.au...
> Roger Gt wrote:
> > The Indians would war on their Neighbors for anything they wanted.
> > Kill anyone who resisted and sell prisoners into slavery.
>
> Thanks, I wondered where the USA learnt to do that.
> Made a fine art of it now, haven't they?

I wish. If they are making a profit in war, why is our debt load increasing
so fast?

3271. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 16:00:56 UTC
From: James Beck <jim@reallykillersystems.com>
Message-ID: <MPG.1af064caddde2af8989969@news.east.earthlink.net>
Source record: 26508
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

In article <HwJ0oD.1Iw@news.boeing.com>,
frederick.b.mcgalliard@boeing.com says...
>
> "Clifford Heath" <cjh-nospam@nospaManagesoft.com> wrote in message
> news:1082502964.907583@excalibur.osa.com.au...
> > Roger Gt wrote:
> > > The Indians would war on their Neighbors for anything they wanted.
> > > Kill anyone who resisted and sell prisoners into slavery.
> >
> > Thanks, I wondered where the USA learnt to do that.
> > Made a fine art of it now, haven't they?
>
> I wish. If they are making a profit in war, why is our debt load increasing
> so fast?
>
>
>
No, my favorite one was the "Blood for Oil" screamers.
Since we aren't getting the oil and our prices are now on the rise the
same group is now claiming that it was all a plot to raise oil prices so
"they" could reap huge profits. See how no matter what happens there is
still something to bitch about and it is always "their" fault. Sort of
like the Y2K hysteria.

Jim

3272. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 17:17:55 UTC
From: Jan Panteltje <pNaonStpealmtje@yahoo.com>
Message-ID: <c66abp$2ke9$1@news.wplus.net>
Source record: 26509
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On a sunny day (Tue, 20 Apr 2004 17:11:38 -0700) it happened Anthony Matonak
<res04ijs@verizon.net> wrote in <4085BC3A.6090402@verizon.net>:

>Watson A.Name \"Watt Sun - the Dark Remover\" wrote:
>> Anthony Matonak wrote:
>>
>>> Fred B. McGalliard wrote:
>>>> Sorry Anthony, but I think this is quite wrong. Solar PV requires a very
>>>> large infrastructure to build, and a substantial infrastructure to
>>>> maintain.
>>>
>>> I don't know about that. Solar PV can be used in any size from digital
>>> watches to powering hotels. [snip]
>>
>> The point is not whether or not they can be used, but whether or not
>> they can be used economically and profitably.
>
>Oh, if that was the point then it's already been decided. Right now,
>solar PV is not economical or profitable except in niche applications
>not connected to the grid. Tomorrow... who knows? It does seem to be
>getting cheaper all the time.
>
>This, of course, has nothing to do with the question of "Is the
>profitable use of solar PV limited to big mega-corporations?"
I like it that the Dutch solar car went cross Australia in 3 days or so
with an average of over 100 km/h last year.
Now here is a very sensible application in a suitable 'solar' climate.
Those photocells were the same as used by the European Space Agency.
I would love to have a few square meters of those to play with.
JP

3273. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 17:20:04 UTC
From: Jan Panteltje <pNaonStpealmtje@yahoo.com>
Message-ID: <c66afq$2kuo$1@news.wplus.net>
Source record: 26510
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

On a sunny day (Wed, 21 Apr 2004 15:07:26 GMT) it happened "Fred B.
McGalliard" <frederick.b.mcgalliard@boeing.com> wrote in
<HwJ0oD.1Iw@news.boeing.com>:

>
>"Clifford Heath" <cjh-nospam@nospaManagesoft.com> wrote in message
>news:1082502964.907583@excalibur.osa.com.au...
>> Roger Gt wrote:
>> > The Indians would war on their Neighbors for anything they wanted.
>> > Kill anyone who resisted and sell prisoners into slavery.
>>
>> Thanks, I wondered where the USA learnt to do that.
>> Made a fine art of it now, haven't they?
>
>I wish. If they are making a profit in war, why is our debt load increasing
>so fast?
And now that debt is so high, money is scarce so interest rates will go up.
Your house may become very expensive, thank Bush and clowns.
JP

3274. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 17:54:42 UTC
From: "Fred B. McGalliard" <frederick.b.mcgalliard@boeing.com>
Message-ID: <HwJ8F4.B25@news.boeing.com>
Source record: 26511
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"James Beck" <jim@reallykillersystems.com> wrote in message
news:MPG.1af064caddde2af8989969@news.east.earthlink.net...
...
> >
> No, my favorite one was the "Blood for Oil" screamers.
> Since we aren't getting the oil and our prices are now on the rise the
> same group is now claiming that it was all a plot to raise oil prices so
> "they" could reap huge profits. See how no matter what happens there is
> still something to bitch about and it is always "their" fault. Sort of
> like the Y2K hysteria.

Well, Jim, my favorite is the fact the oil companies are reaping super profits and able to claim it has something to do with a minor adjustment in the price of foreign oil. Certainly nothing they are doing to adjust their company profits. Really! Ignore the man behind the curtain. Yeah, sure!

3275. Re: HP680 Chart Recorder

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 18:11:37 UTC
From: munged@address.com
Message-ID: <1082571097.619315@cswreg.cos.agilent.com>
Source record: 26512
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

In rec.radio.amateur.homebrew Dick <dick@langwang.demon.co.uk> wrote:
[previous paragraph deleted]

> Particularly interested in knowing where HP mounted the ink
> reservoir, was it on the moving carriage that carried the pen or is it
> on the fixed body of the recorder ? Maybe someone has had experience of
> using this equipment and can describe the arrangement they saw when
> refilling the ink reservoir. Or did HP use disposable ink cartridges ?

There were several variants of this chart recorder, 680,681,682,683. The one I remember used Esterbrook pen cartridges, HP part numbers 1530-0095 (blue), 1530-0703 (red), 1530-0704 (green), 1530-0984 (purple), and 1530-0905 (black). The cartridge was mounted on the inside back wall of cabinet, and attached to the pen stylus with a capillary tube about 8" long. You might still be able to obtain the cartridges from an office supply store. Manuals are available at http://www.manualsplus.com

I particularly recall one incident where a technician was trying to clear a clogged capillary tube. He disconnected the tube at the stylus end and fitted a 10CC hypodermic syringe to the loose end. He then shoved the plunger with great gusto and the next sound I heard was a loud "POP!!!". The cartridge exploded, covering his face and shirt with red ink dots.

Don K6LTS
email address at the QRZ website.

3276. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 18:19:55 UTC
From: Roger Gt <not@here.net>
Message-ID: <fXyhc.53885$FK6.26798@newssvr25.news.prodigy.com>
Source record: 26513
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

: > X-No-Archive: yes
"Richard Henry" wrote
: "Roger Gt" wrote
: > "Roger Gt" wrote
: > : "Richard Henry" wrote
: > : : "Roger Gt" wrote
: > : : > "Richard Henry" wrote
: > : : > : "Roger Gt" wrote
: > : : > : > "maxfoo" wrote
: > : : > : > : "Roger Gt" wrote
: > : : > <snip>
: > : : > : > Nope... But when D.D. Eisenhower was president he
: > : : > : > declared martial law and cleared out the majority
: > : : > : > of the Illegals.
: > : I
: > : : > : > can't see why that wouldn't work again.
: > : : > : Martial law? I must have missed that.
: > : : > Well gee, what were you doing in 1956-1960?
: > : : > Didn't you vote?
: > : : In 1960, I turned 13, so no voting for me then.
: > : : I don't recall any martial law, either.
: > : : Can you be more specific?
: > :
: > : I remember the announcement, I was in the Army at the time
and
: > : thought it was going to send me to a new assignment (it
Didn't).
: > : But I haven't seen anything about it a long time. Perhaps
it
: > : was
: > : the threat of marshal law that sent many thousands of
illegal
: > : aliens home. Whatever it worked! There were complaints
about
: > : the lost farm labor and a guest worker program was set up.
: > :
: > : I'll research it and get back to you with some
references.....
: > :
: > Well Ike did use Martial law, but not for aliens!
:
: Still no reference?
:

Nothing authoritive. Just old news editorials criticizing Ike, but not specific enough to say exactly what was done and when. It wasn't much of an issue then. Just needed to be done.

3277. Re: homebrew specialty paint finish

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 18:23:13 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BCAC3452.502C%outhouse@midcoast.com>
Source record: 26514

So here is what happenend, following some of the leads from here I got myself a can of wrinkle paint through a local automotive supplier.

They want three heavy coats spaced ten minutes apart and then leave it alone for 24h.

The wrinkle develops after 2 or so hours if you did everything right, mostly that means heavy even coats.

I tested the stuff on an angled piece with corners and crevices and there it is difficult to control the thickness and the results vary also. A flat portion seems easier but you still need to control the thickness otherwise you will end up with areas which don't wrinkle.

For my purpose, rejuvenating the face plate of a military type electronic device I think I will be fine, but I can see that there is definetly a learning curve before I spray paint my Bolex movie camera here in the kitchen...

73 Uwe

in article 8%mhc.5283$_o3.178218@bgtnsc05-news.ops.worldnet.att.net, Paul_Morphy at nopaul_morphy2@coolgoose.com wrote on 4/21/04 00:44:

>
> "Mike T." <Mike@rrs.com> wrote in message
> news:MJadnV09XYw6eBjdRVn-hA@look.ca...
>> See above links for various possibilities, sorry I can't help you.
> However,
>> being a 'film professsional', by virture of my job, I've also seen these
>> cameras 'up close'. What I was wondering was: is this truly 'paint' on
> those
>> Arri's or more like a custom colored & baked on finish. The finishes are
>> almost bulletproof / scratchproof and talk about resilient. If those
> cameras
>> are indeed 'painted' - it's amazing because of it's durability.
>
> These are Swiss and German cameras, after all. They don't fool around.
> Commercial wrinkle finish required a few steps to complete, it wasn't simply
> sprayed on. Like all good paint jobs, it was baked, which hardens it. I once
> saw a 1969 GTO done in black wrinkle. Saved having to wax it, I guess.
>
> 73,
>
> "PM"
>

>

3278. Re: Oscillating 3rd overtone XTAL at fundamental?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 21:44:53 UTC
From: Ian Jackson <REMOVE-THIS-BIT@g3ohx.demon.co.uk>
Message-ID: <7yC0xYOVtuhAFw24@g3ohx.demon.co.uk>
Source record: 26515

In message <c61ba1$t9f$1@newshost.mot.com>, Steve Nosko
<suteuve.nosukowicuz@moutouroula.com> writes
>
>"Michael Black" <et472@FreeNet.Carleton.CA> wrote in message
>news:c5vtfohpv1@freenet9.carleton.ca...
>> PaoloC (ollollo@hotpop.com) writes:
>> > Hi.
>> > I have spent part of the weekend trying to resonate al old CB XTAL at
>> > its fundamental frequency.
>> >
>> > The XTAL is labelled 27.125 MHz, with a fundamental of about 9.041 MHz,
>> > which falls into 18m HAM band when multiplied by two. I assume 27MHz
>> > XTALs are 3rd overtone....
>>
>> Could the crystal be a receive crystal? CB crystals tended to show
>> the channel number or the frequency of the channel, and so if you simply
>> looked at the marked frequency, it would not tell you if it's for
>> transmit or receive. Though the ones I've seen did mark them with
>> "R" or "T". The point is that if it's a receive crystal, it wouldn't
>> be 1/3 of 27.125 but 27.125-IF and then divided by three.
>
>IFs were frequently 455KHz
>
> I have used fundamental crystals on their overtones and overtone
>crystals on the fundamental. They are not exactly 1/3 or 1/5 ratio due to
>parasitics in the crystal. All crystals have the fund and OT responses, but
>the responses are optimized for the intended use - by changing some of the
>construction. (I'm talking AT cuts)
> Overtone crystals *tend* to be used in the SERIES resonant mode, though
>not always. Fundamental crystals tend to be used mostly in the parallel
>resonant mode. This will also cause additinal frequency error when using
>the marked frequency. The parallel freq is higher than the series (if I
>recall correctly)
> If I recall, the two gate oscillator is a series resonant oscillator and
>the one gate is parallel. I would use a transistor Colpits oscillator
>myself. The digital gate oscillators can run the crystal at a higher drive
>than it should causing more crystal heating than desired (more drift
>w/time).
> If you are going to use a OT xtal as a fund., I'd pick a parallel type
>osc like the Colpits (I think it has another name when it has a crystal
>rather than a coil). I never did like the digital gate oscillators. They
>tend to be a *bruit force* oscillator. Because of the Rs of the crystal,
>crystals of some frequencies are easier to over drive than others.
>Unfortunately, I don't remember which is which.

> The fact that your 10mMHz xtal works is a good start. The other one
>probably will, but since it was made for the third OT, there may be enough
>difference to keep it from oscillating without some circuit change.
> If you have no scope, measure the current drain. There may be a change
>when the xtal is inserted if it is oscillating. Also, you could try
>measuring some voltage through a large resistor or choke to see changes when
>the xtal is inserted.
>

Regarding 'series' and 'parallel' modes, ALL crystals actually resonate
in a series mode.

The simplistic equivalent circuit of a crystal is a series L-C tuned
circuit with a capacitor across the whole thing. The series C (call it
C1) is relatively very small (compared with the parallel C, C2) and the
L is very large (ie the L/C1 ratio is large). The parallel C2 largely
consists of the physical capacitance caused by the plating on each side
of the actual crystal. In some circuits the value of C2 is deliberately
increased by adding actual parallel capacitance (see later).

Looking at the equivalent circuit, you will see that the series C1, the
parallel C2 and the inductance are all in a loop, ie the three form
another series-tuned circuit. As C1 and C2 are in series, the
straight-through 'series' resonance of L and C1 must be at al lower
frequency than the 'parallel' resonance of L + C1 + C2 (although the two
resonances are always very close together).

In the 'normal' series-resonance mode (L with C1), an RF current is
simply fed through the crystal. This will be the case when it is
connected between the pins of an IC and there are no other 'tuning'
elements. Adding parallel C should have no effect on the
series-resonance, but it does bring the 'series' and 'parallel'
resonances closer together. This tends to force the oscillation
frequency lower. The 'parallel' mode tends to be more applicable where
impedances are higher (eg in a Colpitts circuit).

As C2 is much greater than C1, the oscillation frequency does not change
much if C2 is varied. However, it does change. Most crystals intended to
operate in this 'parallel' mode specify their frequency with a 30pF
shunt capacitor. Such crystals are usually used at the lower frequencies
(up to a few MHz). At the higher frequencies, the 'series' mode is
almost always used.

As C1 is very small, in the 'series' mode (L and C1) adding capacity in
series with the crystal has very little effect on the frequency unless
the extra capacitor is itself very small (and this tends to kill the
oscillation).

Finally, 'overtone' crystals should always be usable on the lower
overtones (essentially the odd harmonic frequencies of the fundamental),
and may (even if some TLC is required) operate on some of the higher
overtones.

I think I have this right!
Cheers,
Ian.
--

3279. Toroid ID question...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 22:55:20 UTC
From: J Shrum <shrumj@madisontelco.com>
Message-ID: <D-idnbluoKhTZhvd4p2dnA@shawneelink.net>
Source record: 26516

Greetings,

Recently I bought a grab bag of mixed toroids from www.allelectronics.com .
I bought some T-37's and T-50's. The problem is... they're not color coded,
and not identified by mix. So I have mystery toroids T-37-?? and T-50-??...

The question is, is there a way to come up w/ a rough estimate of the mix
value? I wound some test coils and come up w/ these figures:

T-50 15turns 30awg = ~150uH
T-37 9turns 30awg = ~180uH

Perhaps there is a chart or something similar somewhere that I have
overlooked that will give me an idea.

Thanks for all assistance.

Jim Shrum - KC9FFX

3280. Re: Homebrew PTO/VFO question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-21 23:21:40 UTC
From: Brian <brianNADA@NOiquestSPAM.net>
Message-ID: <8mDhc.6082$e4.1965@newsread2.news.pas.earthlink.net>
Source record: 26517

James,

I printed out the docs today....lemme look at it.

Good question...

"J Shrum" <shrumj@madisontelco.com> wrote in message
news:mNudnQ5GS4xJRRjd4p2dnA@shawneelink.net...
> Brian,
> Just by looking at that schematic, where would I stop building if I only
> wanted the VFO to use on a simple transmitter?
>
> I looked it over, and have a pretty good guess, but I'm not certain.
>
> Thanks.
>
> "Brian" <brianNADA@NOiquestSPAM.net> wrote in message
> news:IEhhc.4305$e4.3613@newsread2.news.pas.earthlink.net...
> > I grabbed the Tin Ear docs too...I think I will try to build this little
> > receiver from my parts pile.
> >
> > I need another receiver like I need a hole in the head but what the
> > heck...looks fun.
> >
> >
> >
> >
> > "J Shrum" <shrumj@madisontelco.com> wrote in message
> > news:ssednUf0MsEPvxjdRVn-ug@shawneelink.net...
> > > Agreed!
> > >
> > > Paul,
> > > That tin ear is perfect... That is exactly the PTO I was looking for.
> I'll
> > > give that one a shot.
> > >
> > > Thanks for everyone...
> > >
> > > KC9FFX
> > > "Brian" <brianNADA@NOiquestSPAM.net> wrote in message
> > > news:pO6hc.1729$eZ5.423@newsread1.news.pas.earthlink.net...
> > > > I prefer building stuff out of my junk pile. I do get a greater
> feeling
> > of
> > > > satisfaction when I can dive into the pile on hand and build

```
something
> > > that
> > > > works.
> > > >
> > > > It's more fun that way!
> > > >
> > > > 73
> > > >
> > > >
> > > >
> > > >
> > > > "J Shrum" <shrumj@madisontelco.com> wrote in message
> > > > news:r8ydnft8ROEHEhndRVn-tw@shawneelink.net...
> > > > > Point taken.
> > > > >
> > > > > But my goal at this point is to build w/ salvaged parts from my
> mound
> > of
> > > > > junk...
> > > > >
> > > >
> > > >
> > >
> > >
> >
> >
>
>
```

3281. Re: Toroid ID question...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 00:02:43 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BCAC83E1.5077%outhouse@midcoast.com>
Source record: 26518

Look at the tables in the ARRL Handbook, in 2003 it was in Chapter 24, for tables with the info you need to calculate the inductance on a given core with a certain number of windings. You need to solve for AL obviously since you want to find your core.

Uwe

in article D-idnbluoKhTZhvd4p2dnA@shawneelink.net, J Shrum at shrumj@madisontelco.com wrote on 4/21/04 18:55:

> Greetings,
>
> Recently I bought a grab bag of mixed toroids from www.allelectronics.com .
> I bought some T-37's and T-50's. The problem is... they're not color coded,
> and not identified by mix. So I have mystery toroids T-37-?? and T-50-??...
>
> The question is, is there a way to come up w/ a rough estimate of the mix
> value? I wound some test coils and come up w/ these figures:
>
> T-50 15turns 30awg = ~150uH
> T-37 9turns 30awg = ~180uH
>
> Perhaps there is a chart or something similar somewhere that I have
> overlooked that will give me an idea.
>
> Thanks for all assistance.
>
> Jim Shrum - KC9FFX
>
>

3282. Re: Solid State Design For The Radio Amateur

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 00:56:08 UTC
From: Bob P <nospam@nospam.end>
Message-ID: <IKEhc.497$PM3.80@newssvr15.news.prodigy.com>
Source record: 26519

My interest was heightened but Experimental Methods cost $50 on the ARRL web site! More than the handbook.
A copy of Solid State design went on ebay for $10.50 recently
Bob
kb8tl

"Roy Lewallen" <w7el@eznec.com> wrote in message news:108aqvcg3mb8a1@corp.supernews.com...
> Just in case you might not know. . .
>
> There's a newer book that contains a lot of the same information, plus
> more, and a CD with some very useful programs and data. It's
> _Experimental Methods in RF Design_, by Hayward, Campbell, and Larkin,
> available from the ARRL and many bookstores.
>
> Unless you want _Solid State Design_ for a collection, you might
> consider the newer book.
>
> Roy Lewallen, W7EL
>
> David Roper wrote:
> > Can anyone tell me where I could obtain a copy of the ARRL's book "Solid
> > State Design for the Radio Amateur" Secondhand or new in any condition.
> > M0DAD
> >
> >
>

3283. Re: Solid State Design For The Radio Amateur

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 01:43:37 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <drFhc.616$IW1.95963@attbi_s52>
Source record: 26520

> My interest was heightened but Experimental Methods cost $50 on the ARRL
web
> site! More than the handbook.
> A copy of Solid State design went on ebay for $10.50 recently
> Bob
> kb8tl

And both worth it at twice the price.

W4ZCB

3284. Re: Toroid ID question...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 01:57:52 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <AEFhc.570$_L6.94866@attbi_s53>
Source record: 26521

> The question is, is there a way to come up w/ a rough estimate of the mix
> value? I wound some test coils and come up w/ these figures:
>
> T-50 15turns 30awg = ~150uH
> T-37 9turns 30awg = ~180uH
>
> Perhaps there is a chart or something similar somewhere that I have
> overlooked that will give me an idea.
>
The equation goes;

Turns = 100SQR(uH/Al) where Al is the inductance in uH per 100 turns)

and

15 = 100SQR(150/Al)

and (0.15)^2 = 150/Al

and

150/0.0225 = Al = 6666.

You have ferrite not powdered iron.

For Ferrite, it's just the conversion

Turns = 1000SQR (mH/Al) where Al = mH/1000 turns

15 = 1000SQR(.15/Al)

and
0.15/0.00225 =66 which looks like, (for T50 core) material 61

W4ZCB

3285. Re: Toroid ID question...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 02:05:53 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <5MFhc.590$_L6.97876@attbi_s53>
Source record: 26522

> and
> 0.15/0.00225 =66 which looks like, (for T50 core) material 61
>
And the T37 core, at 2200, looks like 75 material, look out for it's bulk resistivity which is pretty low.

W4ZCB

3286. Re: Toroid ID question...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 02:08:41 UTC
From: The other John Smith <jocjo-john@yooha.com>
Message-ID: <JOFhc.6284$e4.743@newsread2.news.pas.earthlink.net>
Source record: 26523

"J Shrum" <shrumj@madisontelco.com> wrote in message
news:D-idnbluoKhTZhvd4p2dnA@shawneelink.net...
> Greetings,
>
> Recently I bought a grab bag of mixed toroids from www.allelectronics.com
.
> I bought some T-37's and T-50's. The problem is... they're not color
coded,
> and not identified by mix. So I have mystery toroids T-37-?? and
T-50-??...
>
> The question is, is there a way to come up w/ a rough estimate of the mix
> value? I wound some test coils and come up w/ these figures:
>
> T-50 15turns 30awg = ~150uH

Al = 150uH * square(1/15) = 667

> T-37 9turns 30awg = ~180uH

Al = 180uH * square(1/9) = 2200

See if these Al values look realistic. Even if not, this is the value of inductance of one turn for the core which some manufacturers used as Al many years ago when I worked with the devices. The inductance ratio varies as the square of the turns ratio.

John

3287. Re: Toroid ID question...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 02:11:42 UTC
From: dplatt@radagast.org
Message-ID: <108eaeu4233f0dd@corp.supernews.com>
Source record: 26524

>Greetings,
>
>Recently I bought a grab bag of mixed toroids from www.allelectronics.com .
>I bought some T-37's and T-50's. The problem is... they're not color coded,
>and not identified by mix. So I have mystery toroids T-37-?? and T-50-??...
>
>The question is, is there a way to come up w/ a rough estimate of the mix
>value? I wound some test coils and come up w/ these figures:
>
>T-50 15turns 30awg = ~150uH
>T-37 9turns 30awg = ~180uH
>
>Perhaps there is a chart or something similar somewhere that I have
>overlooked that will give me an idea.

Start at http://www.amidoncorp.com/aai_productselection.htm

Follow the "Iron Powder Cores" and "Ferrite cores" links.

The formulas, and the specific inductance index A(L) values for
various toroid formulas, are on those pages.

It's important to note that the A(L) values are stated in different
units for the two toroid types. For iron-powder cores, it's given as
"microhenries for 100 turns", while for ferrite cores it's
"millihenries for 1000 turns".

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

3288. Re: Oscillating 3rd overtone XTAL at fundamental?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 02:25:47 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <L0Ghc.37867$Yw5.14565@bignews4.bellsouth.net>
Source record: 26525

Steve Nosko wrote:
> "Michael Black" <et472@FreeNet.Carleton.CA> wrote in message
> news:c5vtfohpv1@freenet9.carleton.ca...
>
>>PaoloC (ollollo@hotpop.com) writes:
>>
>>>Hi.
>>>I have spent part of the weekend trying to resonate al old CB XTAL at
>>>its fundamental frequency.
>>>
>>>The XTAL is labelled 27.125 MHz, with a fundamental of about 9.041 MHz,
>>>which falls into 18m HAM band when multiplied by two. I assume 27MHz
>>>XTALs are 3rd overtone....
>>
>>Could the crystal be a receive crystal? CB crystals tended to show
>>the channel number or the frequency of the channel, and so if you simply
>>looked at the marked frequency, it would not tell you if it's for
>>transmit or receive. Though the ones I've seen did mark them with
>>"R" or "T". The point is that if it's a receive crystal, it wouldn't
>>be 1/3 of 27.125 but 27.125-IF and then divided by three.
>
>
> IFs were frequently 455KHz
>
But not always! Many cb sets used an if frequency of 1600khz plus or
minus a few 100khz. I have some old Lafayette if cans at 1650khz that
came out of an old cb set. Some also used double conversion with a
first if anywhere from 1.5mhz to 13mhz and a down conversion to 455khz.
So that receive rock could be anywhere in frequency.

3289. Re: Toroid ID question...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 02:27:58 UTC
From: ZappedOneTooManyTimes <ploink@plonk.plonk>
Message-ID: <p4ae80dl9rrp9d1anui6plf687dqj8jr2u@4ax.com>
Source record: 26529

On Wed, 21 Apr 2004 17:55:20 -0500, "J Shrum" <shrumj@madisontelco.com> wrote:

>Greetings,
>
>Recently I bought a grab bag of mixed toroids from www.allelectronics.com .
>I bought some T-37's and T-50's. The problem is... they're not color coded,
>and not identified by mix. So I have mystery toroids T-37-?? and T-50-??...

If they are not color coded then I guess they aren't Amidon toroids,
at least all the Amidon toroids I have seen were color coded, Amidon
does have all the specifications for all their toroids posted on their website
though:
http://www.amidoncorp.com/aai_productselection.htm

>The question is, is there a way to come up w/ a rough estimate of the mix
>value? I wound some test coils and come up w/ these figures:
>
>T-50 15turns 30awg = ~150uH
>T-37 9turns 30awg = ~180uH
>
>Perhaps there is a chart or something similar somewhere that I have
>overlooked that will give me an idea.

If you are running Windows, you can use this program to do
quick inductance calculations for many different toroids types:
http://www.qsl.net/dl5swb/minirk_e.htm , and to get specs on
different toroid types. A real time saver for calculating the inductance values
and it also shows the Inductance Index for each toroid and the frequency
bandwidth for that composition type, which might help you to get a better
idea of the composition type of your toroids. I think it will still be hard to determine
the composition types for certain, although the different composition types do have
different Inductance Index values for the same size toroid.

3290. Re: homebrew specialty paint finish

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 02:29:35 UTC
From: fmmck@aol.com
Message-ID: <20040421222935.26631.00000110@mb-m29.aol.com>
Source record: 26526

<< I got
myself a can of wrinkle paint through a local automotive supplier.

They want three heavy coats spaced ten minutes apart and then leave it alone
for 24h. >>

Uwe-

It sounds like you're on the right track now.

I played with wrinkle finish paint as a teenager, fixing up several old
pot-metal microphone cases. There are probably more options today than there
were then. It may have been Krylon that I used, but I don't recall.

One thing I remember, is that you can get non-wrinkle paints to wrinkle by
applying a second coat before the first has dried completely. That is
essentially what your instructions do, except your automotive paint should be
optimized for wrinkling.

Three coats may produce a gorgeous wrinkle finish, but I wonder if it might be
delicate to handle. You might run tests to see if two coats will wrinkle
sufficiently and not be as easily damaged by rough handling.

Another thing to try while you are experimenting, is to wrinkle-paint a sample
item and then bake it. You don't want to scorch the paint, just let it cook
for 30 minutes or an hour at 200 or 250 degrees F, and let it cool. See if
that toughens the wrinkled surface so it will withstand some abuse. (If
someone knows about baked-on paint, they may give you better advice on time and
temperature.)

73, Fred, K4DII

3291. Re: DDS building blocks....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 02:32:04 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <W2Ghc.41369$ux4.35676@bignews5.bellsouth.net>
Source record: 26527

xpyttl wrote:
> Paul
>
> I think the NJQRP DDS Daughtercard is a good model for something that would
> sell. Indeed, NJQRP has had to take a break on making them because the
> volunteers who actually kit them are totally fried from assembling literally
> thousands of the things.
>
> NJQRP and AmQRP have had remarkable success with their kits lately, not just
> the daughtercard. The PIC-EL had to be stopped after only a couple of
> months, again, because they neede a break more than anything else. Ditto
> with some others. I'm not sure what the magic is, but the daughtercard is a
> component in a number of other kits, as well as providing a simple module to
> solve a hard problem for folks homebrewing their own stuff. Of course, they
> have the unfair advantage of free labor, but on the flip side, they don't
> have the access to volume discounts that someone who was making a lot of
> other stuff might have.
>
> With high quality circuit boards, I think the TSSOPs are within reach of
> most amateurs. Most of us, however, can't make circuit boards with that
> sort of feature size. The appearance of even more frustrating packages like
> BGAs is worrisome, though.
>
> One of the challenges, of course, is that with these newer, more complex
> circuits, amateurs don't become comfortable with them until well into the
> product lifecycle. By the time the amateur community latches on to a part,
> it is already obsolete. This can lead to a pretty short life for some of
> these things. Some kits like the Small Wonder Labs DSW had to be pulled
> because the parts went out of availability almost before they appeared.
>
> A potential way around this might be to package functionally complete
> modules that folks could use without really having to get to know the
> innards. This eliminates things like the synthesizers that really need
> microcontrollers to operate, thus requiring builders to get familiar with
> them, but perhaps something like a mixer, IF strip, etc. might work.
>
> A lot of the builders these days are QRPers, and they are always looking for
> reducing size. I would think something like the FAR Circuits 9850 board,
> but entirely surface mount, might be a hit. You would need to provide some
> sort of ICSP port for this to play, however. And the 9850 has to be well
> along in its lifecycle. Personally, I would like to see some sort of
> quadrature DDS along with a Tayloe mixer pair.
>
The 9850 is still a listed part, but the latter ones in the 9850 series

with the built in clock multiplier (almost a pin for pin replacement)
are a better bet. The 9950 series are current state of the art and with
their 400mhz clocks and 14bit d/a's are cleaner too.
I'd like to see a kit or circuit board based on the 9954. BTW you can
get these as samples for just a little begging. Analog Devices likes to
send samples to hams.

3292. Re: Solid State Design For The Radio Amateur

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 02:37:37 UTC
From: "Michael St. Angelo" <mstangelo@comcast.net>
Message-ID: <tpCdnSEZ98hpshrdRVn-vA@comcast.com>
Source record: 26528

Dave,

I great book. Check hamfests. I got a copy for $1.

Mike N2MS

3293. Re: Oscillating 3rd overtone XTAL at fundamental?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 03:08:47 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c67cvv$1co$1@freenet9.carleton.ca>
Source record: 26530

Ken Scharf (wa2mzeNOTTHIS@bellsouth.net) writes:
> Steve Nosko wrote:
>> "Michael Black" <et472@FreeNet.Carleton.CA> wrote in message
>> news:c5vtfohpv1@freenet9.carleton.ca...
>>
>>>PaoloC (ollollo@hotpop.com) writes:
>>>
>>>>Hi.
>>>>I have spent part of the weekend trying to resonate al old CB XTAL at
>>>>its fundamental frequency.
>>>>
>>>>The XTAL is labelled 27.125 MHz, with a fundamental of about 9.041 MHz,
>>>>which falls into 18m HAM band when multiplied by two. I assume 27MHz
>>>>XTALs are 3rd overtone....
>>>
>>>Could the crystal be a receive crystal? CB crystals tended to show
>>>the channel number or the frequency of the channel, and so if you simply
>>>looked at the marked frequency, it would not tell you if it's for
>>>transmit or receive. Though the ones I've seen did mark them with
>>>"R" or "T". The point is that if it's a receive crystal, it wouldn't
>>>be 1/3 of 27.125 but 27.125-IF and then divided by three.
>>
>>
>> IFs were frequently 455KHz
>>
> But not always! Many cb sets used an if frequency of 1600khz plus or
> minus a few 100khz. I have some old Lafayette if cans at 1650khz that
> came out of an old cb set. Some also used double conversion with a
> first if anywhere from 1.5mhz to 13mhz and a down conversion to 455khz.
> So that receive rock could be anywhere in frequency.

Which is why I didn't specify the IF. I thought the original poster
might be listening on 1/3 the marked frequency, but if it's a receive
crystal it wouldn't be there. And while assuming an offset of 455KHz
might be a good 1st guess, one could listen there on a receiver and
still not find something. It still doesn't answer the question of whether
the crystal is oscillating if you don't hear anything at the expected
frequency, because it might be on some other frequency.

Years ago, when I would fiddle with oscillators, I'd put the SP-600 that
I had at the time on it's highest band, 30 to 54MHz. Then with the oscillator
on, I'd spin that knob. A few good spins got it across the dial. I'd find
a spot where there was a carrier, and then do some fine tuning. Then
I'd shift down in frequency, looking for a submultiple of that frequency,
until I found the actual operating frequency.

A digitally tuned receiver let's you find the expected frequency much faster, but you still need to tune around if the crystal isn't at the expected frequency.

Michael VE2BVW

3294. Re: Solid State Design For The Radio Amateur

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 03:20:08 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c67dl8$2cu$1@freenet9.carleton.ca>
Source record: 26531

"Michael St. Angelo" (mstangelo@comcast.net) writes:
> Dave,
>
> I great book. Check hamfests. I got a copy for $1.
>
> Mike N2MS
>
>
I haven't seen the new book, but I can't quite imagine that buying it
would negate the old one completely. I have a selection of handbooks
going back 40 years, and even the incremental changes between years when
I did buy them every year (much of the seventies) is enough for me
to keep them. I don't think much of the 1979 edition, but it has
the chapter on NBVM, "Narrow Band Voice Modulation", that made such
a splash that year and then completely faded out, with no later mention
of it.

I love Solid State Design, there's a very good mix of construction to
theory, and obviously it did cover territory that the Handbook didn't
at the time. My copy, bought when it first came out, has stood up
better than some books I have from the same time period, but I'd be
disappointed if it fell apart and I couldn't get a replacement.

Old books often do have value, even if later books are more up to
date. The early ARRL SSB manuals, and the CQ SSB Handbook for tht
matter, tend to be more in depth about the basics than material written
years later, because by then "everyone knows all the details".

And sometimes even the historical perspective is of value. If a low
frequency crystal and a string of multipliers was the norm for years,
as seen in the ARRL VHF Manual (which hasn't been published in at least
thirty years), then sometimes it still can be the proper choice. But
if people don't see those "historical documents" they may be puzzling over
how to do something except with the latest whizband schemes.

Besides, the old books are what I grew up with. Some of them were new
at the time, some of them were bought used and were already old at
the time. But I read them, and reread them, and if nothing else,
they are a remder of that past. When I got interested in them, I
got rid of my comic books and my Tom Corbette and Tom Swift books,
and years later I regretted not being able to reread them. I did
not make the mistake with radio and electronic books.

Michael VE2BVW

3295. Re: Toroid ID question...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 04:36:45 UTC
From: k7itm@aol.com
Message-ID: <3200347.0404212036.407852d2@posting.google.com>
Source record: 26532

There are lots of web resources. Here's one:

http://www.amidoncorp.com/ace_iptcforrf.htm

And another: http://www.bytemark.com/

You can search for Amidon or Bytemark or Fair-Rite or Ferronics, and
also just search for 'powdered iron toroid' or 'ferrite toroid' and
find lots of things. Those links will take you more-or-less directly
to Al values for a wide range of cores. Just remember that inductance
goes as the square of the number of turns, so if Al is uH/100 turns,
the inductance will be Al*(your_turns/100)^2.

Cheers,
Tom

"J Shrum" <shrumj@madisontelco.com> wrote in message
news:<D-idnbluoKhTZhvd4p2dnA@shawneelink.net>...
> Greetings,
>
> Recently I bought a grab bag of mixed toroids from www.allelectronics.com .
> I bought some T-37's and T-50's. The problem is... they're not color coded,
> and not identified by mix. So I have mystery toroids T-37-?? and T-50-??...
>
> The question is, is there a way to come up w/ a rough estimate of the mix
> value? I wound some test coils and come up w/ these figures:
>
> T-50 15turns 30awg = ~150uH
> T-37 9turns 30awg = ~180uH
>
> Perhaps there is a chart or something similar somewhere that I have
> overlooked that will give me an idea.
>
> Thanks for all assistance.
>
> Jim Shrum - KC9FFX

3296. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 04:44:32 UTC
From: Dave Cole <davidwcole@earthlink.net>
Message-ID: <BCACB7DE.63C9%davidwcole@earthlink.net>
Source record: 26533
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

in article c5mjlg$6nh02$1@hades.csu.net, Watson A.Name "Watt Sun - the Dark Remover" at NOSPAM@dslextreme.com wrote on 4/15/04 13:19:

> Charles W. Johnson Jr. wrote:
>
> [snip]
>
>>>> While I'm all for using more renewable resources, and especially
>>>> ones that are environmentally friendly, it doesn't make sense to
>>>> cause yourself financial pain doing so. It makes sense to buy the
>>>> must fuel efficient vehicle that fits your needs but not to overspend
>>>> simply because it's a little better on the gas mileage.
>
>>> It's not a "little" better, it more than double - 50+ MPG compared to 25!
>
> [snip]
>
>> Surprisingly enough some SUV owners actually need the SUV at the time of
>> purchase, I personally drove through snow 70cm deep on a regular basis prior
>> to my recent job change. Just because the people in southern California
>> don't need it doesn't mean no one does.
>
>> Charles
>
> Surprisingly enough, many of those people who bought a big Ford
> Expedition or GM Yukon could have got by with a lot smaller, and hence a
> lot more economical SUV. ALso, there are vans, too, with a much better
> gas mileage. Surprisingly enough, it's not about whether or not it's a
> SUV or a truck or whatever, it's whether or not it's a gas guzzler.

And this becomes your decision or business exactly how?
DC

3297. Re: Solid State Design For The Radio Amateur

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 05:08:22 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <arlhc.9119$_o3.306663@bgtnsc05-news.ops.worldnet.att.net>
Source record: 26534

"Michael Black" <et472@FreeNet.Carleton.CA> wrote in message
news:c67dl8$2cu$1@freenet9.carleton.ca...

> I haven't seen the new book, but I can't quite imagine that buying it
> would negate the old one completely. I have a selection of handbooks
> going back 40 years, and even the incremental changes between years when
> I did buy them every year (much of the seventies) is enough for me
> to keep them. I don't think much of the 1979 edition, but it has
> the chapter on NBVM, "Narrow Band Voice Modulation", that made such
> a splash that year and then completely faded out, with no later mention
> of it.

There's some history behind NBVM. I guess it must have been in 1978, but whenever, then-ARRL General Manager Dick Baldwin, W1RU, wrote an editorial for QST with the theme of "We need a technical breakthrough," like the ones hams were famous for in the past. Weeks later, NBVM popped up out of the noise, and Baldwin ordered an article about it published in QST, with a cover photo to match. AFAIK, no one else at Hq had ever heard of NBVM or the inventors, and I wouldn't say the idea caught fire among the staff. But there it was. The hardware was commercially produced by a publicly-held company, but I never saw evidence that anyone officially connected with ARRL owned any. If they did, it was their loss.

At that time, ARRL, as Headquarters society of the IARU, was preparing for a World Administrative Radio Conference (WARC). This was one of the big WARCs and there was some concern that we would lose HF spectrum. The official story, of course, is that we gained the WARC bands, but in terms of net spectrum it was a loss, due to incursions on the microwave bands. My recollection is that we took a major whack on 13 cm, and also on several other uw bands.

So that's the backscatter on NBVM.

73,

"PM"

3298. Re: XTAL oscillator with a XOR gate

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 07:54:36 UTC
From: Hans Summers <hans.summers@tudor.com>
Message-ID: <c67tnt$8u3rd$1@ID-61331.news.uni-berlin.de>
Source record: 26535

>
> I have a working 74HC14 oscillator:
> "One gate of a 74HC14. 470ohm resistor from gate output to the parallel
> of 1Mohm//XTAL. 10pF and 33pF (from the junkbox) capacitors to ground on
> each side of the XTAL."

I have successfully made a circuit using a single gate of the 74HC86 similar to you describe. I used 1K from the gate output to the 10MHz crystal. 12p capacitor on either side of the crystal to ground. It works very nicely! See the circuit diagram here:
http://www.hanssummers.com/radio/qrss/qrv/mod2/index.htm .

73 de Hans G0UPL
http://www.HansSummers.com

3299. Re: CW IDER

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 07:59:44 UTC
From: Hans Summers <hans.summers@tudor.com>
Message-ID: <c67u1h$8v0a7$1@ID-61331.news.uni-berlin.de>
Source record: 26536

"zerobeat" <sw6079@aol.com> wrote in message
news:25e1f0d1.0404181918.57bc81d7@posting.google.com...
> Anyone know of an easy to build ider? I know a basic stamp can be
> used, but I don't have the programming abilities. The QST ones I've
> seen all use outdated components and are complex. I'm building a
> small broacast band beacon (low end, around 530 khz) Thanks, 73,
> Mike.

You could build something with an EEPROM and some counters. See my 30m beacon project http://www.hanssummers.com/radio/qrss/index.htm . There's no microcontroller in sight. But it's replaced by, err..., quite a number of TTL etc. If you didn't want all the features and you didn't want to be able to reprogram it frequently, you could come up with considerable simplifications.

Hans
http://www.HansSummers.com

3300. Re: HP680 Chart Recorder

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 12:30:14 UTC
From: Kevin Carney <carneyke@us.ibm.combo>
Message-ID: <c68ddh$75e$1@news.btv.ibm.com>
Source record: 26537
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

I had lots of ink on me from those old recorders too !!!

--
change .combo to .com for correct email

****
"We ought always to know precisely why a given job
is done in a particular way, and why it is done at
all, and why it can't be done more efficiently,
if it must be done at all."-- T.J.Watson

****

<munged@address.com> wrote in message
news:1082571097.619315@cswreg.cos.agilent.com...
> In rec.radio.amateur.homebrew Dick <dick@langwang.demon.co.uk> wrote:
> [previous paragraph deleted]
>
> > Particularly interested in knowing where HP mounted the ink
> > reservoir, was it on the moving carriage that carried the pen or is it
> > on the fixed body of the recorder ? Maybe someone has had experience of
> > using this equipment and can describe the arrangement they saw when
> > refilling the ink reservoir. Or did HP use disposable ink cartridges ?
>
> There were several variants of this chart recorder, 680,681,682,683. The
> one I remember used Esterbrook pen cartridges, HP part numbers 1530-0095
> (blue), 1530-0703 (red), 1530-0704 (green), 1530-0984 (purple), and
> 1530-0905 (black). The cartridge was mounted on the inside back wall of
> cabinet, and attached to the pen stylus with a capillary tube about 8"
long.
> You might still be able to obtain the cartridges from an office supply
store.
> Manuals are available at http://www.manualsplus.com
>
> I particularly recall one incident where a technician was trying to clear
> a clogged capillary tube. He disconnected the tube at the stylus end and
> fitted a 10CC hypodermic syringe to the loose end. He then shoved the
> plunger with great gusto and the next sound I heard was a loud "POP!!!".
> The cartridge exploded, covering his face and shirt with red ink dots.
>
> Don K6LTS
> email address at the QRZ website.

3301. ladder filters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 13:55:25 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <TF_hc.74135$oj6.38244@bignews6.bellsouth.net>
Source record: 26550

I have about a half dozen 3.333mhz and 5.0688 crystals. Each group is with in 100hz of the same frequency when put into a simple oscillator. I also have a few 11.0592 crystals that are almost as close (probably should get a few more of these). The 5.0688 and 11.0592 are in HC49/U cans, the 3.333 are in a somewhat larger sized can.

Wonder if any of these groups would make a good ladder filter for a receiver IF strip? I would guess the 3.333 ones would be better for CW, the 11.0592 for ssb, and the 5.0688 might be a compromise either way?

3302. Re: Toroid ID question...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 15:26:03 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c68o6b$6b7$1@hercules.btinternet.com>
Source record: 26538

Use program TOROID from website below.

Enter into the program the data you already have, core dimensions and inductance, and the remaining information such as core permeability, the number of turns for other inductances, will be computed.

Program avoids guessing who is the manufacturer. Who needs to know if you have already grab-bagged the items.

From inductance/number-of-turns data you can guess the type of material, ferrite or iron powder, if you are interested.

Download program TOROID in a few seconds and run immediately.

.....
Regards from Reg, G4FGQ
For Free Radio Design Software go to
http://www.btinternet.com/~g4fgq.regp
.....

3303. Re: Solid State Design For The Radio Amateur

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 16:11:27 UTC
From: Highland Ham <xygm0csz.wvkn6wh@ntlworld.com>
Message-ID: <J8Shc.22116$4N3.2112@newsfe1-win>
Source record: 26539

> My interest was heightened but Experimental Methods cost $50 on the ARRL
web
> site! More than the handbook.
> A copy of Solid State design went on ebay for $10.50 recently
==========
There is no comparison between the 2.
Having both books myself , 'Experimental Methods' is a much more up to date
and elaborate book.
I can recommend it to any RF engineering minded ham .

Frank GM0CSZ / KN6WH

3304. FA: RF sw, spkrs, tubes,..more stuff

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 16:36:57 UTC
From: Heytubeguy <heytubeguy@worldnet.att.net>
Message-ID: <JwShc.21663$um3.453848@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26540

see at

http://cgi6.ebay.com/ws/eBayISAPI.dll?ViewSellersOtherItems&userid=heytubeguy&completed=0&sort=3&since=-1&include=0&page=1&rows=25

Tnx heytubeguy

3305. feedthrough capacitors

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 17:16:15 UTC
From: "news@skynet .be" <news@skynet.be>
Message-ID: <4087fded$0$10817$a0ced6e1@news.skynet.be>
Source record: 26541

Looking for 10 feedthrough 1nF 500V DC , at a friedly prize .
Thanks
Emile ON4JA at on4ja@skynet.be

3306. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 18:44:24 UTC
From: "Charles W. Johnson Jr." <qrus19@oneimage.com>
Message-ID: <coUhc.5062$eZ5.2643@newsread1.news.pas.earthlink.net>
Source record: 26542
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Dave Cole" <davidwcole@earthlink.net> wrote in message
news:BCACB7DE.63C9%davidwcole@earthlink.net...
> in article c5mjlg$6nh02$1@hades.csu.net, Watson A.Name "Watt Sun - the
Dark
> Remover" at NOSPAM@dslextreme.com wrote on 4/15/04 13:19:
>
> > Charles W. Johnson Jr. wrote:
> >
> > [snip]
> >
> >>>> While I'm all for using more renewable resources, and especially
> >>>> ones that are environmentally friendly, it doesn't make sense to
> >>>> cause yourself financial pain doing so. It makes sense to buy the
> >>>> must fuel efficient vehicle that fits your needs but not to overspend
> >>>> simply because it's a little better on the gas mileage.
> >
> >>> It's not a "little" better, it more than double - 50+ MPG compared to
25!
> >
> > [snip]
> >
> >> Surprisingly enough some SUV owners actually need the SUV at the time
of
> >> purchase, I personally drove through snow 70cm deep on a regular basis
prior
> >> to my recent job change. Just because the people in southern California
> >> don't need it doesn't mean no one does.
> >
> >> Charles
> >
> > Surprisingly enough, many of those people who bought a big Ford
> > Expedition or GM Yukon could have got by with a lot smaller, and hence a
> > lot more economical SUV. ALso, there are vans, too, with a much better
> > gas mileage. Surprisingly enough, it's not about whether or not it's a
> > SUV or a truck or whatever, it's whether or not it's a gas guzzler.
>
>
> And this becomes your decision or business exactly how?
> DC
>
I did not write the above please be careful of your snips.

Charles

3307. Re: Solar cell modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 21:13:32 UTC
From: Tom Del Rosso <tdnews01@att.net.invalid>
Message-ID: <0AWhc.22885$um3.474516@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26543
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

"Jim Thompson" <thegreatone@example.com> wrote in message
news:cme3809820k7s4sr1ipg3is6al0sg9nr9i@4ax.com...
>
> Sourcing INTO the power grid is also supported in Arizona. Apparently
> there are a few customers here who produce more than their own
> consumption and get PAID every month. (Not difficult at all if you
> own at least an acre of property.)

How do they regulate the current they draw? I mean since the capacity
will vary.

--
-Reply in group, but if emailing add 2 more zeros-
-and remove the obvious-

3308. March your way into the weekend!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 21:27:21 UTC
From: Morely Dotes <MorelyDotes@spamblocked.com>
Message-ID: <184bc686.6289e046@host-69-48-73-244.roc.choiceone.net>
Source record: 26546
Cross-posted to: alt.nl.voyeurisme,hannover.funk.amateurfunk,clari.world.europe.british_isles.uk.n-ireland,rec.radio.amateur.homebrew,uk.culture.museums,alt.fr.guerre.europe-italie

March your way into the weekend!

Join Nader supporters in DC, April 24-25,
as they rally for justice and equal rights

Washington, DC:

Saturday, April 24th, IMF/World Bank Protest - meet at 11am, 15th & H St, NW.

Sunday, April 25th, March for Women's Lives - meet at 9:30am, Smithsonian Metro Stop.

If you arrive late, ask a volunteer to point you towards the Ralph Nader group.

See you there!

Nader: Oil the Source of Two of Earth's Major Problems:
Wars for Oil and Climate Change

Protect the Environment and the People of Our Planet by Ending Our Addiction to Oil

Washington, DC: On Earth Day 2004, Independent presidential candidate
Ralph Nader highlighted as two priorities: ending the Iraqi occupation
and facing up to the immediate crisis of global climate change. "Future
geopolitical crises involving oil resources and environmental problems
will be diminished by finding alternatives to fossil fuels," said Nader.

Nader linked the two issues on Earth Day because he sees them as
symptomatic of the corporate oil-based, planet destructive behavior of
the Bush Administration. Nader has called for the United States to
withdraw from Iraq - including military, private military contractors,
oil industry and other corporations. Nader noted: "The war in Iraq is
unleashing widening cycles of violence. The potential for escalation of
violence increases every day the US military remains in Iraq. The way to
reverse the spiral of violence is for the United States to go back home.
The US presence serves as a magnet for the insurrection, kidnapping,
terrorism and destruction." Nader released a three-step strategy for
withdrawal earlier this week. See www.votenader.org for details.

--

For further information, contact:

Kevin Zeese
1-202-265-4000

Matt Ahearn
ahearn@votenader.org

1-201-314-9747

--
serve just as well in this classic southern delicacy.
The sandwich originated in New Orleans, where an abundance of abortion clinics
thrive and hot French bread is always available.

2 cleaned fetuses, head on
2 eggs
1 tablespoon yellow mustard
1 cup seasoned flour
oil enough for deep frying
1 loaf French bread
Lettuce
tomatoes
mayonnaise, etc.

Marinate the fetuses in the egg-mustard mixture.
Dredge thoroughly in flour.
Fry at 375° until crispy golden brown.
Remove and place on paper towels.

Holiday Youngster

One can easily adapt this recipe to ham, though as presented,
it violates no religious taboos against swine.

1 large toddler or small child, cleaned and de-headed
Kentucky Bourbon Sauce (see index)
1 large can pineapple slices
Whole cloves

Place him (or ham) or her in a large glass baking dish, buttocks up.
Tie with butcher string around and across so that he looks like
he?s crawling.
Glaze, then arrange pineapples and secure with cloves.
Bake uncovered in 350° oven till thermometer reaches 160°.

Cajun Babies

Just like crabs or crawfish, babies are boiled alive!
You don?t need silverware, the hot spicy meat comes off in your hands.

6 live babies
1 lb. smoked sausage
4 lemons
whole garlic
2 lb. new potatoes
4 ears corn
1 box salt
crab boil

Bring 3 gallons of water to a boil.
Add sausage, salt,

3309. Re: Oscillating 3rd overtone XTAL at fundamental?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 22:10:33 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <fZ2n+KAZLEiAFwJx@ddwyer.demon.co.uk>
Source record: 26544

In article <c5vs4g$6eoag$1@ID-199778.news.uni-berlin.de>, PaoloC
<ollollo@hotpop.com> writes
>Hi.
>I have spent part of the weekend trying to resonate al old CB XTAL at
>its fundamental frequency.
>
>The XTAL is labelled 27.125 MHz, with a fundamental of about 9.041 MHz,
>which falls into 18m HAM band when multiplied by two. I assume 27MHz
>XTALs are 3rd overtone.
>
>Since the circuitry is/will be digital, the oscillator is one gate of a
>74HC14. 470ohm resistor from gate output to the parallel of 1Mohm//XTAL.
>10pF and 33pF (from the junkbox) capacitors to ground on each side of
>the XTAL.
>
>No oscillation (I have no oscilloscope, I use my HF receiver to
>troubleshoot oscillators at known frequencies).
>
>If I replace the XTAL with a 10.000 MHz rock the oscillation is loud and
>clear.
>
>I have never built something with an overtone XTAL. I know that I need
>an output resonating circuit if I want to extract the 3rd harmonic. Do I
>need the same if I want the fundamental?
>
>Are overtone XTALs "harder" to resonate?
>
>Are those old CB XTALs 3rd overtone?
>
>I assume my 27MHz XTAL works. :-) Thanks in advance for all suggestions,
>Paolo IK1ZYW
Could be a 27 MHz fundamental or 10.7 above or below 27MHz.
--
ddwyer

3310. Radio control transmitter - interference problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-22 23:02:46 UTC
From: pvenkman@hotmail.com
Message-ID: <791aa995.0404221502.39000ca4@posting.google.com>
Source record: 26545

This is somewhat off topic; I apologize, but it seems like the people that hang out here might actually be able to help me with my problem.

I fly radio control gliders. I recently purchased a new transmitter (a Royal Evo 9 with synth module, for those that might care). I'm in the US so this broadcasts on 72MHz.

I have problems with this transmitter at one particular flying site that's right next to a military base. The xmitter is fine at other locations, and all the gliders respond just fine to my 'old' xmitter at this site. I've done a bunch of things and it really is just the new xmitter at this particular flying site.

It seems like there must be an interference problem with some signal being broadcast from the military base. I've tried to shield the transmitter without much improvement. That makes me think the offending signal may be coming in through the antenna.

Being relatively naive electronically, it seems like I could simply insert a filter between the antenna and the rest of the transmitter that passes through the 72 MHz signal but blocks everything else. However, I'm smart enough to know I'm not that smart. That's why I'm here.

Is it as simple as finding a filter that passes 72 MHz along and splicing it in to the wire going to the antenna? Is that likely to cause other problems (transmitting on the wrong frequency, overheating the RF module due to impedance mismatch, sudden death)? Assuming I can't find a filter that passes along precisely the frequency I want, is it OK to put filters in series (like a high-pass plus a low-pass)? And finally, am I just totally missing the boat here with this idea? I'm open to other suggestions.

3311. Re: Radio control transmitter - interference problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-23 00:39:39 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <108gpe9afm1e59a@corp.supernews.com>
Source record: 26548

P. Venkman wrote:

> This is somewhat off topic; I apologize, but it seems like the people
> that hang out here might actually be able to help me with my problem.
>
> I fly radio control gliders. I recently purchased a new transmitter
> (a Royal Evo 9 with synth module, for those that might care). I'm in
> the US so this broadcasts on 72MHz.
>
> I have problems with this transmitter at one particular flying site
> that's right next to a military base. The xmitter is fine at other
> locations, and all the gliders respond just fine to my 'old' xmitter
> at this site. I've done a bunch of things and it really is just the
> new xmitter at this particular flying site.
>
> It seems like there must be an interference problem with some signal
> being broadcast from the military base. I've tried to shield the
> transmitter without much improvement. That makes me think the
> offending signal may be coming in through the antenna.
>
> Being relatively naive electronically, it seems like I could simply
> insert a filter between the antenna and the rest of the transmitter
> that passes through the 72 MHz signal but blocks everything else.
> However, I'm smart enough to know I'm not that smart. That's why I'm
> here.
>
> Is it as simple as finding a filter that passes 72 MHz along and
> splicing it in to the wire going to the antenna? Is that likely to
> cause other problems (transmitting on the wrong frequency, overheating
> the RF module due to impedance mismatch, sudden death)? Assuming I
> can't find a filter that passes along precisely the frequency I want,
> is it OK to put filters in series (like a high-pass plus a low-pass)?
> And finally, am I just totally missing the boat here with this idea?
> I'm open to other suggestions.

First, you can really mess things up by playing the filter game, so
don't do it unless you need to.

Second, it may be that the transmitter has a weaker signal, or that it
is a bit off frequency. Since your average military base has about a
gazillion different transmitters it's likely that there is some spur
being generated at 72MHz, or a valid signal at your RX's image
frequency. If your transmitter is a bit weak than such a signal from
the base would have an easy time getting into your RX.

If you can get the receiver out of the plane (or if you can get to the antenna) do a range check with the RX antenna rolled up but with the TX antenna extended. I'd do this at some _other_ flying site. Check the range with the suspect TX and with a known good one. If it's significantly lower with the suspect TX then you can do all the filtering in the world and it won't help you -- but having the new TX fixed (or selling it and getting another brand) may help a lot.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

3312. Re: IMPORTANT ANTI VIRUS INFORMATION

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-23 01:16:36 UTC
From: the.night@hunter.com
Message-ID: <1erg80dmqbr8i726nes5c75k6cjqhejisc@4ax.com>
Source record: 26549
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.packet,rec.radio.amateur.policy,rec.radio.amateur.space,rec.radio.amateur.swap

Don't forget to report this virus/spammer to abuse@shaw.ca
On Thu, 22 Apr 2004 22:52:30 GMT, SysAdmin@ed.shawcable.net wrote:

>Protect yourself from new viruses that you may not know you have. We have designed a set of anti virus tools to keep your system secure. Visit here for more information on these free and easy to use tools
>
>http://www.gigdot.net/

3313. Re: ladder filters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-23 02:25:00 UTC
From: Jim Pennell <Nospam@killspam.com>
Message-ID: <08%hc.8076$e4.4533@newsread2.news.pas.earthlink.net>
Source record: 26551

My general impression is that ladder filter terminating impedances tend to be based on the general frequency range of the crystals.

I built some 5.000 MHz ladder filters that work best with 270 ohms termination, while a filter I read about in an article which was at 12 MHz had 50 ohm impedances.

Of course, one can work with either termination....

In my case, I had calculated that 5.000 MHz IF and 1.2 MHz VCO would result in a 7 MHz transciever with VERY few mixing spurs anywhere near a frequency that would bother my design.

So, in general, I think the frequency of a ladder filter can be low or high, and used for either SSB or CW. But, mixing spurs and so on should be considered when choosing an IF.

Jim Pennell
N6BIU

3314. Re: IMPORTANT ANTI VIRUS INFORMATION

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-23 03:20:21 UTC
From: Bunnydawg <r.heenan@sympatico.ca>
Message-ID: <QjZhc.79227$Gp4.1807462@news20.bellglobal.com>
Source record: 26547
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.packet

And of course if you are foolish enough to download something from them
you'll have an even worse virus or they will have the ability to hack your
computer with the program they are offering.
Robert
VE3 something or other
<SysAdmin@vf.shawcable.net> wrote in message
news:T3Zhc.214306$Pk3.129884@pd7tw1no...
> Protect yourself from new viruses that you may not know you have. We have
designed a set of anti virus tools to keep your system secure. Visit here
for more information on these free and easy to use tools
>
> http://www.gigdot.net/
>

3315. Re: ladder filters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-23 03:29:53 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <R40ic.12350$_o3.405571@bgtnsc05-news.ops.worldnet.att.net>
Source record: 26552

"Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:TF_hc.74135$oj6.38244@bignews6.bellsouth.net...
> I have about a half dozen 3.333mhz and 5.0688 crystals.
> Each group is with in 100hz of the same frequency when
> put into a simple oscillator. I also have a few 11.0592
> crystals that are almost as close (probably should get
> a few more of these). The 5.0688 and 11.0592 are in
> HC49/U cans, the 3.333 are in a somewhat larger sized
> can.
>
> Wonder if any of these groups would make a good ladder
> filter for a receiver IF strip? I would guess the 3.333
> ones would be better for CW, the 11.0592 for ssb, and
> the 5.0688 might be a compromise either way?

There's a good article about building ladder filters in QRP Power. Designing and Building High-Performance Crystal Ladder Filters by Mahkinson, N6NWP. Was originally in QEX for Jan 1995. QRP Power also reprints an article by W7ZOI, Refinements in Crystal Ladder Filter Design, from June 1995 QEX.

Mahkinson says "Unfortunately, the required termination resistances of filters built with [color-burst] crystals may exceed 10k ohms, which necessitates an impedance transformation with a very high ratio (for a 50-ohm system.). As a result, very high voltage levels may be developed at the filter input, which may cause an overload condition. In addition, the required values of the coupling capacitors may be under 5 pF, making construction difficult due to stray capacitances. For these reasons, crystal filters with center frequencies under 6 MHz are not recommended."

"The usef ful upper frequency limit is determined by the influence of stray capacitances at frequencies above 10 MHz and by the limitations imposed on the VFO circuit for multiband HF operation. Consequently, the recommended frequency range for an HF SSB crystal filter is between 6 and 12 MHz.: The remaining criteria for the crystal frequency selection are the crystal Q and the price."

73,

"PM"

3316. Re: ladder filters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-23 08:49:03 UTC
From: roland.cordesses@laposte.net
Message-ID: <9d420aae.0404230049.4d658f7@posting.google.com>
Source record: 26553

Hi Ken,

I have built a lot of crystal ladder filters over the years using methods and tools provided by W. Hayward W7ZOI, J. Makhinson N6NWP and others. Some filters are simple while others can be considered as high performance ones.

Among the several papers dealing with the subject, I strongly suggest you read the following :

- A Unified Approach to the Design of Crystal Ladder Filters, W. Hayward, QST May 1982, pp 21-27

- Designing an Building High-performance Crystal Ladder Filters, J. Makhinson, QEX January 1995, pp 24-29

- Designing and Building Simple Crystal Filters, W. Hayward, QST July 1987, pp 24-28

You can also have a look at my Web site : roland.cordesses.free.fr where some designs are presented with their measured characteristics.

73's

Roland F2DC

==========

Ken Scharf <wa2mzeNOTTHIS@bellsouth.net> wrote in message news:<TF_hc.74135$oj6.38244@bignews6.bellsouth.net>...
> I have about a half dozen 3.333mhz and 5.0688 crystals.
> Each group is with in 100hz of the same frequency when
> put into a simple oscillator. I also have a few 11.0592
> crystals that are almost as close (probably should get
> a few more of these). The 5.0688 and 11.0592 are in
> HC49/U cans, the 3.333 are in a somewhat larger sized
> can.
>
> Wonder if any of these groups would make a good ladder
> filter for a receiver IF strip? I would guess the 3.333
> ones would be better for CW, the 11.0592 for ssb, and
> the 5.0688 might be a compromise either way?

3317. Re: DDS building blocks....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-23 10:44:55 UTC
From: Richard Hosking <richardh@iinet.net.au>
Message-ID: <4088f4a9$0$16576$5a62ac22@freenews.iinet.net.au>
Source record: 26554

Yeah sure
I had to go my local supplier when I asked for samples

Richard

> I'd like to see a kit or circuit board based on the 9954. BTW you can
> get these as samples for just a little begging. Analog Devices likes to
> send samples to hams.

3318. psk31 cable and ic718

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-23 11:22:15 UTC
From: nightowls627@aol.comnojunk
Message-ID: <20040423072215.06300.00000172@mb-m20.aol.com>
Source record: 26555

Hello to all

Just downloaded and am playing with psk31 software. I can receive ok as I have a cable for that(standard plug to plug). I would like to transmit but do not have the cable. Looking to homebrew something simple until I can afford the Rascal GLX. I mean something real simple like just some wires plugged to the appropriate pins on my mic jack. I have an IC 718. I just don't know which pins to go to. I'm thinking I want to trigger the vox . . . That just sounds like the easiest way. I do have some homebrew experience as I built a 20meter rockmite into an altoids can. . . and it works. Minimal, but I am fairly new to this. Licensed under a year.

Thanks for any suggestions
73
Greg
ki4bbl@arrl.net

3319. Re: homebrew specialty paint finish

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-23 13:18:24 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BCAE8FDB.52C3%outhouse@midcoast.com>
Source record: 26556

Fred, my reaction when I first read the instructions was, hell, I get a wrinkly finish every time I paint somehing, I just never dared calling it a wrinkle finish, I called it another desaster...

I checked the hardness of the coating after it had dried hanging over my wood stove, which isn't running full tilt anymore, and there was still some softness so I threw it in the oven, brought it to about 200F and then shut it off, leavig the painted item inside.

That was yesterday and when I tested that piece right now it had markedly improved the hardness of the paint, actually I would say it is an excellent coating.

So success I guess, and I am already looking around the cabin to see what I could wrinkle up next.

73 from Maine

Uwe

> Uwe-
>
> It sounds like you're on the right track now.
>
> I played with wrinkle finish paint as a teenager, fixing up several old
> pot-metal microphone cases. There are probably more options today than there
> were then. It may have been Krylon that I used, but I don't recall.
>
> One thing I remember, is that you can get non-wrinkle paints to wrinkle by
> applying a second coat before the first has dried completely. That is
> essentially what your instructions do, except your automotive paint should be
> optimized for wrinkling.
>
> Three coats may produce a gorgeous wrinkle finish, but I wonder if it might be
> delicate to handle. You might run tests to see if two coats will wrinkle
> sufficiently and not be as easily damaged by rough handling.
>
> Another thing to try while you are experimenting, is to wrinkle-paint a sample
> item and then bake it. You don't want to scorch the paint, just let it cook
> for 30 minutes or an hour at 200 or 250 degrees F, and let it cool. See if
> that toughens the wrinkled surface so it will withstand some abuse. (If
> someone knows about baked-on paint, they may give you better advice on time
> and
> temperature.)
>
> 73, Fred, K4DII

>

3320. Re: Radio control transmitter - interference problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-23 15:45:11 UTC
From: pvenkman@hotmail.com
Message-ID: <791aa995.0404230745.5236bfc8@posting.google.com>
Source record: 26557

Tim Wescott <tim@wescottnospamdesign.com> wrote in message
news:<108gpe9afm1e59a@corp.supernews.com>...
> P. Venkman wrote:
>
<SNIP>
>
> > Is it as simple as finding a filter that passes 72 MHz along and
> > splicing it in to the wire going to the antenna? Is that likely to
> > cause other problems (transmitting on the wrong frequency, overheating
> > the RF module due to impedance mismatch, sudden death)? Assuming I
> > can't find a filter that passes along precisely the frequency I want,
> > is it OK to put filters in series (like a high-pass plus a low-pass)?
> > And finally, am I just totally missing the boat here with this idea?
> > I'm open to other suggestions.
>
> First, you can really mess things up by playing the filter game, so
> don't do it unless you need to.
>
> Second, it may be that the transmitter has a weaker signal, or that it
> is a bit off frequency. Since your average military base has about a
> gazillion different transmitters it's likely that there is some spur
> being generated at 72MHz, or a valid signal at your RX's image
> frequency. If your transmitter is a bit weak than such a signal from
> the base would have an easy time getting into your RX.
>
> If you can get the receiver out of the plane (or if you can get to the
> antenna) do a range check with the RX antenna rolled up but with the TX
> antenna extended. I'd do this at some _other_ flying site. Check the
> range with the suspect TX and with a known good one. If it's
> significantly lower with the suspect TX then you can do all the
> filtering in the world and it won't help you -- but having the new TX
> fixed (or selling it and getting another brand) may help a lot.

When I first had the problem I sent the transmitter back for service -
they didn't find anything wrong, but tuned it anyway and sent it back.
The problem still existed, so I got them to replace the transmitter.
Still the same problem.

At other flying sites the new transmitter actually range checks better
than the old transmitter when checked against multiple different
receivers. For these two reasons I don't think it's that this TX has
a weaker or off-frequency signal.

Lots of other people fly at the same location with a variety of
equipement with no trouble. I've flown a variety of different gliders

there with my old transmitter and never had a problem. I really don't think there's a conflicting 72 MHz signal.

It really is just this transmitter at this particular site - other transmitters at the same site are fine, and this transmitter at other sites is just fine.

Is there any way to make this work?

3321. Re: DDS building blocks....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-23 16:08:27 UTC
From: Highland Ham <xygm0csz.wvkn6wh@ntlworld.com>
Message-ID: <8rbic.539$yd1.296@newsfe1-win>
Source record: 26558

> Yeah sure
> I had to go my local supplier when I asked for samples
==========
AD sends free samples when you order through the web ,destined for a US address
I did that through a relative in LA who send the samples privately to me here in Scotland.

However a ham working for AD -UK commented on this NG that AD-UK would be sympathetic to requests for free samples ,but I haven't tried that route as yet.

Frank GM0CSZ / KN6WH

3322. Re: psk31 cable and ic718

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-23 16:23:42 UTC
From: Highland Ham <xygm0csz.wvkn6wh@ntlworld.com>
Message-ID: <9rbic.540$yd1.383@newsfe1-win>
Source record: 26559

> Just downloaded and am playing with psk31 software. I can receive ok as I
have
> a cable for that(standard plug to plug). I would like to transmit but do
not
> have the cable. Looking to homebrew something simple until I can afford
the
> Rascal GLX. I mean something real simple like just some wires plugged to
the
> appropriate pins on my mic jack. I have an IC 718. I just don't know
which
> pins to go to. I'm thinking I want to trigger the vox . . . That just
sounds
> like the easiest way. I do have some homebrew experience as I built a
20meter
> rockmite into an altoids can. . . and it works. Minimal, but I am fairly
new
> to this. Licensed under a year.

Although a galvanic hook-up is considered OK by many , galvanically
separated connections between soundcard and transceiver for RX , TX aswell
as PTT are recommended.
It can be simply done by means of 2 small audio type of transformers a few
resistors and trimpots ,usually from a junk box ,ex transistor radio or
modem ,with the PTT through an opto-coupler.
If you are interested I can send you a scanned image of a simple circuit
diagramme ,which I implemented myself and is working well .

Frank GM0CSZ / KN6WH
gm0csz(dot)kn6wh(at)ntlworld(dot)com

3323. Re: Radio control transmitter - interference problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-23 16:36:35 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <108ihggfahkae3@corp.supernews.com>
Source record: 26560

P. Venkman wrote:

> Tim Wescott <tim@wescottnospamdesign.com> wrote in message
news:<108gpe9afm1e59a@corp.supernews.com>...
>
>>P. Venkman wrote:
>>
>
> <SNIP>
>
>>>Is it as simple as finding a filter that passes 72 MHz along and
>>>splicing it in to the wire going to the antenna? Is that likely to
>>>cause other problems (transmitting on the wrong frequency, overheating
>>>the RF module due to impedance mismatch, sudden death)? Assuming I
>>>can't find a filter that passes along precisely the frequency I want,
>>>is it OK to put filters in series (like a high-pass plus a low-pass)?
>>>And finally, am I just totally missing the boat here with this idea?
>>>I'm open to other suggestions.
>>
>>First, you can really mess things up by playing the filter game, so
>>don't do it unless you need to.
>>
>>Second, it may be that the transmitter has a weaker signal, or that it
>>is a bit off frequency. Since your average military base has about a
>>gazillion different transmitters it's likely that there is some spur
>>being generated at 72MHz, or a valid signal at your RX's image
>>frequency. If your transmitter is a bit weak than such a signal from
>>the base would have an easy time getting into your RX.
>>
>>If you can get the receiver out of the plane (or if you can get to the
>>antenna) do a range check with the RX antenna rolled up but with the TX
>>antenna extended. I'd do this at some _other_ flying site. Check the
>>range with the suspect TX and with a known good one. If it's
>>significantly lower with the suspect TX then you can do all the
>>filtering in the world and it won't help you -- but having the new TX
>>fixed (or selling it and getting another brand) may help a lot.
>
>
> When I first had the problem I sent the transmitter back for service -
> they didn't find anything wrong, but tuned it anyway and sent it back.
> The problem still existed, so I got them to replace the transmitter.
> Still the same problem.
>
> At other flying sites the new transmitter actually range checks better

> than the old transmitter when checked against multiple different
> receivers. For these two reasons I don't think it's that this TX has
> a weaker or off-frequency signal.
>
> Lots of other people fly at the same location with a variety of
> equipement with no trouble. I've flown a variety of different gliders
> there with my old transmitter and never had a problem. I really don't
> think there's a conflicting 72 MHz signal.
>
> It really is just this transmitter at this particular site - other
> transmitters at the same site are fine, and this transmitter at other
> sites is just fine.
>
> Is there any way to make this work?

Not without more information, which was why I suggested a test.

Did you do the range check against the other transmitters with the TX antenna collapsed? If so, then you've done a fine test of how well your TX will work compared to others -- with everyone's antennas are collapsed. If you normally fly it with the antenna _out_ then you need to test it that way, and find some other way of attenuating the signal to the receiver -- like rolling up _it's_ antenna.

You obviously have a problem with that particular TX, which is why I'm suggesting a look at the TX first. Another question you can ask is does the TX have the same problem with other receivers? On other frequencies? Do you have another plane with a different brand receiver, or a buddy with same, that you can try at the problem site? This may be a valid thing to try.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

3324. First time using ladderline??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-23 16:38:13 UTC
From: Bob <nubob5001@yahoo.com>
Message-ID: <4Lbic.793$_12.399@read1.cgocable.net>
Source record: 26562

Hi, First time using the ladder line, Please offer your opinions?

I have the 50 foot tower, it is right outside the shack window, so will be drilling the two small holes in the sill, then fishing through approximately 12" or 18" then replace the spacers to keep the distance between the leads constant. That leaves the remaining 98 feet outside of which I need a distance of approx 35 or 40 feet of the ladder line to reach my center fed 80m or two wires 66feet each leg. What are my options with the left over 50 feet (approx) of ladder line? Coil it up? Cut it? And what are the rules about keeping the ladder line away from the tower and steal guy wires that are not insulated? I only want to do this once now and first time using the ladder line, all suggestions appreciated, thanks.....

3325. Re: Radio control transmitter - interference problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-23 16:43:07 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <vlbic.12068$IW1.760683@attbi_s52>
Source record: 26561

> Lots of other people fly at the same location with a variety of
> equipement with no trouble. I've flown a variety of different gliders
> there with my old transmitter and never had a problem. I really don't
> think there's a conflicting 72 MHz signal.
>
> It really is just this transmitter at this particular site - other
> transmitters at the same site are fine, and this transmitter at other
> sites is just fine.
>
> Is there any way to make this work?

You didn't say, but if that "military site" is an airport, there's a localizer beacon that's probably just off the end of the runway and is on 75 MHz. Could readily be strong enough to give your receiver trouble.

W4ZCB

3326. Re: First time using ladderline??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-23 17:59:15 UTC
From: Bob <balbert@ecrii.com>
Message-ID: <S9KdneKDia7GxxTdRVn2uQ@ecrii.com>
Source record: 26563

I'd suggest cutting off most of the excess, but leave some slack in case you need to redo the terminations.

As for the trim, I'd leave at least two inches of space to any surrounding metal. Nothing is very critical for 80 meters anyway; in fact, using coax would be easier and probably work just as well. That's what I do.

73, Bob

3327. Re: questions about 433MHZ modules

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-23 18:53:27 UTC
From: John <jocjo_john@yooha.com>
Message-ID: <c6bona0fq0@enews1.newsguy.com>
Source record: 26564

"Joe" <nuisancewildlife@nospamearthlink.net> wrote in message
news:2hVgc.2533$e4.733@newsread2.news.pas.earthlink.net...

> Hi John,
>
> See my question about surface mount antennas posted above (LOL). Maybe I
> should just leave the PLL out of the circuit and see if I can use just the
> receiver. The digital pin of the receiver seems to be noisy only when the
> transmitter it within a few feet of it, once I move it away, the noise
goes
> away. Thanks.
>
> Joe
> KB1KVI

I think everybody would be better off if I stayed out of the discussion on
surface mount antennas.

Yes, I agree about trying it as it is. If you're happy with the performance
as it is, no reason to change at this time. You could make the effort later
if your requirements change.

John

3328. Re: Radio control transmitter - interference problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-23 19:47:24 UTC
From: dougmc@frenzy.com
Message-ID: <gpeic.16349$NR5.15547@fe1.texas.rr.com>
Source record: 26565

In article <791aa995.0404221502.39000ca4@posting.google.com>,
P. Venkman <pvenkman@hotmail.com> wrote:

| I have problems with this transmitter at one particular flying site
| that's right next to a military base. The xmitter is fine at other
| locations, and all the gliders respond just fine to my 'old' xmitter
| at this site. I've done a bunch of things and it really is just the
| new xmitter at this particular flying site.

You haven't actually told us what the problem is.

Is the computer in your transmitter crashing? (interfering with the transmitter)
Are the servos in your plane jittering? (interfering with the receiver)
Are you seeing reduced range or something? (interfering with the receiver)

| It seems like there must be an interference problem with some signal
| being broadcast from the military base. I've tried to shield the
| transmitter without much improvement. That makes me think the
| offending signal may be coming in through the antenna.

We'll need to know what the actual problem is. Shielding your
transmitter isn't going to do much unless the interference is actually
affecting your transmitter (possible, but unlikely) rather than your
receiver.

| Being relatively naive electronically, it seems like I could simply
| insert a filter between the antenna and the rest of the transmitter
| that passes through the 72 MHz signal but blocks everything else.

If the problem is interference to your receiver, doing this at your
transmitter won't help at all. You'd need to do it at the receiver.

Some people have had good luck simply wrapping their receiver (just
the receiver, not the antenna) in tin foil. Twisting the servo and
power wires round and round can also help reduce interference to the
receiver as well, and you can get chokes to wrap your servo wires
around as well.

Very very few people put additional filters on their R/C receivers.

Are there any pager towers nearby? Pager companies use the spaces
between the R/C channels to talk to pagers, and can use hundreds of
watts -- this has definately been known to overload R/C receivers and
crash planes. (In that case, the fix would be to 1) do the tin
foil/choke thing and 2) try a different frequency. (Your transmitter
is synthesized, so all you need is a new receive crystal.)

| However, I'm smart enough to know I'm not that smart.

That's a pretty good sort of smart to be! :)

| Is it as simple as finding a filter that passes 72 MHz along and
| splicing it in to the wire going to the antenna?

Probably not, unless your problem really is with the transmitter
computer crashing.

Which receiver are you using? The cheap park flier ones don't handle
interference well at all.

Do other people fly at this site? Your radio should be able to talk
to any plane, so try switching frequencies and picking the proper
shift and see if you can do a proper range check with their plane.
(Or another plane if you have more.)

You might also try asking in rec.models.rc.air, though they'll
probably tell you the same things I did.

(And yes, I fly R/C too.)

--
Doug McLaren, dougmc@frenzy.com Reserve your bear to right arms.

3329. Re: CW IDER

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-24 01:30:34 UTC
From: pha@phanderson.com
Message-ID: <3bd1790.0404231730.862919d@posting.google.com>
Source record: 26566

sw6079@aol.com (zerobeat) wrote in message
news:<25e1f0d1.0404181918.57bc81d7@posting.google.com>...
> Anyone know of an easy to build ider? I know a basic stamp can be
> used, but I don't have the programming abilities. The QST ones I've
> seen all use outdated components and are complex. I'm building a
> small broacast band beacon (low end, around 530 khz) Thanks, 73,
> Mike.

Don't sell yourself too short on the programming end.

You might sneak a peak at

http://www.picaxe.orcon.net.nz/

He has code for a PICAXE-08 for a 35 word per minute CW IDer.

He is using a simple and cheap controller from http://www.picaxe.co.uk
which is $2 to $3 and can be programmed again and again using simply a
PC COM port and two resistors. The software free from the PICAXE
site.

I have code samples for more complex PICAXE devices at
http://www.phanderson.com/picaxe/picaxe.html

Barring using a processor, I think this would be one difficult
problem. With the processor it appears it can be done with a single
8-pin PICAXE.

73 de KZ3K

3330. Re: DDS building blocks....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-24 01:34:13 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <Ysjic.1489$7a5.428@bignews6.bellsouth.net>
Source record: 26567

Highland Ham wrote:
>>Yeah sure
>>I had to go my local supplier when I asked for samples
>
> ==========
> AD sends free samples when you order through the web ,destined for a US
> address
> I did that through a relative in LA who send the samples privately to me
> here in Scotland.
>
> However a ham working for AD -UK commented on this NG that AD-UK would be
> sympathetic to requests for free samples ,but I haven't tried that route as
> yet.
>
> Frank GM0CSZ / KN6WH
>
>
If you go to their website and sign up for their mailing list,
you will get a 'bingo card' every few months that you can send
back for free samples and info on new products, which often
includes DDS circuits, as well as A/D, D/A, and op amps. I have
also got samples of these, and some of their analog switches,
wide band amps, and mixer circuits. BTW they also make an
interresting driver amp for ADSL that looks like a low power
linear rf final amp good for a QRP rig.

3331. Re: ladder filters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-24 02:56:16 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c6cl0g$c3u$1@freenet9.carleton.ca>
Source record: 26568

(nospam@nouce.bellatlantic.net) writes:
> On Fri, 23 Apr 2004 03:29:53 GMT, "Paul_Morphy"
> <nopaul_morphy2@coolgoose.com> wrote:
>
>>There's a good article about building ladder filters in QRP Power. Designing
>>and Building High-Performance Crystal Ladder Filters by Mahkinson, N6NWP.
>>Was originally in QEX for Jan 1995. QRP Power also reprints an article by
>>W7ZOI, Refinements in Crystal Ladder Filter Design, from June 1995 QEX.
>>
> <<<<<<<snipped for brevity>>>>>>>>>>>>>>>>>>>>
>>"The usef ful upper frequency limit is determined by the influence of stray
>>capacitances at frequencies above 10 MHz and by the limitations imposed on
>>the VFO circuit for multiband HF operation. Consequently, the recommended
>>frequency range for an HF SSB crystal filter is between 6 and 12 MHz.: The
>>remaining criteria for the crystal frequency selection are the crystal Q and
>>the price."
>
> Don't tell Elecraft their 4.9152mhz filters can't work.
>
We've seen so much about measuring the crystals and then doing calculations
in recent years, that it's easy to forget that hams started using crystal
ladder filters about thirty years ago. Make that a quarter century ago.
The fifth edition of Pat Hawker's "Amateur Radio Techniques" (copyright
1978) and references a number of articles in the France and the UK from 1976
on.

Memory tells me that when such filters started showing up in US publications,
namely QST, it referenced at least some of those articles, but then with
time the key articles have become the later onesin QST.

The synopsis in ART shows some standard designs, and you are supposed
to scale the components for your choice of crystal frequency. And no
mention there (though perhaps it was in the original articles) of
matching crystals. This is rule of thumb work.

Michael VE2BVW

3332. Re: Homebrew PTO/VFO question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-24 03:12:22 UTC
From: mcalhoun@ksu.edu
Message-ID: <c6clum$th@unix1.cc.ksu.edu>
Source record: 26569

>Just by looking at that schematic, where would I stop building if I only
>wanted the VFO to use on a simple transmitter?
>I looked it over, and have a pretty good guess, but I'm not certain.

IMHO, it to me as if:
Q1 is the local oscillator VFO
Q2 is the mixer (it's the only xstr that gets anything from Q1;
because of capacitors C9 and C10, the bottom end of R3 and the
bottom end of Q3 are essentially at ground potential to RF)
Q3 is the RF amplifier
Q4 is the AF amplifier
Qrest are elements of a push-pull AF output amplifier

--Myron A. Calhoun, W0PBV.
--
Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge
PhD EE (retired). "Barbershop" tenor. CDL(PTXS). W0PBV. (785) 539-4448
NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle, Pistol)

3333. Re: psk31 cable and ic718

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-24 07:10:16 UTC
From: F8BOE <f8boe-8@bluemail.ch>
Message-ID: <408a12bd$0$26441$626a14ce@news.free.fr>
Source record: 26570

Hello Greg and al.

http://perso.wanadoo.fr/f6crp/denis/psk31.htm

is in french but there are useful shematics.

73 de F8BOE Olivier ...-.-

"Greg Doughty" <nightowls627@aol.comnojunk> a crit dans le message de news:20040423072215.06300.00000172@mb-m20.aol.com...
> Hello to all
>
> Just downloaded and am playing with psk31 software. I can receive ok as I have
> a cable for that(standard plug to plug). I would like to transmit but do not
> have the cable. Looking to homebrew something simple until I can afford the
> Rascal GLX. I mean something real simple like just some wires plugged to the
> appropriate pins on my mic jack. I have an IC 718. I just don't know which
> pins to go to. I'm thinking I want to trigger the vox . . . That just sounds
> like the easiest way. I do have some homebrew experience as I built a 20meter
> rockmite into an altoids can. . . and it works. Minimal, but I am fairly new
> to this. Licensed under a year.
>
> Thanks for any suggestions
> 73
> Greg
> ki4bbl@arrl.net

3334. i should speak too loudly into the mic to get more output power!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-24 10:01:16 UTC
From: chafik.philo@eudoramail.com
Message-ID: <cacbc942.0404240201.3d3bfc17@posting.google.com>
Source record: 26571

Hello
i have IC706MKII whith original Mic
i should speak too loudly into the mic to get more output power on SSB!
So i disturb XYL and my own helth!
Any alternative please
CN8JV From MORROCO

3335. Re: i should speak too loudly into the mic to get more output power!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-24 12:25:46 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <e1tic.2664$en3.1627@edtnps89>
Source record: 26572

Use a speech processor.

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

3336. Re: IMPORTANT ANTI VIRUS INFORMATION

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-24 15:59:08 UTC
From: Dave Bushong <dbushong@adelphia.net>
Message-ID: <LOidnSCNFdaUEhfdRVn-tw@adelphia.com>
Source record: 26573
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.packet,rec.radio.amateur.policy,rec.radio.amateur.space,rec.radio.amateur.swap

the.night@hunter.com wrote:

> Don't forget to report this virus/spammer to abuse@shaw.ca
> On Thu, 22 Apr 2004 22:52:30 GMT, SysAdmin@ed.shawcable.net wrote:
>
>
>>Protect yourself from new viruses that you may not know you have. We have designed a set of anti virus tools to keep your system secure. Visit here for more information on these free and easy to use tools
>>
>>http://www.gigdot.net/
>
>

Another good site that you can trust is http://www.gullible.com

3337. Re: i should speak too loudly into the mic to get more output power!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-24 16:36:58 UTC
From: Roadie <roadstar98cc@charter.net>
Message-ID: <108l5kvld0qvs38@corp.supernews.com>
Source record: 26574

Learn English!!

"chafik CN8JV" <chafik.philo@eudoramail.com> wrote in message
news:cacbc942.0404240201.3d3bfc17@posting.google.com...
> Hello
> i have IC706MKII whith original Mic
> i should speak too loudly into the mic to get more output power on SSB!
> So i disturb XYL and my own helth!
> Any alternative please
> CN8JV From MORROCO

3338. Re: i should speak too loudly into the mic to get more output power!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-24 19:08:39 UTC
From: Highland Ham <xygm0csz.wvkn6wh@ntlworld.com>
Message-ID: <NHLic.55$zc3.40@newsfe1-win>
Source record: 26583

> >i have IC706MKII whith original Mic
> >i should speak too loudly into the mic to get more output power on SSB!
> >So i disturb XYL and my own helth!
> >Any alternative please
> >CN8JV From MORROCO
>
> Increase the microphone gain setting.

If mic gain potmeter is already max. ,I can send you some circuit diagrammes
for a homebrew mic amplifier with readily available components.

Frank GM0CSZ / KN6WH

3339. Re: i should speak too loudly into the mic to get more output power!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-24 19:15:08 UTC
From: Highland Ham <xygm0csz.wvkn6wh@ntlworld.com>
Message-ID: <OHLic.56$zc3.45@newsfe1-win>
Source record: 26584

> Learn English!!
>
>
> "chafik CN8JV" <chafik.philo@eudoramail.com> wrote in message
> news:cacbc942.0404240201.3d3bfc17@posting.google.com...
> > Hello
> > i have IC706MKII whith original Mic
> > i should speak too loudly into the mic to get more output power on SSB!
> > So i disturb XYL and my own helth!
> > Any alternative please
> > CN8JV From MORROCO
==========
Second language in Morocco is French NOT English , so please show some
consideration and be helpful..
Your 2 words comment is definitely off the mark.

Frank ,GM0CSZ / KN6WH

3340. Re: i should speak too loudly into the mic to get more output power!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-24 21:52:49 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <107E.52F7%outhouse@midcoast.com>
Source record: 26575

Not a kind remark, I wonder how we would do in arabic?

Uwe (oops, also not a native speaker)

in article 108l5kvld0qvs38@corp.supernews.com, Roadie at
roadstar98cc@charter.net wrote on 4/24/04 11:36:

> Learn English!!
>
>
> "chafik CN8JV" <chafik.philo@eudoramail.com> wrote in message
> news:cacbc942.0404240201.3d3bfc17@posting.google.com...
>> Hello
>> i have IC706MKII whith original Mic
>> i should speak too loudly into the mic to get more output power on SSB!
>> So i disturb XYL and my own helth!
>> Any alternative please
>> CN8JV From MORROCO
>
>

3341. This electric utility has brass balls, and needs someone to CUT THEM OFF!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 00:47:58 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <xSDic.3948$7a5.1322@bignews6.bellsouth.net>
Source record: 26576

http://www.arrl.org/news/stories/2004/04/22/2/?nc=1

3342. How to Short Circuit Diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 01:14:58 UTC
From: songoku_@ig.com.br
Message-ID: <9ec5b8a8.0404241714.4fb82393@posting.google.com>
Source record: 26577

Hello,
I know this is a strange and silly question, but I'm in need of two
diodes leaking, in short circuit.
Is there a fast way to do that? Like over-heating?

Thanks

3343. Re: Homebrew PTO/VFO question.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 01:17:06 UTC
From: Uncle Peter <radioconnectionNO@cox.netSPAM>
Message-ID: <ekEic.16751$S42.2510@lakeread03>
Source record: 26578

"Brian" <brianNADA@NOiquestSPAM.net> wrote in message
news:pO6hc.1729$eZ5.423@newsread1.news.pas.earthlink.net...
> I prefer building stuff out of my junk pile. I do get a greater feeling of
> satisfaction when I can dive into the pile on hand and build something
that
> works.
>
> It's more fun that way!
>
> 73
>
>

Cheaper, too. There's three dollars worth of parts there.

3344. Re: How to Short Circuit Diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 01:28:40 UTC
From: JLB <IHateSpam@nospam.net>
Message-ID: <5vEic.5764$3m2.2372@fe03.usenetserver.com>
Source record: 26579

"Short Circuit' and 'Leak' are not the same thing.

If you want a short circuited diode, just replace it with a piece of wire.

If you want a diode that leaks, put a resistor of the appropriate value in
parallel with the diode.

--
Jim
N8EE

to email directly, send to my call sign at arrl dot net
"Hayato" <songoku_@ig.com.br> wrote in message
news:9ec5b8a8.0404241714.4fb82393@posting.google.com...
> Hello,
> I know this is a strange and silly question, but I'm in need of two
> diodes leaking, in short circuit.
> Is there a fast way to do that? Like over-heating?
>
> Thanks

3345. surface mount soldering..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 01:28:53 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1082856532.768434@smtp-1.griffin.com>
Source record: 26580

can anyone recommend at diy way of flow soldering surface mount components??
i ask as making somr boards up that are totally sm, and well i am going
blind trying to solder them using iron!!

thanks g0zen..

3346. Re: How to Short Circuit Diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 01:39:57 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <408B16ED.1B850019@rica.net>
Source record: 26581

Hayato wrote:
>
> Hello,
> I know this is a strange and silly question, but I'm in need of two
> diodes leaking, in short circuit.
> Is there a fast way to do that? Like over-heating?
>
> Thanks

A severely overheated junction will usually look much like a piece of
wire. Doing this with excessive reverse voltage may work quicker than
excessive forward current, which often destroys the case as well.
--
John Popelish

3347. Re: surface mount soldering..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 02:15:55 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <apGcnZrObMQUghbdUSdV9g@ptd.net>
Source record: 26582

"zindazenda" <zen@lineisp.co.uk> wrote in message
news:1082856532.768434@smtp-1.griffin.com...
> can anyone recommend at diy way of flow soldering surface mount
components??
> i ask as making somr boards up that are totally sm, and well i am going
> blind trying to solder them using iron!!
>
> thanks g0zen..

If you're careful and have the luxury of a little practice to build technique, you can use a heat gun (hot air) to reflow solder SMT parts, but it takes solder paste rather than wire solder (which requires some care in handling and storage), and it does take practice to get the feel for your particular heat gun and develop the technique to get the best results.

Another technique is the "toaster oven method" ... search the Yahoo groups for "ez-bake" for a message thread with a wealth of information.

73,
Carl - wk3c

3348. Re: surface mount soldering..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 13:45:03 UTC
From: "G.Beat" <now9spamgb@no.comcast.spam.net>
Message-ID: <yhPic.30933$aQ6.1632419@attbi_s51>
Source record: 26585

"zindazenda" <zen@lineisp.co.uk> wrote in message
news:1082856532.768434@smtp-1.griffin.com...
> can anyone recommend at diy way of flow soldering surface mount
> components??
> i ask as making somr boards up that are totally sm, and well i am going
> blind trying to solder them using iron!!
>
> thanks g0zen..
>

Here is a link for the "Ez-bake" approach to soldering.

http://www.seattlerobotics.org/encoder/200006/oven_art.htm

gb

3349. Re: i should speak too loudly into the mic to get more output power!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 15:22:20 UTC
From: "Dee D. Flint" <deeflint01@comcast.net>
Message-ID: <TOmdnTpwMdAxShbdRVn-tw@comcast.com>
Source record: 26586

"Highland Ham" <xygm0csz.wvkn6wh@ntlworld.com> wrote in message
news:NHLic.55$zc3.40@newsfe1-win...
> > >i have IC706MKII whith original Mic
> > >i should speak too loudly into the mic to get more output power on SSB!
> > >So i disturb XYL and my own helth!
> > >Any alternative please
> > >CN8JV From MORROCO
> >
> > Increase the microphone gain setting.
> ----------
> If mic gain potmeter is already max. ,I can send you some circuit
diagrammes
> for a homebrew mic amplifier with readily available components.
>
> Frank GM0CSZ / KN6WH
>
>

Also keep in mind that on SSB, a typical meter reading will be 50% output power or less as the meter will be reading average power. If it reads any higher, you are almost certainly overdriving the mic. If your power output is set at max and your mic gain & speech processor are set so that the ALC reading is between the lower and upper limit, then your radio is functioning correctly and you should not try to drive it any harder.

Dee D. Flint, N8UZE

3350. Need SM-20 Mic. schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 16:17:39 UTC
From: bebepip@yahoo.com
Message-ID: <cb7bf964.0404250817.24d75d19@posting.google.com>
Source record: 26587

When i move loose my sm-20 Icom microphone schematic, can somebody indicate or send me a copy or scan of this? or tell me where can i download it?

tks in advance, Artur.

3351. Icom 730 Preventative Maintenance Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 16:50:26 UTC
From: Michael Brown <mabrown@qx.net>
Message-ID: <A7mdnWjhu7ijcRbdRVn-tw@qx.net>
Source record: 26588

I recently purchased an Icom 730 HF radio. This is my first HF rig evn
though I have had my Extra class license for about 2 years now. I noticed
on the Icom web page that there are several preventative maintence tasks
that they recommend performing on the IC-730 due to the age of these rigs.
I am looking for anyone that may have performed these tasks on the IC-730
that might be able to give me a basis walk-through of how I need to go about
taking the panels off the radio to gain access to the RF unit in the radio.
Here is what is listed on the Icom web page that they reccomend doing to the
radio:
1.) On the RF unit, resolder the J2 and J3 connectors. Due to the
relatively thick coax cables on the connectors, these solder joints tend to
crack with age and cause intermittent transmit and receive problems.

2.) Make sure the receiver preamp works. If inoperative, replace relay
RL1 on the RF unit. Install the factory update to prevent relay failure.

3.) Check transistor Q5 on the RF unit. If it is a 2SC945Q, replace it
with the improved 2SC2878B to prevent spurious output from the transmitter
and failure of the driver transistors. If Q5 is a type 1636, it doesn't need
to be replaced.

4.) Clean the RIT pot and switch with tuner cleaner. These controls
are usually noisy and erratic, making the RIT hard to use.

5.) Tighten the chrome-plated PC board mounting screws. The screws and
spacers tend to come loose if the radio is used in a high-vibration, mobile
environment. Don't forget to tighten the screws on the logic and IF units
located beneath the main unit.

6.) Check the bandwidth coupler for proper tightness.
Tighten as needed.

I'm sure the first step of re-soldering the J2 and J3 connectors on
the RF unit I can probably handle if all this involves is desoldering the
connectors and resoldering them. I'm not so much concerned about the
receiver preamp working, but does anyone know if Icom still stocks parts for
the Icom 730? The third step reccomends swapping out the Q5 transistor on
the RF unit if it is a 2SC945Q transistor and replacing it with a 2SC2878B

transistor to prevent spurious output from the transmitter and failure of the driver transistors. How hard would it be to replace this transistor? I would assume it would involve desoldering the transistor and replacing it with the new transistor. Would I just need to get a 2SC2878B transistor and some heat sink compond to replace this transistor? Where would get the 2SC2878B transitor? Can I order one for Mouser, or would this have to be ordered directly from Icom? Step 4 involves cleaning the RIT pot with some tuner cleaner, probably the easiest step. How do I locate the RIT borad to clean the pots? I would assume here too that all I need to do is to spray a shot of contact cleaner in the holes of the pot and switch on the RIT unit? Step 5 reccomends tightening all of the screws on the PC board. Hopefully I can handle this step if I can get access to all of the srews to tighten them. Step 6 reccomend checking the bandwith coupler for proper tightness and retightening it if needed. Where is the bandwidth coupler located inside the radio? What tools would I need to tighten it?

I thought I would post these questions on the newsgroups to see if anyone that is a little more technical-minded than me could walk me through performing these tasks. I have downloaded an instruction manual and service manual for the IC-730, but I thought maybe someone who might have a 730 and has performed these tasks could tell me how do them a little easier. The last thing I want to do is screw up a good radio. Thanks for reading my long post. Please e-mail me if anyone can help me out with this. Thanks!

73,
Mike KU4UV
Lexington, KY.

3352. Re: surface mount soldering..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 18:22:58 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1082917378.13046@smtp-1.griffin.com>
Source record: 26589

interesting????!!

will investigate more..

question..how do you put 100 sm parts on board and get it to oven???does the water based solder act as glue till it melts??

simon
"G.Beat" <now9spamgb@no.comcast.spam.net> wrote in message news:yhPic.30933$aQ6.1632419@attbi_s51...
> "zindazenda" <zen@lineisp.co.uk> wrote in message
> news:1082856532.768434@smtp-1.griffin.com...
> > can anyone recommend at diy way of flow soldering surface mount
> > components??
> > i ask as making somr boards up that are totally sm, and well i am going
> > blind trying to solder them using iron!!
> >
> > thanks g0zen..
> >
>
> Here is a link for the "Ez-bake" approach to soldering.
>
> http://www.seattlerobotics.org/encoder/200006/oven_art.htm
>
> gb
>
>

3353. sm rf power transistors??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 18:26:37 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1082917596.683323@smtp-1.griffin.com>
Source record: 26590

does anyone have a few transistor recommendations..
looking for 1w at vhf (2m)..must be surface mount..

dont mind using 2 in parallel..

g0zen
p.s. preferably not mrf as hard to get here..

needs to be 15v ce gain 10db+

3354. Re: DDS building blocks....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 20:02:57 UTC
From: Duncan Clark <news0000001@ntlworld.com>
Message-ID: <BE4gntHxlBjAFwTl@ntlworld.com>
Source record: 26591

In message <8rbic.539$yd1.296@newsfe1-win>, Highland Ham
<xygm0csz.wvkn6wh@ntlworld.com> writes
>> Yeah sure
>> I had to go my local supplier when I asked for samples
>==========
>AD sends free samples when you order through the web ,destined for a US
>address I did that through a relative in LA who send the samples
>privately to me here in Scotland.
>
>However a ham working for AD -UK commented on this NG that AD-UK would
>be sympathetic to requests for free samples ,but I haven't tried that
>route as yet.

Worked for me over the web. Shipped out of Holland to the UK by courier!

Duncan
G4ELJ
--
Duncan Clark

3355. Re: sm rf power transistors??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 20:35:56 UTC
From: Highland Ham <xygm0csz.wvkn6wh@ntlworld.com>
Message-ID: <_jVic.23724$4N3.3034@newsfe1-win>
Source record: 26592

> does anyone have a few transistor recommendations..
> looking for 1w at vhf (2m)..must be surface mount..
>
> dont mind using 2 in parallel..
>
> g0zen
> p.s. preferably not mrf as hard to get here..
>
> needs to be 15v ce gain 10db+

==========

Suggest you check with Mainline Electronics - Leicester , tel : 0116 286 5303

They highly likely have surface mount VHF power transistors from Motorola (MRF series) and Philips (BLY series) in the 1 Watt ,10dB range.

Frank GM0CSZ / KN6WH

3356. 4 pin VRs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 22:08:54 UTC
From: Lou <FFSTA17NO@SPAMACCESS995.COM>
Message-ID: <WFWic.3401$WC3.34530@ord-read.news.verio.net>
Source record: 26593

I've been looking for a 4 pin voltage regulator. I have a particular number in mind (uA78HG), but so far as I know, they're not in production anymore. I've looked in a couple places on line for a 4 pin job, with no luck. Since the one I "need" seems to be gone for good, right now I'm willing to use any 12 vdc - 15 vdc 1 Amp or more voltage regulator to get my power supply going to any extent - rather than leaving it collect dust or tearing it apart.

Failing finding a VR of my needs, I guess I'll have to redesign this thing to work some other way. I thought a last minute search may produce something to make life easier. Any ideas? With all the crap I have here, I could build a few power supplies (probably). But never ever - do I have the part "I" need.

Lou

3357. Re: 4 pin VRs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 22:40:13 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c6heodssi1@freenet9.carleton.ca>
Source record: 26594

"Lou" (FFSTA17NO@SPAMACCESS995.COM) writes:
> I've been looking for a 4 pin voltage regulator. I have a particular number
> in mind (uA78HG), but so far as I know, they're not in production anymore.
> I've looked in a couple places on line for a 4 pin job, with no luck. Since
> the one I "need" seems to be gone for good, right now I'm willing to use any
> 12 vdc - 15 vdc 1 Amp or more voltage regulator to get my power supply going
> to any extent - rather than leaving it collect dust or tearing it apart.
>
> Failing finding a VR of my needs, I guess I'll have to redesign this thing
> to work some other way. I thought a last minute search may produce something
> to make life easier. Any ideas? With all the crap I have here, I could build
> a few power supplies (probably). But never ever - do I have the part "I"
> need.
>
> Lou
>
>
>
But they were never popular. Occasionally, there'd be an article in the hobby
and/or ham magazines about them, but they rarely made it into published
construction articles. Sure, that doesn't reflect whether or not something
is used commercially, but it does suggest that there was something about
them that never caught on.

The question to ask is why you need the four terminal regulators.
What is it that makes you want to use one instead of a three terminal
regulator? The LM317 (and 337 for negative voltages) is a variable
three terminal regulator, and far more common, not just now but
forever. Not enough current (though I didn't think the 4 terminal
regulators were particular better than the average 3 terminal regulator
in that regard)? Then pick a regulator that does have better than
usual current. You could find them years ago, though not so commonly,
and I can't think why they wouldn't be around still. Or use an
external transistor to boost current. Or there is something verys
specific about the four-terminal regulator that you need, but in order
to come up with a workaround, you need to be specific of the need.

If you just need a regulator, virtually anything will fit in there,
and you just wire it properly and ignore the fourth terminal.

Michael VE2BVW

3358. Re: 4 pin VRs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 22:52:58 UTC
From: "G.Beat" <now9spamgb@no.comcast.spam.net>
Message-ID: <BiXic.33928$w96.2409259@attbi_s54>
Source record: 26595

"Lou" <FFSTA17NO@SPAMACCESS995.COM> wrote in message
news:WFWic.3401$WC3.34530@ord-read.news.verio.net...
> I've been looking for a 4 pin voltage regulator. I have a particular
> number
> in mind (uA78HG), but so far as I know, they're not in production anymore.
> I've looked in a couple places on line for a 4 pin job, with no luck.
> Since
> the one I "need" seems to be gone for good, right now I'm willing to use
> any
> 12 vdc - 15 vdc 1 Amp or more voltage regulator to get my power supply
> going
> to any extent - rather than leaving it collect dust or tearing it apart.
>
> Failing finding a VR of my needs, I guess I'll have to redesign this thing
> to work some other way. I thought a last minute search may produce
> something
> to make life easier. Any ideas? With all the crap I have here, I could
> build
> a few power supplies (probably). But never ever - do I have the part "I"
> need.
>
> Lou
>

Lou -

I see from the Internet that this is not a new question.

] UA78HCSC and UA78HG
]
] Both of these numbers were found on 2 separate yet supposedly identical
] parts/units. They were 4 pin regulators used in a 5-15VDC 7 AMP Power
] Supply. Now, the HG number came from the manual itself for the power
supply
] I purchased originally. The HCSC was on a spare unit I bought - found on
] E-Bay about a year ago. It may have been replaced and for all I know not
] quite up to par with the HG. I've never run the spare unit through it's
] paces yet. I don't have any listings to confirm or deny this. BUT if
someone
] has these parts and willing to sell them, or know of a source thereof, I'd
] be happy to hear from them. OR something equivalent. As the other
gentleman
] alluded to, I don't want to have to "redesign" these power supplies.

IF this regulator is a TO-3 case, why not use a National LM317 (or 350, 338) adjustable regulator?
It comes in a TO-220 and TO-3 case style (as well as number of surface mounts)
http://www.national.com/pf/LM/LM317.html

Fairchild spec sheet
http://www.fairchildsemi.com/ds/LM/LM317.pdf

LM-317 tutorial
http://casemods.pointofnoreturn.org/vregtut/tutorial-full.html

On-line LM-317 designer
http://www.qsl.net/ok1duo/lm317.htm

Over voltage protection (add-on)
http://www.mitedu.freeserve.co.uk/Circuits/Power/car_conv.htm

http://www.mitedu.freeserve.co.uk/Circuits/Power/lm317.htm

A higher current design (using 2N3055 pass transistors)
http://ourworld.compuserve.com/homepages/Bill_Bowden/page12.htm

w9gb

3359. Re: 4 pin VRs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 22:57:52 UTC
From: "G.Beat" <now9spamgb@no.comcast.spam.net>
Message-ID: <QnXic.34816$aQ6.1868485@attbi_s51>
Source record: 26596

"Lou" <FFSTA17NO@SPAMACCESS995.COM> wrote in message
news:WFWic.3401$WC3.34530@ord-read.news.verio.net...
> I've been looking for a 4 pin voltage regulator. I have a particular
> number
> in mind (uA78HG), but so far as I know, they're not in production anymore.
> I've looked in a couple places on line for a 4 pin job, with no luck.
> Since
> the one I "need" seems to be gone for good, right now I'm willing to use
> any
> 12 vdc - 15 vdc 1 Amp or more voltage regulator to get my power supply
> going
> to any extent - rather than leaving it collect dust or tearing it apart.
>
> Failing finding a VR of my needs, I guess I'll have to redesign this thing
> to work some other way. I thought a last minute search may produce
> something
> to make life easier. Any ideas? With all the crap I have here, I could
> build
> a few power supplies (probably). But never ever - do I have the part "I"
> need.
>
> Lou
>

The LM396 is another possibility, capable of 10 amps - BUT is limited to 15
volts
http://www.assistlab.co.kr/contents/notice/datasheet/pdfs/regulator/lm196_396.pdf

Construction & Theory
http://www.qsl.net/vk5br/PowerSup.htm

gb

3360. seek lamp changer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 23:13:52 UTC
From: alanh_27@yahoo.com
Message-ID: <1e3670a7.0404251513.1a8f5132@posting.google.com>
Source record: 26447
Cross-posted to: sci.electronics.repair,sci.electronics.components,rec.radio.amateur.homebrew

a colleague has a little gizmo which grabs onto small lamps used in pushbutton indicators and switches, etc. He doesn't recall where he got it.

it is marked: MICROSWITCH 15PA19 LAMP CHANGER

where to buy this, or similar?

3361. Re: i should speak too loudly into the mic to get more output power!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 23:42:17 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.00000015.003b1fc9@btinternet.com>
Source record: 26448

Hi,

If this is of any help, the service manual (12MB) for
the IC-706MKII may be downloaded from here (12MB) -

http://www.cqham.ru/ftp2/ser_ic-706mk2g.pdf

Perhaps you can then find some way of increasing the
microphone circuit gain.

73 de Joe, G3LLV

3362. Re: seek lamp changer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-25 23:56:00 UTC
From: NoSpam <nospam@nospam.com>
Message-ID: <keYic.42225$um3.828108@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26449
Cross-posted to: sci.electronics.repair,sci.electronics.components,rec.radio.amateur.homebrew

"Alan Horowitz" <alanh_27@yahoo.com> wrote in message
news:1e3670a7.0404251513.1a8f5132@posting.google.com...
> a colleague has a little gizmo which grabs onto small lamps used in
> pushbutton indicators and switches, etc. He doesn't recall where he
> got it.
>
> it is marked: MICROSWITCH 15PA19 LAMP CHANGER
>
>
> where to buy this, or similar?

Well, there a couple of different sorts of tools which do this job.....

http://catalog.sensing.honeywell.com/datasheet.asp?FAM=nawds&PN=15PA19 is a drawing of the OEM tool you mentioned from Microswitch (which has been swallowed up by Honeywell, so I'm not sure it's even still available given the caveats on the top of the webpage --- the drawing is dated 1958 & 1959 !!!).

http://shop.store.yahoo.com/tmt/lamextmtn553.html shows a fancier kind (albeit a bit pricy, like most things from that outfit).

Also look at the bottom of the webpage http://www.tecratools.com/pages/telecom/telecom_handtools.html for what looks to be the same sort of thing for less $$.

There's also a kind of lamp extraction tool which looks like a U shaped piece of metal ..... go to http://www.mouser.com/catalog/618/914.pdf and see the item at the bottom of the webpage called "lamp extractor tool".

And one which looks like a metal tube with a couple of splits at one end, and a plastic cap at the other ..... take a look at http://www.mouser.com/catalog/618/917.pdf on the bottom of the page under "lamp extractor" in the accessories section. Might be the closest to what your friend has, but you need to be sure it fits the lamps you want to pull.

Finally, I have seen el-cheapo sets of lamp pullers (I think I even have one somewhere in my tool drawer) at hamfests, flea markets, etc. at the tables which sell all the various tools & gizmos. Also might be worth checking with an outfit like MCM Electronics or Ocean State Electronics which caters to the industrial/electronic repair trade .... they often have this kind of generic item. Even if you can't find it on their web catalog pages, would be worth a call on the phone.

May also want to do some googling for "miniature lamp puller", "minaiture lamp extractor", etc. and see what turns up.

73s

3363. Re: 4 pin VRs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 00:03:05 UTC
From: Lou <FFSTA17NO@SPAMACCESS995.COM>
Message-ID: <ZkYic.3405$WC3.34420@ord-read.news.verio.net>
Source record: 26450

Thanks. I'll look into it.

Lou

"G.Beat" <now9spamgb@no.comcast.spam.net> wrote in message
news:BiXic.33928$w96.2409259@attbi_s54...
> "Lou" <FFSTA17NO@SPAMACCESS995.COM> wrote in message
> news:WFWic.3401$WC3.34530@ord-read.news.verio.net...
> > I've been looking for a 4 pin voltage regulator. I have a particular
> > number
> > in mind (uA78HG), but so far as I know, they're not in production
anymore.
> > I've looked in a couple places on line for a 4 pin job, with no luck.
> > Since
> > the one I "need" seems to be gone for good, right now I'm willing to use
> > any
> > 12 vdc - 15 vdc 1 Amp or more voltage regulator to get my power supply
> > going
> > to any extent - rather than leaving it collect dust or tearing it apart.
> >
> > Failing finding a VR of my needs, I guess I'll have to redesign this
thing
> > to work some other way. I thought a last minute search may produce
> > something
> > to make life easier. Any ideas? With all the crap I have here, I could
> > build
> > a few power supplies (probably). But never ever - do I have the part "I"
> > need.
> >
> > Lou
> >
>
> Lou -
>
> I see from the Internet that this is not a new question.
>
>] UA78HCSC and UA78HG
>]
>] Both of these numbers were found on 2 separate yet supposedly identical
>] parts/units. They were 4 pin regulators used in a 5-15VDC 7 AMP Power
>] Supply. Now, the HG number came from the manual itself for the power
> supply
>] I purchased originally. The HCSC was on a spare unit I bought - found on
>] E-Bay about a year ago. It may have been replaced and for all I know not
>] quite up to par with the HG. I've never run the spare unit through it's

>] paces yet. I don't have any listings to confirm or deny this. BUT if
> someone
>] has these parts and willing to sell them, or know of a source thereof,
I'd
>] be happy to hear from them. OR something equivalent. As the other
> gentleman
>] alluded to, I don't want to have to "redesign" these power supplies.
>
> IF this regulator is a TO-3 case, why not use a National LM317 (or 350,
338)
> adjustable regulator?
> It comes in a TO-220 and TO-3 case style (as well as number of surface
> mounts)
> http://www.national.com/pf/LM/LM317.html
>
> Fairchild spec sheet
> http://www.fairchildsemi.com/ds/LM/LM317.pdf
>
> LM-317 tutorial
> http://casemods.pointofnoreturn.org/vregtut/tutorial-full.html
>
> On-line LM-317 designer
> http://www.qsl.net/ok1duo/lm317.htm
>
> Over voltage protection (add-on)
> http://www.mitedu.freeserve.co.uk/Circuits/Power/car_conv.htm
>
> http://www.mitedu.freeserve.co.uk/Circuits/Power/lm317.htm
>
> A higher current design (using 2N3055 pass transistors)
> http://ourworld.compuserve.com/homepages/Bill_Bowden/page12.htm
>
> w9gb
>
>
>
>
>
>
>

3364. Re: 4 pin VRs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 00:06:10 UTC
From: Lou <FFSTA17NO@SPAMACCESS995.COM>
Message-ID: <SnYic.3406$WC3.34492@ord-read.news.verio.net>
Source record: 26451

As I tried to imply, I thought I would take a last shot to try to find the "exact" match. Seemed to me, someone once suggested that these units were still selling over in the UK. Failing that, I would have to redesign this thing to work another way. The ideas submitted are great and well... it's off to the parts bins to see what I can scare up. My luck, everything but what I need.

Thanks again for all replies. It is appreciated.

Lou

"Michael Black" <et472@FreeNet.Carleton.CA> wrote in message news:c6heodssi1@freenet9.carleton.ca...
> "Lou" (FFSTA17NO@SPAMACCESS995.COM) writes:
> > I've been looking for a 4 pin voltage regulator. I have a particular number
> > in mind (uA78HG), but so far as I know, they're not in production anymore.
> > I've looked in a couple places on line for a 4 pin job, with no luck. Since
> > the one I "need" seems to be gone for good, right now I'm willing to use any
> > 12 vdc - 15 vdc 1 Amp or more voltage regulator to get my power supply going
> > to any extent - rather than leaving it collect dust or tearing it apart.
> >
> > Failing finding a VR of my needs, I guess I'll have to redesign this thing
> > to work some other way. I thought a last minute search may produce something
> > to make life easier. Any ideas? With all the crap I have here, I could build
> > a few power supplies (probably). But never ever - do I have the part "I"
> > need.
> >
> > Lou
> >
> >
> >
> But they were never popular. Occasionally, there'd be an article in the hobby
> and/or ham magazines about them, but they rarely made it into published
> construction articles. Sure, that doesn't reflect whether or not something
> is used commercially, but it does suggest that there was something about

> them that never caught on.
>
> The question to ask is why you need the four terminal regulators.
> What is it that makes you want to use one instead of a three terminal
> regulator? The LM317 (and 337 for negative voltages) is a variable
> three terminal regulator, and far more common, not just now but
> forever. Not enough current (though I didn't think the 4 terminal
> regulators were particular better than the average 3 terminal regulator
> in that regard)? Then pick a regulator that does have better than
> usual current. You could find them years ago, though not so commonly,
> and I can't think why they wouldn't be around still. Or use an
> external transistor to boost current. Or there is something verys
> specific about the four-terminal regulator that you need, but in order
> to come up with a workaround, you need to be specific of the need.
>
> If you just need a regulator, virtually anything will fit in there,
> and you just wire it properly and ignore the fourth terminal.
>
> Michael VE2BVW
>
>

3365. Re: seek lamp changer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 01:38:11 UTC
From: Doug Smith W9WI <w9wi@invalid.invalid>
Message-ID: <408C67FB.9080500@invalid.invalid>
Source record: 26452
Cross-posted to: sci.electronics.repair,sci.electronics.components,rec.radio.amateur.homebrew

Alan Horowitz wrote:
> a colleague has a little gizmo which grabs onto small lamps used in
> pushbutton indicators and switches, etc. He doesn't recall where he
> got it.
>
> it is marked: MICROSWITCH 15PA19 LAMP CHANGER
>
>
> where to buy this, or similar?

For some applications, a few inches of heat-shrink tubing works well for
this.

--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com

3366. Re: seek lamp changer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 01:57:55 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <D0_ic.35654$IW1.1628731@attbi_s52>
Source record: 26453
Cross-posted to: sci.electronics.repair,sci.electronics.components,rec.radio.amateur.homebrew

> Alan Horowitz wrote:
> > a colleague has a little gizmo which grabs onto small lamps used in
> > pushbutton indicators and switches, etc. He doesn't recall where he
> > got it.
> >
> > it is marked: MICROSWITCH 15PA19 LAMP CHANGER
> >
> >
> > where to buy this, or similar?
>
That tool is also known as a Neuses N-553A. Available from Neuses via
Google. Works for 327, 328 and similar bulbs.

W4ZCB

3367. Re: 4 pin VRs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 02:16:05 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <aKidnZlJfvzp7BHdRVn-vg@ctc.net>
Source record: 26454

"Lou" <FFSTA17NO@SPAMACCESS995.COM> wrote in message
news:WFWic.3401$WC3.34530@ord-read.news.verio.net...
> I've been looking for a 4 pin voltage regulator. I have a particular
number
> in mind (uA78HG), but so far as I know, they're not in production anymore.
> I've looked in a couple places on line for a 4 pin job, with no luck.
Since
> the one I "need" seems to be gone for good, right now I'm willing to use
any
> 12 vdc - 15 vdc 1 Amp or more voltage regulator to get my power supply
going
> to any extent - rather than leaving it collect dust or tearing it apart.
>
> Failing finding a VR of my needs, I guess I'll have to redesign this thing
> to work some other way. I thought a last minute search may produce
something
> to make life easier. Any ideas? With all the crap I have here, I could
build
> a few power supplies (probably). But never ever - do I have the part "I"
> need.

Is the NTE 953 one that you can use as a replacement ?

3368. Re: 4 pin VRs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 02:36:29 UTC
From: Lou <FFSTA17NO@SPAMACCESS995.COM>
Message-ID: <NA_ic.3409$WC3.34673@ord-read.news.verio.net>
Source record: 26455

Not sure, will have to look at it and see. Thanks.

Lou

"Ralph Mowery" <rmowery@ctc.net> wrote in message
news:aKidnZlJfvzp7BHdRVn-vg@ctc.net...
>
> "Lou" <FFSTA17NO@SPAMACCESS995.COM> wrote in message
> news:WFWic.3401$WC3.34530@ord-read.news.verio.net...
> > I've been looking for a 4 pin voltage regulator. I have a particular
> number
> > in mind (uA78HG), but so far as I know, they're not in production
anymore.
> > I've looked in a couple places on line for a 4 pin job, with no luck.
> Since
> > the one I "need" seems to be gone for good, right now I'm willing to use
> any
> > 12 vdc - 15 vdc 1 Amp or more voltage regulator to get my power supply
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> > to any extent - rather than leaving it collect dust or tearing it apart.
> >
> > Failing finding a VR of my needs, I guess I'll have to redesign this
thing
> > to work some other way. I thought a last minute search may produce
> something
> > to make life easier. Any ideas? With all the crap I have here, I could
> build
> > a few power supplies (probably). But never ever - do I have the part "I"
> > need.
>
> Is the NTE 953 one that you can use as a replacement ?
>
>

3369. Re: Need SM-20 Mic. schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 03:02:46 UTC
From: mc <addr@domain.suf>
Message-ID: <5ruo805nv5g8fc6t444fso0tb5aujk3cko@4ax.com>
Source record: 26456

On 25 Apr 2004 09:17:39 -0700, bebepip@yahoo.com (AGH) wrote:

>When i move loose my sm-20 Icom microphone schematic, can somebody
>indicate or send me a copy or scan of this? or tell me where can i
>download it?

The wiring pin out is here, if that helps at all:
http://www.mods.dk/view.php?ArticleId=2290

1. microphone output white
2. +8 VDC input red
3. frequency up/down blue
4. no connection
5. PTT yellow
6. GND (PTT ground) black
7. GND (mic ground) shield
8. No connection

3370. Re: 4 pin VRs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 04:06:46 UTC
From: ehsjr@bellatlantic.net
Message-ID: <408C8ACC.9F65E59C@bellatlantic.net>
Source record: 26457

Lou wrote:
>
> I've been looking for a 4 pin voltage regulator. I have a particular number
> in mind (uA78HG), but so far as I know, they're not in production anymore.
> I've looked in a couple places on line for a 4 pin job, with no luck. Since
> the one I "need" seems to be gone for good, right now I'm willing to use any
> 12 vdc - 15 vdc 1 Amp or more voltage regulator to get my power supply going
> to any extent - rather than leaving it collect dust or tearing it apart.
>
> Failing finding a VR of my needs, I guess I'll have to redesign this thing
> to work some other way. I thought a last minute search may produce something
> to make life easier. Any ideas? With all the crap I have here, I could build
> a few power supplies (probably). But never ever - do I have the part "I"
> need.
>
> Lou

You need a compelling reason NOT to use a 3 terminal
chip to replace the 4 terminal thing. For example,
an LM317 and 1 resistor and 1 pot creates a variable
regulator. 3 components - top that with a 4 terminal
regulator. There's no design to do. Go to the datasheet
and the schematic is there.

3371. Re: 4 pin VRs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 04:52:26 UTC
From: Lou <FFSTA17NO@SPAMACCESS995.COM>
Message-ID: <eA0jc.3412$WC3.34633@ord-read.news.verio.net>
Source record: 26458

thanks!

<ehsjr@bellatlantic.net> wrote in message
news:408C8ACC.9F65E59C@bellatlantic.net...
>
>
> Lou wrote:
> >
> > I've been looking for a 4 pin voltage regulator. I have a particular
number
> > in mind (uA78HG), but so far as I know, they're not in production
anymore.
> > I've looked in a couple places on line for a 4 pin job, with no luck.
Since
> > the one I "need" seems to be gone for good, right now I'm willing to use
any
> > 12 vdc - 15 vdc 1 Amp or more voltage regulator to get my power supply
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> > to any extent - rather than leaving it collect dust or tearing it apart.
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something
> > to make life easier. Any ideas? With all the crap I have here, I could
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> > a few power supplies (probably). But never ever - do I have the part "I"
> > need.
> >
> > Lou
>
> You need a compelling reason NOT to use a 3 terminal
> chip to replace the 4 terminal thing. For example,
> an LM317 and 1 resistor and 1 pot creates a variable
> regulator. 3 components - top that with a 4 terminal
> regulator. There's no design to do. Go to the datasheet
> and the schematic is there.

3372. unknown part labeled SGH 02

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 09:07:01 UTC
From: Markus Wolfgart <xx_markus.wolfgart@dlr.de>
Message-ID: <408CD135.6080309@dlr.de>
Source record: 26459

Hi OM's,

I need some help to identify a kind of communication ic,
I found on a surplus market last weekend.

I get a box of them and it's looks like a high quality part.

The part is labeled as

SGH XX 01.03 <long number>

where XX means:

02,03,05,07,08,09,10,11,13,14,15,16,17,18,19,20,
21,22,23,24,26,27,28,29,30,31,35,36,50

marked with a blue dot on the case

18 Pin in square 2x4 and 2x5

The case is made of metal 34 mm x 21 mm x 20 mm
in size.

Have someone an idea which kind of ic could this
be? (for an oscillator it has to much pins)

--

==========

Markus
DL8MBY

DLR

==========
PS.: remove the xx_ from email adr. to reply
==========

3373. Re: seek lamp changer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 13:01:15 UTC
From: Terry <tsanford@nf.sympatico.ca>
Message-ID: <wK7jc.11246$iX1.430242@news20.bellglobal.com>
Source record: 26460
Cross-posted to: sci.electronics.repair,sci.electronics.components,rec.radio.amateur.homebrew

"Harold E. Johnson" <W4ZCB@mchsi.com> wrote in message
news:D0_ic.35654$IW1.1628731@attbi_s52...
>
>
> > Alan Horowitz wrote:
> > > a colleague has a little gizmo which grabs onto small lamps used in
> > > pushbutton indicators and switches, etc. He doesn't recall where he
> > > got it.
> > >
> > > it is marked: MICROSWITCH 15PA19 LAMP CHANGER
> > >
> > >
> > > where to buy this, or similar?
> >
> That tool is also known as a Neuses N-553A. Available from Neuses via
> Google. Works for 327, 328 and similar bulbs.
>
> W4ZCB

Suggestion re lamp remover.
I have somwhere a tool that was used to remove the small (about one quarter inch diam) cigar/tubular shaped telephone switchboard lamps.
Basically it was split metal tube, with a wooden handle. The two 'halves' of the metal tube were tightened slightly by a pushing an angled lever. Thus lamp could be withdrawn straight out.
Similar idea, of correct dimensions, might work for say dial lamps which are bulb shape and either screwed into miniature Edison or given a quarter turn into bayonet socket.
Someone such as Bill Turner may even have made such an item? Hard plastic tubing might be an alternative to metal?
Terry.

3374. Quadrature mixing from 2xLO PLL?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 14:22:58 UTC
From: MattH <NOSPAMYhensonator@yahoo.com>
Message-ID: <70776513dd4977b7b6d2dd2e1de1228c@news.1usenet.com>
Source record: 26461

Hi group,
An associate is proposing a mixer design that I'm having a hard time understanding. I did some Google searching and haven't found an answer, so perhaps some kind sould can help.

The basic porposal is to generate a clock at twice the LO frequency, divide it by two and use some sort of differential mixer circuit. This is for wideband (broadcast) FM reception. He says that the key is the use of differential circuits within the mixer. Of course, this is intended to be used with quadrature demodulation.

Sitting down and thinking about it, I could see how it would work if one were to take the rising edges of the 2X LO clock for one phase and the falling edges for the 90d phase, but it seems like doing it that would way would likely result in the I+Q not being perfectly orthagonal due to things like different delays in rising vs falling edge logic, imperfect duty cycle, etc. And even then it wouldn't need to be differential.

Well, if anyone has a suggestion for a mixer architecture that does what he says (ie uses 2x LO clock and requries differential circuitry) then I'd appreciate the help.
Regards,
Matt

3375. Re: Radio control transmitter - interference problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 16:02:00 UTC
From: pvenkman@hotmail.com
Message-ID: <791aa995.0404260802.88cee3d@posting.google.com>
Source record: 26462

Tim Wescott <tim@wescottnospamdesign.com> wrote in message
news:<108ihggfahkae3@corp.supernews.com>...
> P. Venkman wrote:
>
> > Tim Wescott <tim@wescottnospamdesign.com> wrote in message
news:<108gpe9afm1e59a@corp.supernews.com>...
> >
> >>P. Venkman wrote:
> >>
> >
> > <SNIP>
> >
> >
> > Is there any way to make this work?
>
> Not without more information, which was why I suggested a test.
>
> Did you do the range check against the other transmitters with the TX
> antenna collapsed? If so, then you've done a fine test of how well your
> TX will work compared to others -- with everyone's antennas are
> collapsed. If you normally fly it with the antenna _out_ then you need
> to test it that way, and find some other way of attenuating the signal
> to the receiver -- like rolling up _it's_ antenna.
>
> You obviously have a problem with that particular TX, which is why I'm
> suggesting a look at the TX first. Another question you can ask is does
> the TX have the same problem with other receivers? On other
> frequencies? Do you have another plane with a different brand receiver,
> or a buddy with same, that you can try at the problem site? This may be
> a valid thing to try.

I've done the range check with the antenna in; under normal
circumstances the range is further than I can see with the antenna
out. I can try rolling up the receiver antenna.

I've tried the transmitter with 5 different receivers (4 different
brands) on 5 different frequencies, all with the exact same problem.

At one point I had two different receivers (different brands) on the
same frequency turned on, and when they glitched they both glitched in
exactly the same way (rudder went hard right on both models, for
example). This isn't proof, but in general you wouldn't expect two
receivers to glitch in exactly the same way if the problem is
interference at the receiver.

3376. Re: Radio control transmitter - interference problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 16:11:33 UTC
From: pvenkman@hotmail.com
Message-ID: <791aa995.0404260811.bb3d324@posting.google.com>
Source record: 26463

"Harold E. Johnson" <W4ZCB@mchsi.com> wrote in message
news:<vIbic.12068$IW1.760683@attbi_s52>...
> > Lots of other people fly at the same location with a variety of
> > equipement with no trouble. I've flown a variety of different gliders
> > there with my old transmitter and never had a problem. I really don't
> > think there's a conflicting 72 MHz signal.
> >
> > It really is just this transmitter at this particular site - other
> > transmitters at the same site are fine, and this transmitter at other
> > sites is just fine.
> >
> > Is there any way to make this work?
>
> You didn't say, but if that "military site" is an airport, there's a
> localizer beacon that's probably just off the end of the runway and is on 75
> MHz. Could readily be strong enough to give your receiver trouble.
>
> W4ZCB

It's not an airport, but who knows what they have blasting away on any
number of frequencies. I don't have the equipment to check it out.

3377. Re: Radio control transmitter - interference problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 16:29:57 UTC
From: pvenkman@hotmail.com
Message-ID: <791aa995.0404260829.56f6aaef@posting.google.com>
Source record: 26464

See answers in line:

dougmc@frenzy.com (Doug McLaren) wrote in message
news:<gpeic.16349$NR5.15547@fe1.texas.rr.com>...
> In article <791aa995.0404221502.39000ca4@posting.google.com>,
> P. Venkman <pvenkman@hotmail.com> wrote:
>
> | I have problems with this transmitter at one particular flying site
> | that's right next to a military base. The xmitter is fine at other
> | locations, and all the gliders respond just fine to my 'old' xmitter
> | at this site. I've done a bunch of things and it really is just the
> | new xmitter at this particular flying site.
>
> You haven't actually told us what the problem is.
>
> Is the computer in your transmitter crashing? (interfering with the transmitter)
> Are the servos in your plane jittering? (interfering with the receiver)
> Are you seeing reduced range or something? (interfering with the receiver)

The computer doesn't crash; the servos jitter badly; range is reduced
to zero, as the jittering starts immediately.

I know reading this you're going to think it's the reciever, but
please read through my other posts. It's not. I've tried 5 different
recievers (4 brands) on different frequencies, and with my old
transmitter all are fine and with the new transmitter they all glitch.
However, it's only at this particular site - anyplace else all the
receivers are glitch-free with the new transmitter.

>
> | It seems like there must be an interference problem with some signal
> | being broadcast from the military base. I've tried to shield the
> | transmitter without much improvement. That makes me think the
> | offending signal may be coming in through the antenna.
>
> We'll need to know what the actual problem is. Shielding your
> transmitter isn't going to do much unless the interference is actually
> affecting your transmitter (possible, but unlikely) rather than your
> receiver.
>
> | Being relatively naive electronically, it seems like I could simply
> | insert a filter between the antenna and the rest of the transmitter
> | that passes through the 72 MHz signal but blocks everything else.
>
> If the problem is interference to your receiver, doing this at your

> transmitter won't help at all. You'd need to do it at the receiver.
>
> Some people have had good luck simply wrapping their receiver (just
> the receiver, not the antenna) in tin foil. Twisting the servo and
> power wires round and round can also help reduce interference to the
> receiver as well, and you can get chokes to wrap your servo wires
> around as well.

Tried all of this; no help.

>
> Very very few people put additional filters on their R/C receivers.
>
> Are there any pager towers nearby? Pager companies use the spaces
> between the R/C channels to talk to pagers, and can use hundreds of
> watts -- this has definately been known to overload R/C receivers and
> crash planes. (In that case, the fix would be to 1) do the tin
> foil/choke thing and 2) try a different frequency. (Your transmitter
> is synthesized, so all you need is a new receive crystal.)

No pager towers, at least that I'm aware of. However the military
base has a large number of antennas and who knows what they're
broadcasting.

>
> | However, I'm smart enough to know I'm not that smart.
>
> That's a pretty good sort of smart to be! :)
>
> | Is it as simple as finding a filter that passes 72 MHz along and
> | splicing it in to the wire going to the antenna?
>
> Probably not, unless your problem really is with the transmitter
> computer crashing.

Well, the computer doesn't crash. I finally ran into another guy at
this site flying with an Evo; he had the crystal instead of the synth
version, and he had no trouble at all. I'm working on getting a
crystal module to try.

>
> Which receiver are you using? The cheap park flier ones don't handle
> interference well at all.

I've tried two Airtronics, an old RCD (they're Hitec now), a JR, and
an FMA M5. With the old transmitter (an Airtronics) they're all fine;
anyplace but that site they're all fine with the new transmitter too.
Try the new transmitter at that site, and they ALL glitch.

>
> Do other people fly at this site? Your radio should be able to talk
> to any plane, so try switching frequencies and picking the proper
> shift and see if you can do a proper range check with their plane.

> (Or another plane if you have more.)

This is a pretty popular site. I've seen lots of people flying lots of different types of equipement at this site with no problems. I've flown four different planes there with the old transmitter with no problem.

>
> You might also try asking in rec.models.rc.air, though they'll
> probably tell you the same things I did.

I've asked a variety of places without much luck. Mostly it's been a pattern of demonstrating I've tried all the reasonable things and it's not a problem with the reciever, followed by suggestions that I either just get another radio or fly at a different site. Neither of those 'solutions' are appealing, so I was hoping someone on this site (being more technically knowledgable) might have a better idea.

BTW, I completely understand why people think it's the receiver to start with. It practically always is. I tried three different recievers myself before I finally started to think just maybe it was the transmitter.

>
> (And yes, I fly R/C too.)

3378. Re: Radio control transmitter - interference problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 16:38:02 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <108qen0go4k60da@corp.supernews.com>
Source record: 26465

P. Venkman wrote:

> Tim Wescott <tim@wescottnospamdesign.com> wrote in message
news:<108ihggfahkae3@corp.supernews.com>...
>
>>P. Venkman wrote:
>>
>>
>>>Tim Wescott <tim@wescottnospamdesign.com> wrote in message
news:<108gpe9afm1e59a@corp.supernews.com>...
>>>
>>>
>>>>P. Venkman wrote:
>>>>
>>>
>>><SNIP>
>>>
>>>
>>>Is there any way to make this work?
>>
>>Not without more information, which was why I suggested a test.
>>
>>Did you do the range check against the other transmitters with the TX
>>antenna collapsed? If so, then you've done a fine test of how well your
>>TX will work compared to others -- with everyone's antennas are
>>collapsed. If you normally fly it with the antenna _out_ then you need
>>to test it that way, and find some other way of attenuating the signal
>>to the receiver -- like rolling up _it's_ antenna.
>>
>>You obviously have a problem with that particular TX, which is why I'm
>>suggesting a look at the TX first. Another question you can ask is does
>>the TX have the same problem with other receivers? On other
>>frequencies? Do you have another plane with a different brand receiver,
>>or a buddy with same, that you can try at the problem site? This may be
>>a valid thing to try.
>
>
> I've done the range check with the antenna in; under normal
> circumstances the range is further than I can see with the antenna
> out. I can try rolling up the receiver antenna.
>
> I've tried the transmitter with 5 different receivers (4 different
> brands) on 5 different frequencies, all with the exact same problem.
>

> At one point I had two different receivers (different brands) on the
> same frequency turned on, and when they glitched they both glitched in
> exactly the same way (rudder went hard right on both models, for
> example). This isn't proof, but in general you wouldn't expect two
> receivers to glitch in exactly the same way if the problem is
> interference at the receiver.

If two receivers are receiving exactly the same interference at exactly the same time they may glitch the same way.

Since it's a synthesized module and should be easy to do, have you tried it on a different frequency (with appropriate RX, of course)? Obviously something screwy is going on, if it's limited to one frequency you may be able to just switch to a more benign frequency and have fun.

You could switch to flying control line, but that gets difficult with gliders.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

3379. Re: How to Short Circuit Diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 16:52:23 UTC
From: songoku_@ig.com.br
Message-ID: <9ec5b8a8.0404260852.50ee9601@posting.google.com>
Source record: 26466

Thank you all!!

3380. Re: i should speak too loudly into the mic to get more output power!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 19:47:35 UTC
From: chafik.philo@eudoramail.com
Message-ID: <cacbc942.0404261147.1ddf1dea@posting.google.com>
Source record: 26467

"Highland Ham" <xygm0csz.wvkn6wh@ntlworld.com> wrote in message
news:<NHLic.55$zc3.40@newsfe1-win>...
> > >i have IC706MKII whith original Mic
> > >i should speak too loudly into the mic to get more output power on SSB!
> > >So i disturb XYL and my own helth!
> > >Any alternative please
> > >CN8JV From MORROCO
> >
> > Increase the microphone gain setting.
> --
> If mic gain potmeter is already max. ,I can send you some circuit diagrammes
> for a homebrew mic amplifier with readily available components.
>
> Frank GM0CSZ / KN6WH

tnx very very much Frank
I really need some circuit diagrammes
for a homebrew mic amplifier,because
the mic gain potmeter is already max.
My email adress is on QRZ.COM
I hope to meet you on air to thank you
once again.
73
Chafik CN8JV

3381. Re: 4 pin VRs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 20:12:14 UTC
From: "G.Beat" <now9spamgb@no.comcast.spam.net>
Message-ID: <y2ejc.42104$w96.3140443@attbi_s54>
Source record: 26468

"Lou" <FFSTA17NO@SPAMACCESS995.COM> wrote in message
news:WFWic.3401$WC3.34530@ord-read.news.verio.net...
> I've been looking for a 4 pin voltage regulator. I have a particular
> number
> in mind (uA78HG), but so far as I know, they're not in production anymore.
> I've looked in a couple places on line for a 4 pin job, with no luck.
> Since
> the one I "need" seems to be gone for good, right now I'm willing to use
> any
> 12 vdc - 15 vdc 1 Amp or more voltage regulator to get my power supply
> going
> to any extent - rather than leaving it collect dust or tearing it apart.
>
> Failing finding a VR of my needs, I guess I'll have to redesign this thing
> to work some other way. I thought a last minute search may produce
> something
> to make life easier. Any ideas? With all the crap I have here, I could
> build
> a few power supplies (probably). But never ever - do I have the part "I"
> need.
>
> Lou
>

MicroPac is listing their part number 52150/52175 as a replacement for 78HGA
http://www.micropac.com/pdf/products/VR52150-52175.pdf

MicroPac's statement on obsolescence:
Due to the many problems our industry is dealing with today due to
obsolescence issues, and the decisions made by many of our competitors to
exit the military marketplace, Micropac Industries, Inc. want to take this
opportunity to assure our valued customers that we will continue to support
their requirements for high-reliability products. Our Company has no
intention of making obsolete any currently produced devices. Our charter is
to continue to support our customers with the same quality products as we
have successfully produced for more that three (3) decades.

That should work !

Greg

3382. DCTL Antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 20:56:44 UTC
From: jason_hsu@my-deja.com
Message-ID: <f7d9a152.0404261256.71e27686@posting.google.com>
Source record: 26469
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

The DCTL Antenna design is at http://www.n5nw.org/antennas.html

The MFJ magnetic loop antennas are quite expensive and don't cover the low bands. Homebrewing magnetic loop antennas is very tricky due to the need for WELDED connections and special capacitors that can handle thousands of volts. These tricky issues probably explain why magnetic loop antennas are so expensive. (I'm also surprised that MFJ doesn't make a larger version of the magnetic loop antennas for 80m that's perhaps 6 feet wide and long.)

The DCTL Antenna is a loop antenna made out of twin lead, and it has received rave reviews. From what I've heard, it performs well compared to other antennas of a similar size. (Obviously, it can't be as good as a full-size loop or dipole.) I believe the DCTL Antenna uses the shorted stub and open stub as loading capacitors. It's not as small as the magnetic loop antennas (4-foot wide square for 40m instead of 3-foot wide loop), but that allows the DCTL to have more radiation resistance (so that welded connections aren't needed).

Has anyone here constructed and used a DCTL Antenna? Some questions:
1. How seriously is it affected by nearby metal? I know any antenna is affected, but some are affected less than others. For example, monopoles are affected less by nearby metal. This is why apartment dwellers using a
balcony with metal railings are generally advised to use a monopole antenna and use the metal railing as the antenna ground. Mobile antennas are always monopoles instead of dipoles.
2. How do you insulate and reinforce the wires at the feedpoint? I think this could be a mechanical weak spot. Would coax sealer help? Epoxy glue? Perhaps a non-metallic box with holes drilled in for the wires?
3. Could the length of the open stub LC be adjustable to modify the resonant frequency? Perhaps one could put in a connector (Molex, PowerPole, etc.) and then add in a small open stub. Perhaps something similar could be done with the shorted end as well. Perhaps one could add ferrite chokes to electrically (but not mechanically) terminate the stub, as the RF would be mostly on the outer surface of the wires. With these adjustments, it may even be possible to make the antenna multiband. Of course, this would require deviating from the provided formulas.
4. How much feedpoint resistance can one expect from the DCTL? The author suggests using a 6:1 balun. So it sounds like the DCTL Antenna should be about 300 ohms. 300 ohms is about the characteristic impedance of twin lead. But I thought that smaller antennas normally

have feedpoint resistances WELL BELOW 50 ohms, which is an even farther cry from 300 ohms. Or do those stubs work as a matching network as well?

Jason Hsu, AG4DG
personal AAAATTTT jasonhsu.com
http://www.jasonhsu.com/ee.html
http://groups.yahoo.com/group/eeham/
http://groups.yahoo.com/group/resume_hyperinflation_fighters/
http://groups.yahoo.com/group/gmu-ece-control

3383. 250+ degree meter movements?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 21:52:53 UTC
From: Tom Kreyche <tkreyche@well.com>
Message-ID: <Vwfjc.42683$w96.3196919@attbi_s54>
Source record: 26470

Does anyone have sources for analog meter movements that can rotate at least 250 degrees? I'm building a custom rate-of-climb instrument for my glider.

I found one source at http://www.us.yokogawa.com/MI/ but their smallest off-the-shelf unit is a bit large at 50x36mm. It uses taut band technology.

I've been trying to find a source for air-core movments but web searches only show up people selling automobile tachometers. I'd can drive the meter with PWM or DAC or whatever.

Thanks, Tom

3384. Re: Radio control transmitter - interference problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 22:25:31 UTC
From: pvenkman@hotmail.com
Message-ID: <791aa995.0404261425.4402c452@posting.google.com>
Source record: 26471

Tim Wescott <tim@wescottnospamdesign.com> wrote in message
news:<108qen0go4k60da@corp.supernews.com>...
> P. Venkman wrote:
>
> > Tim Wescott <tim@wescottnospamdesign.com> wrote in message
news:<108ihggfahkae3@corp.supernews.com>...
> >
> >>P. Venkman wrote:
> >>
> >>
> >>>Tim Wescott <tim@wescottnospamdesign.com> wrote in message
news:<108gpe9afm1e59a@corp.supernews.com>...
> >>>
> >>>
> >>>>P. Venkman wrote:
<SNIP>
> >
> > I've tried the transmitter with 5 different receivers (4 different
> > brands) on 5 different frequencies, all with the exact same problem.
> >
> > At one point I had two different receivers (different brands) on the
> > same frequency turned on, and when they glitched they both glitched in
> > exactly the same way (rudder went hard right on both models, for
> > example). This isn't proof, but in general you wouldn't expect two
> > receivers to glitch in exactly the same way if the problem is
> > interference at the receiver.
>
> If two receivers are receiving exactly the same interference at exactly
> the same time they may glitch the same way.

Possible; however, they were different brands and different circuits,
and it's less likely that some random interference would cause them to
act the exact same way. The same brand wouldn't surprise me.

>
> Since it's a synthesized module and should be easy to do, have you tried
> it on a different frequency (with appropriate RX, of course)? Obviously
> something screwy is going on, if it's limited to one frequency you may
> be able to just switch to a more benign frequency and have fun.

I've tried 5 different frequencies; all act the same way.

>
> You could switch to flying control line, but that gets difficult with
> gliders.

I think at that point it becomes a kite!

3385. Re: 250+ degree meter movements?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 22:33:45 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <108r3huc3s8q4f9@corp.supernews.com>
Source record: 26472

Tom Kreyche wrote:

> Does anyone have sources for analog meter movements that can rotate at least
> 250 degrees? I'm building a custom rate-of-climb instrument for my glider.
>
> I found one source at http://www.us.yokogawa.com/MI/ but their smallest
> off-the-shelf unit is a bit large at 50x36mm. It uses taut band technology.
>
> I've been trying to find a source for air-core movments but web searches
> only show up people selling automobile tachometers. I'd can drive the meter
> with PWM or DAC or whatever.
>
> Thanks, Tom
>
>

So what's the matter with an automobile tach? They're all electronic
these days, so you drive them with a pulse train who's frequency is
proportional to the reading you want to see.

12000 feet = 12000 RPM (assume you can get one that high) = 200 rev/sec
= 400 pulse/sec for a 4-banger.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

3386. Re: 250+ degree meter movements?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 22:40:14 UTC
From: jgboyles@aol.com
Message-ID: <20040426184014.22258.00000194@mb-m01.aol.com>
Source record: 26473

>Does anyone have sources for analog meter movements that can rotate at least
>250 degrees? I'm building a custom rate-of-climb instrument for my glider.

No I don't, but could you not turn a zero-center analog meter on it's side and
get rate-of-climb, or drop information.
73 Gary N4AST

3387. Re: 250+ degree meter movements?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 23:39:03 UTC
From: "G.Beat" <now9spamgb@no.comcast.spam.net>
Message-ID: <r4hjc.26658$cF6.1164314@attbi_s04>
Source record: 26474

"Tom Kreyche" <tkreyche@well.com> wrote in message
news:Vwfjc.42683$w96.3196919@attbi_s54...
> Does anyone have sources for analog meter movements that can rotate at
> least
> 250 degrees? I'm building a custom rate-of-climb instrument for my glider.
>
> I found one source at http://www.us.yokogawa.com/MI/ but their smallest
> off-the-shelf unit is a bit large at 50x36mm. It uses taut band
> technology.
>
> I've been trying to find a source for air-core movments but web searches
> only show up people selling automobile tachometers. I'd can drive the
> meter
> with PWM or DAC or whatever.
>
> Thanks, Tom

Tom -

Well you referenced one of the 6 major meter mfg.

The other 5 are:

Hoyt Instrument (New Hampshire)
Largest produced of analog meter movements
http://www.hoytmeter.com/

Simpson Electric (Illinois)
http://www.simpsonelectric.com

Beede (New Hampshire)
Beede has a 250 degree model line
http://www.beede.com

Jewell Instruments (Modutec brand name)
http://www.jewellinstruments.com/

Triplett (Ohio)
http://www.triplett.com

w9gb

3388. FA"Parts + CQ, WST mags +++

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-26 23:40:10 UTC
From: Heytubeguy <heytubeguy@worldnet.att.net>
Message-ID: <u5hjc.48510$um3.951148@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26475

Have parts + CQ and QST old mags listed at:

http://cgi6.ebay.com/ws/eBayISAPI.dll?ViewSellersOtherItems&userid=heytubeguy&completed=0&sort=3&since=-1&include=0&page=1&rows=25

Will have older 20's and 30's QST's shortly-not all complete years however.
Tnx heytubeguy

3389. Re: i should speak too loudly into the mic to get more output power!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-27 02:18:01 UTC
From: Eddie Haskel <wiseguy@clever.com>
Message-ID: <tpjjc.41447$87.26758@newssvr29.news.prodigy.com>
Source record: 26476

This has got to be a graduate from the "Gordon West" School of
Broadcasting!!!!

"chafik CN8JV" <chafik.philo@eudoramail.com> wrote in message
news:cacbc942.0404240201.3d3bfc17@posting.google.com...
> Hello
> i have IC706MKII whith original Mic
> i should speak too loudly into the mic to get more output power on SSB!
> So i disturb XYL and my own helth!
> Any alternative please
> CN8JV From MORROCO

3390. Re: Radio control transmitter - interference problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-27 07:16:38 UTC
From: Roger Conroy <rogerconroy@nospam.hotmail.com>
Message-ID: <c6l1e8$90j$1@ctb-nnrp2.saix.net>
Source record: 26477

"P. Venkman" <pvenkman@hotmail.com> wrote in message
news:791aa995.0404221502.39000ca4@posting.google.com...
> This is somewhat off topic; I apologize, but it seems like the people
> that hang out here might actually be able to help me with my problem.
>
> I fly radio control gliders. I recently purchased a new transmitter
> (a Royal Evo 9 with synth module, for those that might care). I'm in
> the US so this broadcasts on 72MHz.
>
> I have problems with this transmitter at one particular flying site
> that's right next to a military base. The xmitter is fine at other
> locations, and all the gliders respond just fine to my 'old' xmitter
> at this site. I've done a bunch of things and it really is just the
> new xmitter at this particular flying site.
>
> It seems like there must be an interference problem with some signal
> being broadcast from the military base. I've tried to shield the
> transmitter without much improvement. That makes me think the
> offending signal may be coming in through the antenna.
>
> Being relatively naive electronically, it seems like I could simply
> insert a filter between the antenna and the rest of the transmitter
> that passes through the 72 MHz signal but blocks everything else.
> However, I'm smart enough to know I'm not that smart. That's why I'm
> here.
>
> Is it as simple as finding a filter that passes 72 MHz along and
> splicing it in to the wire going to the antenna? Is that likely to
> cause other problems (transmitting on the wrong frequency, overheating
> the RF module due to impedance mismatch, sudden death)? Assuming I
> can't find a filter that passes along precisely the frequency I want,
> is it OK to put filters in series (like a high-pass plus a low-pass)?
> And finally, am I just totally missing the boat here with this idea?
> I'm open to other suggestions.

Here's an idea. How about talking to the senior radio technician on the
military base? Just maybe he/she would have the answer.

73
Roger ZR3RC

3391. Re: soldering with a lighter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-27 09:21:54 UTC
From: Highland Ham <xygm0csz.wvkn6wh@ntlworld.com>
Message-ID: <hpujc.133$wK2.4@newsfe5-gui.server.ntli.net>
Source record: 26485

> [snip]
> It really puts out a good strong,
> tight flame. It wasn't as precise as I would have liked, but it was
plenty
> hot and got the job done with only a few charred edges on the connector
that
> I was repairing. I tinned the free wire away from everything else, left a
> small mouton blob hanging, quickly got it close to the multi-pin connector
> where it had to go, and hit the connector very quickly with the flame. It
> makes me wonder if a decent-quality little torch wouldn't be good for more
> soldering jobs, especially on thick parts.
==========
For many years I have used and still use a micro-torch with a well
controlable 'pointy' flame.
Last night I fitted a BNC plug and soldered the centre pin with the 'pointy'
flame' ,which I find easier than with the bit of a normal soldering iron.
Also desoldering is sometimes quicker with the micro-torch than with a
normal soldering iron, because of the instant high level of 'spot' energy.

For info of UK based readers : I use the Flame Master micro-torch available
from Maplin.

Frank GM0CSZ / KN6WH

3392. Re: Radio control transmitter - interference problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-27 09:30:50 UTC
From: Highland Ham <xygm0csz.wvkn6wh@ntlworld.com>
Message-ID: <ipujc.134$wK2.14@newsfe5-gui.server.ntli.net>
Source record: 26486

> Here's an idea. How about talking to the senior radio technician on the
> military base? Just maybe he/she would have the answer.
==========
Or borrow a handheld scanning receiver. It could well be that a nearby
transmitted signal ,not necessarily on or near 'your ' transmitted frequency
affect the RC receiver (which probably has limited immunity in respect of
strong harmonics/mixing sigs.)

Frank GM0CSZ / KN6WH

3393. Re: DCTL Antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-27 09:38:00 UTC
From: remove_ok1sip@atlas.cz
Message-ID: <5f5159fa.0404270138.c5233b9@posting.google.com>
Source record: 26478
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

jason_hsu@my-deja.com (Jason Hsu) wrote in message
news:<f7d9a152.0404261256.71e27686@posting.google.com>...

Hi Jason,
I tried to make a DCTL antenna for 80 m from a 300 ohm TV twinlead.
Unfortunately, after I made some measurements, a strom approached and
I put the antenna down. I have never continued the experiments since
then.

> 1. How seriously is it affected by nearby metal?
Sorry, no experience.

> 2. How do you insulate and reinforce the wires at the feedpoint?
I used several layers of adhesive tape only, as it was a temporary
experimental installation. A better construction seems to be necessary
for long-term usage. One proposal is at
http://www.radiohc.org/Distributions/Dxers/dctl-antenna.html

> 3. Could the length of the open stub LC be adjustable to modify the
> resonant frequency?
The antenna is "fine-tuned" by the open stub. The formula given in
http://www.n5nw.org/antennas.html works quite well.

> 4. How much feedpoint resistance can one expect from the DCTL? The
> author suggests using a 6:1 balun. So it sounds like the DCTL Antenna
> should be about 300 ohms. 300 ohms is about the characteristic
> impedance of twin lead.
Despite that, the RF-1 bridge showed approx. 150 ohm impedance around
resonance. Maybe it is always one half of the characteristic impedance
of the twinlead used ? And remember, the input of the antenna is
balanced.

Some more links:
http://www.io.com/~n5fc/dctl_ant.htm
http://www.radiohc.org/Distributions/Dxers/dctl-antenna.html

73 Ivan OK1SIP

3394. Re: Radio control transmitter - interference problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-27 09:40:00 UTC
From: Lou <FFSTA17NO@SPAMACCESS995.COM>
Message-ID: <QTpjc.3459$WC3.38683@ord-read.news.verio.net>
Source record: 26479

Might be kind of tough to pin down. IF they're using H.F. and probably up into the GHz region and maybe even as low as the L.F. area to transmit, any one of those transmitters OR a harmonic OR a clashing of all or any - could be causing the problem. Given he said Crystal control planes work there but not Synthesized units and given he said the planes operate ok elsewhere, leads me to believe that the synthesized receiver (all of those he has tried) is coming unlocked due to RF overload from something. Synthesized receivers are nice, but they do have their draw backs. I've had battles with them too in tight RF areas. Some places, a crystal IS better. Antiquated maybe, but if it works, what the hell..... Just my opinion. I'm not an RF engineer, but work around RF a lot. I've seen lots of weird stuff.

Lou

"Roger Conroy" <rogerconroy@nospam.hotmail.com> wrote in message news:c6l1e8$90j$1@ctb-nnrp2.saix.net...
>
> "P. Venkman" <pvenkman@hotmail.com> wrote in message
> news:791aa995.0404221502.39000ca4@posting.google.com...
> > This is somewhat off topic; I apologize, but it seems like the people
> > that hang out here might actually be able to help me with my problem.
> >
> > I fly radio control gliders. I recently purchased a new transmitter
> > (a Royal Evo 9 with synth module, for those that might care). I'm in
> > the US so this broadcasts on 72MHz.
> >
> > I have problems with this transmitter at one particular flying site
> > that's right next to a military base. The xmitter is fine at other
> > locations, and all the gliders respond just fine to my 'old' xmitter
> > at this site. I've done a bunch of things and it really is just the
> > new xmitter at this particular flying site.
> >
> > It seems like there must be an interference problem with some signal
> > being broadcast from the military base. I've tried to shield the
> > transmitter without much improvement. That makes me think the
> > offending signal may be coming in through the antenna.
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> > insert a filter between the antenna and the rest of the transmitter
> > that passes through the 72 MHz signal but blocks everything else.
> > However, I'm smart enough to know I'm not that smart. That's why I'm
> > here.
> >
> > Is it as simple as finding a filter that passes 72 MHz along and
> > splicing it in to the wire going to the antenna? Is that likely to

> > cause other problems (transmitting on the wrong frequency, overheating
> > the RF module due to impedance mismatch, sudden death)? Assuming I
> > can't find a filter that passes along precisely the frequency I want,
> > is it OK to put filters in series (like a high-pass plus a low-pass)?
> > And finally, am I just totally missing the boat here with this idea?
> > I'm open to other suggestions.
>
> Here's an idea. How about talking to the senior radio technician on the
> military base? Just maybe he/she would have the answer.
>
> 73
> Roger ZR3RC
>
>

3395. Re: DCTL Antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-27 09:42:57 UTC
From: remove_ok1sip@atlas.cz
Message-ID: <5f5159fa.0404270142.2ef2e7ed@posting.google.com>
Source record: 26480
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Hi, see my comments in the antenna group.
73 Ivan OK1SIP

3396. Re: QRP & BPL

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-27 12:08:43 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <4lydnfIM6pHP0BPdUSdV9g@ptd.net>
Source record: 26481

"The Eternal Squire" <eternalsquire@comcast.net> wrote in message
news:ypWdncbMYOp6fBDdRVn-ig@comcast.com...
> Hi,
>
> I am not sure who would want to answer this, but I have a question about
> homebrewing. I had been doing it for about a year until I had heard
> about how BPL was going to completely obliterate all possibility of weak
> signal work.
>
> I had therefore stopped my hobby since the start of this year and
> started reading the ARRL articles re BPL's progress through the FCC.
>
> In your regular QRP work, have you or others began experiencing massive
> interference from BPL? Are there still HF bands which will still remain
> worthwhile to use, if so, which ones?
>
> Thanks,
>
> The Eternal Squire
> WA2JAZ

At the moment, BPL deployments are small and few in numbers ... their sphere
of severe interference is therefore limited.

However, with massive, nearly ubiquitous deployments, the interference will
end up being virtually everywhere ... that is the major concern.

73,
Carl - wk3c

3397. Re: DCTL Antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-27 12:12:06 UTC
From: Alexandr Nikolaievitj Onym <a.n.onym@nowhere.tk>
Message-ID: <408E4E16.6065CC77@nowhere.tk>
Source record: 26482
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Jason Hsu wrote:

> The DCTL Antenna design is at http://www.n5nw.org/antennas.html
>
> The MFJ magnetic loop antennas are quite expensive and don't cover the
> low bands. Homebrewing magnetic loop antennas is very tricky due to
> the need for WELDED connections and special capacitors that can handle
> thousands of volts. These tricky issues probably explain why magnetic
> loop antennas are so expensive. (I'm also surprised that MFJ doesn't
> make a larger version of the magnetic loop antennas for 80m that's
> perhaps 6 feet wide and long.)

>
>
> The DCTL Antenna is a loop antenna made out of twin lead, and it has
> received rave reviews. From what I've heard, it performs well
> compared to other antennas of a similar size. (Obviously, it can't be
> as good as a full-size loop or dipole.) I believe the DCTL Antenna
> uses the shorted stub and open stub as loading capacitors. It's not
> as small as the magnetic loop antennas (4-foot wide square for 40m
> instead of 3-foot wide loop), but that allows the DCTL to have more
> radiation resistance (so that welded connections aren't needed).

Er... The dctl IS a magloop. A piece of paper, some elementary formulae
and
a few minutes of thinking might brighetn things up.

The dimensions of the magloop are more or less given out of the pf/m
beteween the twinlead conductors and the dielectricity constant of the
twinlead
material. A "classic" magloop can be any size.

Radiation resistance of the dctl, is, well, smallish to say the least.

>
>
> Has anyone here constructed and used a DCTL Antenna? Some questions:
> 1. How seriously is it affected by nearby metal? I know any antenna
> is affected, but some are affected less than others. For example,
> monopoles are affected less by nearby metal. This is why apartment
> dwellers using a
> balcony with metal railings are generally advised to use a monopole
> antenna and use the metal railing as the antenna ground. Mobile
> antennas are always monopoles instead of dipoles.

The DCTL is not only a magloop, but a magnetical dipole. Magnetic
materials (such as iron) should be kept away! Non-magnetic materials
of course affects, but are not a disaster (given the poor performannce to
start with!).

>
> 2. How do you insulate and reinforce the wires at the feedpoint? I
> think this could be a mechanical weak spot. Would coax sealer help?
> Epoxy glue? Perhaps a non-metallic box with holes drilled in for the
> wires?

Self-wulcanizing rubber tape (bicycle repair kit!).

>
> 3. Could the length of the open stub LC be adjustable to modify the
> resonant frequency? Perhaps one could put in a connector (Molex,
> PowerPole, etc.) and then add in a small open stub. Perhaps something
> similar could be done with the shorted end as well. Perhaps one could
> add ferrite chokes to electrically (but not mechanically) terminate
> the stub, as the RF would be mostly on the outer surface of the wires.
> With these adjustments, it may even be possible to make the antenna
> multiband. Of course, this would require deviating from the provided
> formulas.

The stubs can (and SHOULD, IMHO) be trimmed to get the resonance at
favourable frequency. The dctl is very narrow-band. If You have got a
wide-band SVF dip, the antenna Q is bad!

>
> 4. How much feedpoint resistance can one expect from the DCTL? The
> author suggests using a 6:1 balun. So it sounds like the DCTL Antenna
> should be about 300 ohms. 300 ohms is about the characteristic
> impedance of twin lead. But I thought that smaller antennas normally
> have feedpoint resistances WELL BELOW 50 ohms, which is an even
> farther cry from 300 ohms. Or do those stubs work as a matching
> network as well?

Feedpoint resistance does not equal radiation resistance. From a matching
point of wiev, what interest us is feedpoint impedance. As we use the
dctl also when there is no resonance, I propose it is feed by a balanced
output transmatch (same principle as a "zepp").

The feed impedance is a function of the twinlead feeder length, and the
stubs
(which are used to match the thingamajig). The conclusion is that feed
impedance
is individual and adjustable!

Radiation resistance is LOW, and remember that 300 ohm twinlead is lossy.

A.N. Onym

>
>

> Jason Hsu, AG4DG
> personal AAAATTTT jasonhsu.com
> http://www.jasonhsu.com/ee.html
> http://groups.yahoo.com/group/eeham/
> http://groups.yahoo.com/group/resume_hyperinflation_fighters/
> http://groups.yahoo.com/group/gmu-ece-control

3398. RFI Problem With Lamp

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-27 13:14:35 UTC
From: fazamy@aol.com
Message-ID: <20040427091435.10191.00000439@mb-m14.aol.com>
Source record: 26483

I want to hear from someone who has successfully solved an rfi problem with a lamp that switches on/off with the touch of a hand on a switch. It uses 2 high intensity bulbs that can light at 3 wattage levels at the touch of the hand on the switch. It also has a transformer. I've tried toroids on the ac line to the transformer and away from the transformer. The problem occurs when I'm on 40m.

73,
KB2AMY

3399. Re: RFI Problem With Lamp

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-27 13:50:33 UTC
From: Incognito <BLB@sero.net>
Message-ID: <Kytjc.179$k24.58@fed1read01>
Source record: 26484

The ARRL site has some cures -- see URL;
http://www.arrl.org/tis/info/touchlamp.html

--
Incognito By Necessity (:-(

If you can't convince them, confuse them.
- - -Harry S Truman

"FAZAMY" <fazamy@aol.com> wrote in message
news:20040427091435.10191.00000439@mb-m14.aol.com...
> I want to hear from someone who has successfully solved an rfi problem
with a
> lamp that switches on/off with the touch of a hand on a switch. It uses 2
high
> intensity bulbs that can light at 3 wattage levels at the touch of the
hand on
> the switch. It also has a transformer. I've tried toroids on the ac line
to
> the transformer and away from the transformer. The problem occurs when
I'm on
> 40m.
>
> 73,
> KB2AMY

3400. Re: RFI Problem With Lamp

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-27 15:43:44 UTC
From: Bob <balbert@ecrii.com>
Message-ID: <flidnULwprFV4hPdRVn2gw@ecrii.com>
Source record: 26487

The problem is poor design of the switching system. It uses a triac with duty cycle control of the current. Since it switches the lamp on late in the cycle, there is a big transient each cycle.

It's an old design. I don't know if the newer ones are any better. I would think it had to mee FCC part 15 to be sold; how old is it? Talk to the manufacturer and the FCC to find out if it's still being sold.

About the only thing you can do is shield and filter, but shielding would make the lamp rather useless. If you are concerned about 7 MHz noise then better use filtering components that are effective at that frequency.

73, Bob

3401. Re: RFI Problem With Lamp

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-27 18:17:53 UTC
From: Jeremy Salch <salchNOSPAM@tblx.net>
Message-ID: <c6m86d$dn7pi$1@ID-225834.news.uni-berlin.de>
Source record: 26488

FAZAMY wrote:

> I want to hear from someone who has successfully solved an rfi problem
with a
> lamp that switches on/off with the touch of a hand on a switch. It uses 2
high
> intensity bulbs that can light at 3 wattage levels at the touch of the
hand on
> the switch. It also has a transformer. I've tried toroids on the ac line
to
> the transformer and away from the transformer. The problem occurs when
I'm on
> 40m.
>
> 73,
> KB2AMY

I had the same problem, and the only thing i could do to solve it was to
unplug the lamp.

--
Registered Linux User #346565
http://www.tblx.net
WA5K

3402. Re: 4 pin VRs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-27 18:22:03 UTC
From: Marianne <mdoty@bright.net>
Message-ID: <erOdnc_-sMJSORPdRVn-uQ@bright.net>
Source record: 26489

Lou - I have 3 uA78GU1C 4 pin regulators that I have no use for. No data sheets available, other than from the "pay per view" sites, so I can't do a comparison between the HG and the G series. I don't know where you're located but you can have the 3 regulators I have for a SASE. email me direct at ww2742 AT dragonbbsdotcom.

Mike

"Lou" <FFSTA17NO@SPAMACCESS995.COM> wrote in message news:WFWic.3401$WC3.34530@ord-read.news.verio.net...
> I've been looking for a 4 pin voltage regulator. I have a particular number
> in mind (uA78HG), but so far as I know, they're not in production anymore.
> I've looked in a couple places on line for a 4 pin job, with no luck. Since
> the one I "need" seems to be gone for good, right now I'm willing to use any
> 12 vdc - 15 vdc 1 Amp or more voltage regulator to get my power supply going
> to any extent - rather than leaving it collect dust or tearing it apart.
>
> Failing finding a VR of my needs, I guess I'll have to redesign this thing
> to work some other way. I thought a last minute search may produce something
> to make life easier. Any ideas? With all the crap I have here, I could build
> a few power supplies (probably). But never ever - do I have the part "I"
> need.
>
> Lou
>
>
>

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.670 / Virus Database: 432 - Release Date: 04/27/2004

3403. Re: DDS building blocks....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-27 21:01:47 UTC
From: Ken Finney <kenneth.c.finney@boeing.com>
Message-ID: <HwuL2x.5Er@news.boeing.com>
Source record: 26491

<nospam@nowhere.nil> wrote in message
news:a74c80pu30obd6p72t6l9qjhob3q2dhcl7@4ax.com...
> This is a bit, long but bear with me it is hombrew releated.
>
> I'm one of the principals in a company called NetBurner.
> We build Network enabled CPU modules etc...
>
> The company has some core capabilities,
> PCB design, Fab, SMT Assembly (BGA, 0402's) ,
> Order processing, order fufilment UPS shipping etc...
>
> As a ham and an engineer that likes to build things
> I'm frustrated with some of todays finer pitch SMT technology.
>
> I've often contemplated using the business to come out with a line of
> "Hobby" oriented PCB's
> Things like an ADI high end DDS
> Some of the cool direct conversion mixer IC's ...
> Simple switching power supplies...
> Small uP boards (AVR etc...)
> RS-232 level shifters....
> MOSFET full bridge motor drive.
> ADC's
> DAC's
> Audio amp chips...
>
> and so on....
>
> I'm not looking to make any $ on the hobby product line, but I'm not
> looking to loose any $ either.
>
> As a first pass we would build things that I would find fun to play
> with.
>
> The boards would be fully assembled, with a minimal implmentation of
> what ever function they are supposed to do. Nothing fancy, nothing
> extra just modules hobbiests can play with.
> Support would be limited to Schematics and E-Mail.
>
> Since almost all sales would be 1's and 2's cost would be about 4X
> the 100pc component cost.
>
>
> Would one sell any of this stuff?

>
> What sort of modules would you personally buy?
>
>
> Paul (KL7JG)
>
>

I recommend against short-changing yourself, and your Customers.
This will take up your time, and if you don't charge enough, you will
eventually walk away, leaving your Customers stranded. Be fair
to yourself and your Customers by charging enough to compensate
for your time.

3404. Re: 250+ degree meter movements?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-27 21:07:51 UTC
From: Tom Kreyche <tkreyche@well.com>
Message-ID: <HYzjc.53900$aQ6.3990975@attbi_s51>
Source record: 26490

Thanks for the comprehensive list. Turns out most vendors build to order only, so I'll probably look at tearing something apart to get a movement.

Tom

>
> The other 5 are:
>
> Hoyt Instrument (New Hampshire)
> Largest produced of analog meter movements
> http://www.hoytmeter.com/
>
> Simpson Electric (Illinois)
> http://www.simpsonelectric.com
>
> Beede (New Hampshire)
> Beede has a 250 degree model line
> http://www.beede.com
>
> Jewell Instruments (Modutec brand name)
> http://www.jewellinstruments.com/
>
> Triplett (Ohio)
> http://www.triplett.com
>
> w9gb
>
>

3405. Re: Making RF Chokes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-27 22:02:31 UTC
From: songoku_@ig.com.br
Message-ID: <9ec5b8a8.0404271402.624690a2@posting.google.com>
Source record: 26492

Hello,
Actually, the RF Chokes will act just as filters. I'll drow the
schematic in the computer and send you, if you allow.
The transmitter will work at 88MHz - 110MHz.
The oscillators are made from 18 AWG wire, 8mm of diameter, 4 - 5
turns.

Thanks

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0404082351.4d3bd714@posting.google.com>...
> songoku_@ig.com.br (Hayato) wrote in message
news:<9ec5b8a8.0404080748.23406f90@posting.google.com>...
> > Hello,
> > I'm building a FM Tx and I'm having some problems to find 100uH RF Chokes here.
> > So I decide to wind a 100uH air-core inductor, is there any problems on that?
> > My inductor especifications are:
> > -Wire: AWG 24.
> > -Core diameter: 35 mm.
> > -Spires: 48, 2 layers of 24 spires each.
>
> You didn't say what frequency the choke will be used for, nor where in
> the circuit. But it seems like 100uH is quite a large inductance for
> the usual FM frequencies. Winding the choke as two layers will lower
> the self-resonant frequency a lot. Even with a very carefully
> designed 100uH choke, it will be very difficult to get the
> self-resonant frequency up in the 100MHz region. And at 100MHz, 100uH
> would give you 62kohms reactance (if you could actually construct it
> with high enough self-resonant frequency), which would be more than
> you would need in any 100MHz circuit I can think of. If it's a
> low-impedance solid state circuit, 100nH might be enough!
>
> Please tell us more. What current do you need to pass in this choke?
> How is it used in the circuit? What frequency will it be used at?
>
> Cheers,
> Tom

3406. Re: QRP & BPL

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-27 23:57:20 UTC
From: "Dee D. Flint" <deeflint01@comcast.net>
Message-ID: <276dneedDt_UbhPd4p2dnA@comcast.com>
Source record: 26493

"The Eternal Squire" <eternalsquire@comcast.net> wrote in message
news:ypWdncbMYOp6fBDdRVn-ig@comcast.com...
> Hi,
>
> I am not sure who would want to answer this, but I have a question about
> homebrewing. I had been doing it for about a year until I had heard
> about how BPL was going to completely obliterate all possibility of weak
> signal work.
>
> I had therefore stopped my hobby since the start of this year and
> started reading the ARRL articles re BPL's progress through the FCC.
>
> In your regular QRP work, have you or others began experiencing massive
> interference from BPL? Are there still HF bands which will still remain
> worthwhile to use, if so, which ones?
>

BPL hasn't happened yet on any type of widespread basis. So far there's really only been a few pilot programs in limited areas. I wouldn't put the brakes on your QRP work just yet.

In addition, no matter what the marketing hype is, there is a good chance that in many areas it simply won't be economically feasible or that it won't be able to effectively compete against DSL and cable access. Since BPL will be carried over unshielded lines, it will be subject to dropouts from all kinds of interference thus vastly slowing its effective speed, quite possibly below what is available with a simple phone line and dialup service.

Dee D. Flint, N8UZE

3407. MW antenna signal coupling

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-28 01:34:48 UTC
From: amdx <amdx@att.net>
Message-ID: <YSDjc.55191$um3.1067552@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26494

I have an AM radio on an aluminum boat. The radio is shielded on six sides by aluminum. I want to mount an antenna on the boat and run coax inside and couple the signal to the ferrite rod in the radio. I'm thinking about an active whip antenna with a 50 ohm output. If I did this, I would have a coax with 50 source impedance at the radio! How do I create a 50 ohm load at the radio over the AM band? The radio has a 2-3/8" x 3/8" ferrite rod.

I would appreciate any other solutions to get a signal to my radio.

Mike

3408. Re: 4 pin VRs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-28 03:43:47 UTC
From: Lou <FFSTA17NO@SPAMACCESS995.COM>
Message-ID: <TLFjc.3500$WC3.39954@ord-read.news.verio.net>
Source record: 26495

Well, I'd certainly be willing to give em a try. I e-mailed some guy that someone else suggested. He is a real ass hole. His reply was all pretty much jumping down my throat for asking. He asked, "did I think he was in business", "did I think his list was incorrect" - since I had pasted a portion of it in my e-mail "per his web site's instructions - to lead him to the list where the parts were listed." People like that, I don't need to deal with. He has exactly what I need, but he can stick them up his ass. I don't deal with ass holes. I don't need those parts that bad to kiss his or anyone else's ass. I'll be in touch privately.

Thanks,

Lou

"Marianne" <mdoty@bright.net> wrote in message
news:erOdnc_-sMJSORPdRVn-uQ@bright.net...
> Lou - I have 3 uA78GU1C 4 pin regulators that I have no use for. No data
> sheets available, other than from the "pay per view" sites, so I can't do
a
> comparison between the HG and the G series. I don't know where you're
> located but you can have the 3 regulators I have for a SASE. email me
> direct at ww2742 AT dragonbbsdotcom.
>
> Mike
>
> "Lou" <FFSTA17NO@SPAMACCESS995.COM> wrote in message
> news:WFWic.3401$WC3.34530@ord-read.news.verio.net...
> > I've been looking for a 4 pin voltage regulator. I have a particular
> number
> > in mind (uA78HG), but so far as I know, they're not in production
anymore.
> > I've looked in a couple places on line for a 4 pin job, with no luck.
> Since
> > the one I "need" seems to be gone for good, right now I'm willing to use
> any
> > 12 vdc - 15 vdc 1 Amp or more voltage regulator to get my power supply
> going
> > to any extent - rather than leaving it collect dust or tearing it apart.
> >
> > Failing finding a VR of my needs, I guess I'll have to redesign this
thing
> > to work some other way. I thought a last minute search may produce
> something
> > to make life easier. Any ideas? With all the crap I have here, I could
> build

> > a few power supplies (probably). But never ever - do I have the part "I"
> > need.
> >
> > Lou
> >
> >
> >
>
>
> ---
> Outgoing mail is certified Virus Free.
> Checked by AVG anti-virus system (http://www.grisoft.com).
> Version: 6.0.670 / Virus Database: 432 - Release Date: 04/27/2004
>
>

3409. Re: surface mount soldering..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-28 05:02:36 UTC
From: Bob Headrick <bobh@proaxis.com>
Message-ID: <108vh03dfe90j42@corp.supernews.com>
Source record: 26347

"G.Beat" <now9spamgb@no.comcast.spam.net> wrote in message
news:yhPic.30933$aQ6.1632419@attbi_s51...
> "zindazenda" <zen@lineisp.co.uk> wrote in message
> news:1082856532.768434@smtp-1.griffin.com...
> > can anyone recommend at diy way of flow soldering surface mount
> > components??
> > i ask as making somr boards up that are totally sm, and well i am going
> > blind trying to solder them using iron!!

> Here is a link for the "Ez-bake" approach to soldering.
>
> http://www.seattlerobotics.org/encoder/200006/oven_art.htm

That looks like a good way to go, it would sure beat trying to solder individual leads, but... it looks like the minimum order quantity is 10 tubes of solder, for $120 or so. (And these are the small 35g tubes. Digikey's are more like $800 for the minimum qty of 500g tubes.)

Anyone know a source for small quantity (1-3 tubes) purchases?

- 73 Bob W7OV

3410. Re: MW antenna signal coupling

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-28 12:10:42 UTC
From: JLB <IHateSpam@nospam.net>
Message-ID: <VaNjc.1122$EX.414@fe39.usenetserver.com>
Source record: 26496

At this frequency for a receive application the impedance is not very critical.

However, if it would help you sleep at night you can put a 3 dB attenuator at the end of the coax to match the impedance.

For coupling into the receiver, wind a coil of wire big enough to go around the entire receiver. Perhaps 3 or 4 turns would suffice. Then place the receiver inside the coil.

If the signal out of the antenna amplifier is strong enough, you might get away with just setting the receiver next to the coil.

To clarify, the setup would be like this:

Antenna---->amplifier---->Coax---->attenuator---->Coil near receiver.

And if it was me, I wouldn't bother with the attenuator.

--
Jim
N8EE

to email directly, send to my call sign at arrl dot net
"amdx" <amdx@att.net> wrote in message
news:YSDjc.55191$um3.1067552@bgtnsc04-news.ops.worldnet.att.net...
> I have an AM radio on an aluminum boat. The radio is shielded on
> six sides by aluminum. I want to mount an antenna on the boat and
> run coax inside and couple the signal to the ferrite rod in the radio.
> I'm thinking about an active whip antenna with a 50 ohm output. If I
> did this, I would have a coax with 50 source impedance at the radio!
> How do I create a 50 ohm load at the radio over the AM band? The radio
> has a 2-3/8" x 3/8" ferrite rod.
>
> I would appreciate any other solutions to get a signal to my radio.
>
> Mike

3411. Re: surface mount soldering..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-28 17:22:40 UTC
From: Allan Butler <ka0ies@hotmail.com>
Message-ID: <ALRjc.5600$Rd4.566539@attbi_s51>
Source record: 26348

What I have done in the past is to tin the pads where the parts are going to be mounted and then I use two soldering irons. One on each pad and it pulls the part right down into a good position.

Ok ok I hear the question now. What about parts with more than two leads?

That is a valid and good question. Only tin two pads for that part and use the soldering iron on each one of the pads to get the part mounted and in position to finish soldering the rest of the leads one at a time.

3412. Re: MW antenna signal coupling

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-28 18:44:24 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c6ou63$d85$1@newshost.mot.com>
Source record: 26349

"amdx" <amdx@att.net> wrote in message
news:YSDjc.55191$um3.1067552@bgtnsc04-news.ops.worldnet.att.net...
> I have an AM radio on an aluminum boat. The radio is shielded on
> six sides by aluminum. I want to mount an antenna on the boat and
> run coax inside and couple the signal to the ferrite rod in the radio.
> I'm thinking about an active whip antenna with a 50 ohm output. If I
> did this, I would have a coax with 50 source impedance at the radio!
> How do I create a 50 ohm load at the radio over the AM band? The radio
> has a 2-3/8" x 3/8" ferrite rod.
>
> I would appreciate any other solutions to get a signal to my radio.
>
> Mike

Mike,
I didn't do anything but see this and since it didn't work any more,
take the loopstick and some other good parts out of it. A radio my dad left
had an RCA jack taped to the handle. It had about 8 turns of wire wound
around the ferrite loop stick antenna inside the handle. If the "coil
around the whole radio" seems poor, try this. What you do on the other end
of the antenna coax, I can't comment. I have only begun to play with
200-500kHz reception.
--
Steve N, K,9;d, c. i My email has no u's.

3413. Re: 250+ degree meter movements?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-28 20:37:04 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <QBUjc.3954$7X2.1181@newssvr23.news.prodigy.com>
Source record: 26350

Figure out what kind of full scale deflection you need and physical size
then go to a hamfest and you'll probably find a meter or some old boatanchor
with one. Meters generally go for less than $5.00 .
73
Hank WD5JFR
"Tom Kreyche" <tkreyche@well.com> wrote in message
news:Vwfjc.42683$w96.3196919@attbi_s54...
> Does anyone have sources for analog meter movements that can rotate at
least
> 250 degrees? I'm building a custom rate-of-climb instrument for my glider.
>
> I found one source at http://www.us.yokogawa.com/MI/ but their smallest
> off-the-shelf unit is a bit large at 50x36mm. It uses taut band
technology.
>
> I've been trying to find a source for air-core movments but web searches
> only show up people selling automobile tachometers. I'd can drive the
meter
> with PWM or DAC or whatever.
>
> Thanks, Tom
>
>

3414. Calculator RF connection

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-28 21:25:00 UTC
From: Gery Duyck <Gery@duyck-co.be>
Message-ID: <40902134$0$21672$a0ced6e1@news.skynet.be>
Source record: 26351

Does somebody know what would be the best to use to make a wireless connection
between TI-83+ calculators.

It uses a small stereo out jack, probably a stereo FM transmitter won't work.

Any id's ?

73'
ON4GDK, Gery

3415. ladder filters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-28 23:47:32 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <2mXjc.63157$Yw5.27065@bignews4.bellsouth.net>
Source record: 26352

I just got a deal on ebay for 8.3886 mhz crystals (414 pcs for $9.99).
Should be able to make a few good ssb and cw filters out of that!
They look like std microprocessor types (hc49/u holders) though this
isn't a common microprocessor frequency. Guess I'll start with 100pf
coupling caps, any good guess on what the termination resistance might
be? (I'm looking for a bw suitable for ssb, probably about 2.1khz).
Hope this frequency doesn't have any bad mixer products (but I can
always pick either high or low side injection if necessary).

3416. Re: surface mount soldering..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 00:04:16 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1083197058.566258@smtp-1.griffin.com>
Source record: 26353

no..on investugation this looks well abit crap..i cant see how it is going
to work with 100 sm 0805 components..
so anyother ideas..
can one buy flow soldering equipment s/h???
g0zen..
"Allan Butler" <ka0ies@hotmail.com> wrote in message
news:ALRjc.5600$Rd4.566539@attbi_s51...
> What I have done in the past is to tin the pads where the parts are going
> to be mounted and then I use two soldering irons. One on each pad and it
> pulls the part right down into a good position.
>
> Ok ok I hear the question now. What about parts with more than two leads?
>
> That is a valid and good question. Only tin two pads for that part and
use
> the soldering iron on each one of the pads to get the part mounted and in
> position to finish soldering the rest of the leads one at a time.
>

3417. 433MHZ modules followup

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 00:24:29 UTC
From: Joe <nuisancewildlife@nospamearthlink.net>
Message-ID: <1XXjc.16643$e4.4382@newsread2.news.pas.earthlink.net>
Source record: 26354

A week or so ago, I asked for some advice on using these modules to trigger my camera shutter remotely.

I first wanted to thank all who replied. I tried the PLL approach and it seemed to work ok until I connected an 'antenna' to the receiver. That seemed to produce a lot of noise that was able to overcome the PLL at times. I also tried a bandpass filter and had the same problem with noise. I finally broke down and bought the holtek 12D and 12E and have decided that is the optimum solution. The 'antenna' I refer to is just a 15cm piece of 20ga solid copper insulated wire, but it gives me a range of about 30 to 35 meters which is more than I expected.

So I am wondering about antennas. As I said, I am using a single piece of solid copper wire attached directly to the antenna input of the receiver and output of the transmitter. Why don't I need a ground too? I have been reading my radio amateur handbook, and I guess this antenna could be considered a dipole, but the book shows that I should have a ground connection somewhere, ie , like maybe dual conductor wire with one lead to the antenna output or input of the TX or RX, and the other to ground, then bend the tops of the wires at right angles (horizontal) at the right multiple of wavelength.

Any one have any ideas? I guess I am looking to maximize my range now.

TIA,
Joe
KB1KVI

3418. Re: surface mount soldering..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 01:34:13 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <diCdnTkTErhPxg3dUSdV9g@ptd.net>
Source record: 26355

"zindazenda" <zen@lineisp.co.uk> wrote in message
news:1083197058.566258@smtp-1.griffin.com...
> "Allan Butler" <ka0ies@hotmail.com> wrote in message
> news:ALRjc.5600$Rd4.566539@attbi_s51...
> > What I have done in the past is to tin the pads where the parts are
going
> > to be mounted and then I use two soldering irons. One on each pad and
it
> > pulls the part right down into a good position.
> >
> > Ok ok I hear the question now. What about parts with more than two
leads?
> >
> > That is a valid and good question. Only tin two pads for that part and
> use
> > the soldering iron on each one of the pads to get the part mounted and
in
> > position to finish soldering the rest of the leads one at a time.
> >
> no..on investugation this looks well abit crap..i cant see how it is going
> to work with 100 sm 0805 components..
> so anyother ideas..
> can one buy flow soldering equipment s/h???
> g0zen..

Actually, for the occasional prototype, the two-iron method, while a bit
tedious, works. (and while 0402 parts are a bit of a bear, even with my
aging vision I can handle 0805's and 0603's with this method ... but it
takes time and patience and I don't like to do a *lot* of parts that way)

You can also, with a bit of practice and care, use a "heat gun" to reflow
boards if you don't envision doing enough of it to justify the cost of
"real" reflow equipment.

I purchased a very nice and effective hot-air system for about $350 new on
e-bay (search on "reflow" - the brand I bought is "ATTEN" and it's
distributed by a company called "smtpros" if I recall correctly) ... and
I've also purchased a toaster oven for the "ez-bake" method ... do a search
on Google or Yahoo and you will find a Yahoo group on "ez-bake" with a long
thread of useful and informative discussion and hints.

Remember, for reflow you need solder *paste* ... available from a number of
sources on the web. I prefer the "no clean flux" kind, though I usually
clean the boards afterwards anyway ...

73,
Carl - wk3c

3419. Re: surface mount soldering..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 04:40:00 UTC
From: Allan Butler <ka0ies@hotmail.com>
Message-ID: <zG%jc.11390$RE1.1152477@attbi_s54>
Source record: 26356

zindazenda wrote:

> no..on investugation this looks well abit crap..i cant see how it is going
> to work with 100 sm 0805 components..
> so anyother ideas..
> can one buy flow soldering equipment s/h???
> g0zen..

Sir:

From necessity I did this with well over 500 parts on two assemblies for radios that were prototypes. The people that had tried to do the assembly with the approved methods had set the solder paste on the pads, placed the parts in postion, both steps done by hand and then washed the boards before they vapor phased the boards. This department then went ahead and cleaned the filters out of the washing equipment, repasted the boards and just put the parts where they fit.

I got two blank boards and all the parts sorted out into envelopes in tote pans with clean prints of the parts list and a component layout with the task set to get it done in a certain amount of time.

Monday through Saturday I worked 16 hour days and then on Sunday I took it easy and worked 12 hours.

In addition to the surface mount parts I also had about the same number of leaded parts on each board.

When I was done I was told that there were a total of 5 errors between the two boards. It took about 2 to 3 weeks to accomplish this and several sets of batteries for headset radio.

There were times I would place parts on the bench in front of me, put the envelope back into the tote pan and could not see the parts. I would find them after blinking several times, place them and then get up to take a walk through the area to get things loosened up and relaxed a little bit.

This method I described is indeed a possible method. It has been done by others than myself and sometimes it is the most expedient method to accomplish the task.

The smallest parts available would make this method a challenge but it would still be something that could be done with some time and paitence.

Good luck on your project and I wish you the best Sir.

3420. Re: surface mount soldering..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 06:40:27 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <SguIFKBbNKkAFArZ@ifwtech.co.uk>
Source record: 26358

zindazenda wrote:
>no..on investugation this looks well abit crap..i cant see how it is going
>to work with 100 sm 0805 components..
>so anyother ideas..
>can one buy flow soldering equipment s/h???
>g0zen..
>"Allan Butler" <ka0ies@hotmail.com> wrote in message
>news:ALRjc.5600$Rd4.566539@attbi_s51...
>> What I have done in the past is to tin the pads where the parts are going
>> to be mounted and then I use two soldering irons. One on each pad and it
>> pulls the part right down into a good position.
>>
>> Ok ok I hear the question now. What about parts with more than two leads?
>>
>> That is a valid and good question. Only tin two pads for that part and
>use
>> the soldering iron on each one of the pads to get the part mounted and in
>> position to finish soldering the rest of the leads one at a time.
>>
>
>
For many irons, you can also buy fork-ended solder tips that bridge over the parts. I made one by cutting and filing an old tip, and it worked OK for parts removal. However, it would need some co-ordination to make the tip contact the two pads without also knocking the part out of place.

The toaster oven looks like a much better method for a whole-board assembly project, except for two key problems:

1. Solder paste is expensive

2. Solder paste doesn't keep (seems to have about the same time constant as Horowitz & Hill's wet fish)

Those are big problems for occasional, low-volume users such as ourselves. So the questions are:

1. Where's a low-cost source of solder paste? (in various parts of the world)

2. How can we either store it so it stays fresh; or re-constitute it after it's gorn orf?

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

3421. Re: ladder filters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 10:42:12 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <8_4kc.39623$2v.2298@nwrdny02.gnilink.net>
Source record: 26357

See "Ladder Crystal Filter Design", by J. A. Hardcastle, November 1980, QST
and "A Unified Approach to the Design of Crystal Ladder Filters", by Wes
Hayward, May 1982, QST.

Joe
W3JDR

"Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:2mXjc.63157$Yw5.27065@bignews4.bellsouth.net...
> I just got a deal on ebay for 8.3886 mhz crystals (414 pcs for $9.99).
> Should be able to make a few good ssb and cw filters out of that!
> They look like std microprocessor types (hc49/u holders) though this
> isn't a common microprocessor frequency. Guess I'll start with 100pf
> coupling caps, any good guess on what the termination resistance might
> be? (I'm looking for a bw suitable for ssb, probably about 2.1khz).
> Hope this frequency doesn't have any bad mixer products (but I can
> always pick either high or low side injection if necessary).

3422. Alternate parts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 10:58:17 UTC
From: Marshon <marshon@kismit.demon.co.uk>
Message-ID: <bbn190dkldisf02q683r7qrehf2rhmfpl0@4ax.com>
Source record: 26359

Hi guys,

Throw me a bone here.......
Although I only have my UK Foundation licence, I'm not quite a novice when it comes to circuits. I worked for many years as an IT systems engineer, can read a schematic, and understand what a circuit is doing.
What is really starting to bug me is trying to locate a source of information for alternative parts, especially transistors. I have acumulated literally hundreds of parts, but I can guarantee that for any given project I wont have the exact quoted part and will have to order in a part costing pennies with handling and delivery in pounds. Maddening to be sure.
Does anyone know of a site that gives a list of alternative or equivalent parts? As an example, I have hundreds of 2N2222 transistors but the requirement is for a single BC547 of which I have none. The datasheets would suggest that the 2N2222 would do the job, but is it always going to be a 'suck it and see'?

Any advice gratefully received.

Simon (MW3CUR)

3423. Re: surface mount soldering..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 11:36:04 UTC
From: Leon Heller <leon_heller@hotmail.com>
Message-ID: <4090e8a4$0$25328$cc9e4d1f@news-text.dial.pipex.com>
Source record: 26360

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:SguIFKBbNKkAFArZ@ifwtech.co.uk...

>
> 2. How can we either store it so it stays fresh; or re-constitute it
> after it's gorn orf?

It keeps much better if it is kept in a fridge.

Leon
--
Leon Heller, G1HSM
http://www.geocities.com/leon_heller

3424. Re: Alternate parts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 12:54:28 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c6qtu4$bn4$1@sparta.btinternet.com>
Source record: 26361

> I have
> acumulated literally hundreds of parts, but I can guarantee that for
> any given project I wont have the exact quoted part and will have to
> order in a part costing pennies with handling and delivery in pounds.

==========

The genuine amateur, indeed the professional in thoughtful moments, looks at the parts pile and asks himself "now what can I make from that? "

Or he visits car-boot sales stalls and asks the same question.

A bird in hand is worth two in the bush.

A pound to a penny, after a tedius pencil and paper design and a prolonged search, key parts will eventually be found to be not available from anywhere. Or be too expensive. So change to another more satisfying design.

Inevitably, Economy Rules!

Reg, G4FGQ

3425. Re: QRP & BPL

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 14:12:33 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <wsOdnYgIYbwfkQzdRVn-hA@comcast.com>
Source record: 26362

In addition to QRP, BPL could wreak havoc with mobile services -- here in NJ (JCPL is part of GPU -- GPU is part of First Energy -- what a marriage -- the 8/14/03 disaster coupled with Three Mile Island!!) there are some places where the interference from power line connectors, poorly maintained transmission just crackles. Fortunately BPL is unlikely here due to Comcast or Verizon's DSL.

"The Eternal Squire" <eternalsquire@comcast.net> wrote in message news:ypWdncbMYOp6fBDdRVn-ig@comcast.com...
> Hi,
>
> I am not sure who would want to answer this, but I have a question about
> homebrewing. I had been doing it for about a year until I had heard
> about how BPL was going to completely obliterate all possibility of weak
> signal work.
>
> I had therefore stopped my hobby since the start of this year and
> started reading the ARRL articles re BPL's progress through the FCC.
>
> In your regular QRP work, have you or others began experiencing massive
> interference from BPL? Are there still HF bands which will still remain
> worthwhile to use, if so, which ones?
>
> Thanks,
>
> The Eternal Squire
> WA2JAZ
>

3426. Heat sink sources

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 14:15:28 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <1JqdnT7mStmykAzdRVn-uQ@comcast.com>
Source record: 26363

the heat sinks in my Digikey, Mouser, etc. catalogs aren't of sufficient C/W capacity (2 - 5 C/W). Can anyone suggest one or more sources which will sell for TO-220 style devices in small quantities?

3427. Storage of solder paste and cautionary comments

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 14:20:06 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <3MycndZgktijkgzdUSdV9g@ptd.net>
Source record: 26364

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:SguIFKBbNKkAFArZ@ifwtech.co.uk...
>
> 2. Solder paste doesn't keep (seems to have about the same time constant
> as Horowitz & Hill's wet fish)
>
> 2. How can we either store it so it stays fresh; or re-constitute it
> after it's gorn orf?

Solder paste must be kept refrigerated to maximize its shelf life. (read the manufacturer's storage and handling instructions CAREFULLY, both for proper storage for product longevity and for safety reasons)

Note: If you don't have a dedicated refrigerator and *must* use one you keep food in, you *must* take the *utmost* of care to do (at least) the following
before even *considering* putting solder paste in your (regular, food storage) refrigerator (and you should probably do this even if you have a dedicated refrigerator):

1) clean the tube VERY well after use to make sure no paste is on the outside
2) place the tube in a plastic "zip-lock" bag (which must not be contaminated with solder paste)
3) place the bag, with the tube inside into a plastic container with a tightly sealing lid (again, this must be clean and not contaminated with solder paste)

Doing this *very carefully and meticulously* will at least minimize the possibility of contaminating your refrigerator with solder paste particles, which are VERY small ...

Further notes: You should, at after each step above, THOROUGHLY wash your hands to assure that you don't transfer any solder paste to the outside of the bag or the plastic container. Use a fresh, brand new bag each time (they are cheap). Also wash the plastic container THOROUGHLY inside and out each time you prepare to re-store your solder paste (don't wash it in your dishwasher - do it manually and clean up afterwards as if you were cleaning up a hazmat spill). And finally, NEVER use the plastic container for food after you've stored solder paste in it, NOT MATTER HOW WELL YOU THINK YOU'VE CLEANED IT.

Ultimate note: If you have children in the home who could get into the refrigerator and get at the solder paste, you probably shouldn't even consider putting solder paste in your refrigerator where the children could get at it ...

DISCLAIMER: While I believe the precautions above to be adequate and use them myself, I take no responsibility for any consequences of a proper lack of care on anyone's part in doing what I describe above, or any inadequacy in my suggestions. Anyone following these suggestions does so solely at their own risk.

73,
Carl - wk3c

p.s. Additionally, anyone considering the "ez-bake" method of reflow soldering needs to understand the ABSOLUTE necessity of having a dedicated toaster oven that is NEVER used for food preparation. It, along with all soldering supplies should be used and stored in an area that is inaccessable to children (keeping in mind how inquisitive children are and their ability to get into things that you *thought* were secure or inaccessable).

3428. Re: Alternate parts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 14:28:02 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <Hu0tmkUyDRkAFAZr@ifwtech.co.uk>
Source record: 26370

Marshon wrote:
> Does anyone know of a site that gives a list of alternative or
>equivalent parts?

Not really... and if I did, I wouldn't trust it. They can't possibly know what is important in your particular circuit.

When the same device is made by several different manufacturers, each one may give it a slightly different label. The only worthwhile thing that so-called "equivalents" lists do is help you recognise the root number that they all share. Devices that share the same root number are directly interchangeable in most cases - because they are intended to be the same.

But devices with different numbers are usually intended to be different devices.

Be literal-minded about this: a true substitute can only be another device of exactly the same type. In all other cases, think of it as a *different* device that does *some* of the same things... namely, the things that you need in that particular circuit.

>As an example, I have hundreds of 2N2222 transistors but the
>requirement is for a single BC547 of which I have none. The datasheets
>would suggest that the 2N2222 would do the job, but is it always going
>to be a 'suck it and see'?

If you've actually compared datasheets, you've already done far more than most people. Think about what a transistor needs to do in that particular circuit, and trust your own judgement.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

3429. Re: Heat sink sources

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 14:29:25 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <40911145.8C68D475@rica.net>
Source record: 26365

John Walton wrote:
>
> the heat sinks in my Digikey, Mouser, etc. catalogs aren't of sufficient C/W
> capacity (2 - 5 C/W). Can anyone suggest one or more sources which will
> sell for TO-220 style devices in small quantities?

Are you willing to drill holes?
http://www.wakefield.com/pdf/Extruded_Heat_Sink.pdf
These are available from Digikey.

--
John Popelish

3430. Re: Heat sink sources

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 15:14:23 UTC
From: Leon Heller <leon_heller@hotmail.com>
Message-ID: <40911bcf$0$25325$cc9e4d1f@news-text.dial.pipex.com>
Source record: 26366

"John Walton" <jdwalton@comcast.net> wrote in message
news:1JqdnT7mStmykAzdRVn-uQ@comcast.com...
> the heat sinks in my Digikey, Mouser, etc. catalogs aren't of sufficient
C/W
> capacity (2 - 5 C/W). Can anyone suggest one or more sources which will
> sell for TO-220 style devices in small quantities?

I made my own some time ago for two TO220 devices from a piece of Al
channel. It was much easier to mount on my PCB than any of the commercial
ones and had plenty of dissipation for my application.

Leon

3431. Re: Alternate parts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 15:26:21 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <x89kc.2722$ri6.1398@newssvr24.news.prodigy.com>
Source record: 26367

I agree with Reg, since you hae so many you've nothing to lose except a little time and perhaps some smoke. I do many genereiuc swaps and the only thing that concerns me first is the polarity, size and power. If those are close I try it. I think in this case you're in luck as the first Google hit shows both transistors. Here it is:
http://www.electronics-ee.com/Electronics/Components/Transistors.htm

Its always frustated me why the UK had to use a different system for numbering similar things. Perhaps it's for the same reason we drive on opposite sides of the road, hi hi hi. Drving over there frustates me so mcuh I don't even try anymore unless there's no other choice but I do pick up UK numbered transistors whenver I see them at swap meets, just in case I can use it. So far I've only found a couple!

Let us know how it works and have fun
73
Hank WD5JFRP
"Marshon" <marshon@kismit.demon.co.uk> wrote in message
news:bbn190dkldisf02q683r7qrehf2rhmfpl0@4ax.com...
> Hi guys,
>
> Throw me a bone here.......
> Although I only have my UK Foundation licence, I'm not quite a novice
> when it comes to circuits. I worked for many years as an IT systems
> engineer, can read a schematic, and understand what a circuit is
> doing.
> What is really starting to bug me is trying to locate a source of
> information for alternative parts, especially transistors. I have
> acumulated literally hundreds of parts, but I can guarantee that for
> any given project I wont have the exact quoted part and will have to
> order in a part costing pennies with handling and delivery in pounds.
> Maddening to be sure.
> Does anyone know of a site that gives a list of alternative or
> equivalent parts? As an example, I have hundreds of 2N2222 transistors
> but the requirement is for a single BC547 of which I have none. The
> datasheets would suggest that the 2N2222 would do the job, but is it
> always going to be a 'suck it and see'?
>
> Any advice gratefully received.
>
> Simon (MW3CUR)

3432. Re: Radio control transmitter - interference problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 15:44:59 UTC
From: pvenkman@hotmail.com
Message-ID: <791aa995.0404290744.73849c9e@posting.google.com>
Source record: 26368

"Highland Ham" <xygm0csz.wvkn6wh@ntlworld.com> wrote in message
news:<ipujc.134$wK2.14@newsfe5-gui.server.ntli.net>...
> > Here's an idea. How about talking to the senior radio technician on the
> > military base? Just maybe he/she would have the answer.
> ================
> Or borrow a handheld scanning receiver. It could well be that a nearby
> transmitted signal ,not necessarily on or near 'your ' transmitted frequency
> affect the RC receiver (which probably has limited immunity in respect of
> strong harmonics/mixing sigs.)
>
> Frank GM0CSZ / KN6WH

I appreciate the replies, but the problem is NOT with the receiver,
it's with the transmitter.

I admit this was more or less the response I expected, but I really
hoped someone would say 'oh, I had the exact same problem and designed
and built a filter for my transmitter that fixed everything, and I'd
be happy to show you how to do the same'. But thanks for the replies,
I do appreciate it.

3433. Re: Radio control transmitter - interference problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 16:43:03 UTC
From: MNS <MNS@MNS.COM>
Message-ID: <rgakc.32$Jp.39499@ord-read.news.verio.net>
Source record: 26369

"P. Venkman" <pvenkman@hotmail.com> wrote in message
news:791aa995.0404290744.73849c9e@posting.google.com...
> "Highland Ham" <xygm0csz.wvkn6wh@ntlworld.com> wrote in message
news:<ipujc.134$wK2.14@newsfe5-gui.server.ntli.net>...
> > > Here's an idea. How about talking to the senior radio technician on
the
> > > military base? Just maybe he/she would have the answer.
> > ================
> > Or borrow a handheld scanning receiver. It could well be that a nearby
> > transmitted signal ,not necessarily on or near 'your ' transmitted
frequency
> > affect the RC receiver (which probably has limited immunity in respect
of
> > strong harmonics/mixing sigs.)
> >
> > Frank GM0CSZ / KN6WH
>
> I appreciate the replies, but the problem is NOT with the receiver,
> it's with the transmitter.
>
> I admit this was more or less the response I expected, but I really
> hoped someone would say 'oh, I had the exact same problem and designed
> and built a filter for my transmitter that fixed everything, and I'd
> be happy to show you how to do the same'. But thanks for the replies,
> I do appreciate it.

Look, if the transmitter is "synthesized" i.e. not crystal bound, and it is suffering the problem only near the Military base, then it is pretty obvious that the transmitter is being overwhelmed by a stronger signal. IT CAN AND DOES HAPPEN! The minute signal of your transmitter milliwatts to a watt or so is most likely being swamped out by the mega watts they are using or the mixing of the signals is doing it. Either use a crystal controlled transmitter there, or quit flying there! They're not going to shut down for you to fly your model plane. You claim that is the only place it happens.... Soooooo! Maybe no one else flys in RF bombarded fields to have experienced the same problem that you're looking for the answers to. The answer is obvious. Crystal controlled or stop flying there.

Lou

3434. Re: Storage of solder paste and cautionary comments

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 19:25:41 UTC
From: mcalhoun@ksu.edu
Message-ID: <c6rkrl$sf9@unix2.cc.ksu.edu>
Source record: 26371

>> 2. Solder paste doesn't keep (seems to have about the same time constant
>> as Horowitz & Hill's wet fish)

>Solder paste must be kept refrigerated to maximize its shelf life. (read the
>manufacturer's storage and handling instructions CAREFULLY, both for proper
>storage for product longevity and for safety reasons)

I sure hope "solder paste" is NOT the same thing as "soldering paste flux",
or else my shoe-polish-size can of "Kester Soldering Paste Flux" (with a
hole in the lid through which I occasionally poke a soldering pencil)
that's been sitting on my workbench for at least the last 25 years hasn't
heard about those storage and handling instructions!

--Myron.
--
Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge
PhD EE (retired). "Barbershop" tenor. CDL(PTXS). W0PBV. (785) 539-4448
NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle, Pistol)

3435. Re: Storage of solder paste and cautionary comments

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 19:56:17 UTC
From: jimp@specsol-spam-sux.com
Message-ID: <c6rml0$9hv$1@mail.specsol.com>
Source record: 26372

mcalhoun@ksu.edu wrote:
> >> 2. Solder paste doesn't keep (seems to have about the same time constant
> >> as Horowitz & Hill's wet fish)

> >Solder paste must be kept refrigerated to maximize its shelf life. (read the
> >manufacturer's storage and handling instructions CAREFULLY, both for proper
> >storage for product longevity and for safety reasons)

> I sure hope "solder paste" is NOT the same thing as "soldering paste flux",
> or else my shoe-polish-size can of "Kester Soldering Paste Flux" (with a
> hole in the lid through which I occasionally poke a soldering pencil)
> that's been sitting on my workbench for at least the last 25 years hasn't
> heard about those storage and handling instructions!

> --Myron.
> --
> Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge
> PhD EE (retired). "Barbershop" tenor. CDL(PTXS). W0PBV. (785) 539-4448
> NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle, Pistol)

No, it is very small particles of solder in flux.

--
Jim Pennino

Remove -spam-sux to reply.

3436. Re: Alternate parts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 20:55:59 UTC
From: Highland Ham <xygm0csz.wvkn6wh@ntlworld.com>
Message-ID: <8cpkc.29$xy.17@newsfe2-gui.server.ntli.net>
Source record: 26386

> Its always frustated me why the UK had to use a different system for
> numbering similar things. Perhaps it's for the same reason we drive on
> opposite sides of the road, hi hi hi. Drving over there frustates me so
> mcuh I don't even try anymore unless there's no other choice but I do pick
> up UK numbered transistors whenver I see them at swap meets, just in case
I
> can use it. So far I've only found a couple!
==========
You probably mean European instead of UK numbering system versus the US
system.
And also there is of course the Nippon numbering system.
To my knowledge there are only few commonly used transistors with a typical
UK numbering code like the ZTX (Ferranti ?) series.

Frank GM0CSZ / KN6WH

3437. Re: Alternate parts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 22:54:31 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c6s171$1mi$1@newshost.mot.com>
Source record: 26373

"Marshon" <marshon@kismit.demon.co.uk> wrote in message
news:bbn190dkldisf02q683r7qrehf2rhmfpl0@4ax.com...
> Hi guys,
>
> Throw me a bone here.......
> ....What is really starting to bug me is trying to locate a source of
> information for alternative parts, especially transistors. I have
> acumulated literally hundreds of parts, ...

'suck and see'
Sounds like a new Matel toy...

Simon,
You claim to be no dummy, so... You know what you have, so look at the application and take what you have that fits the application the best, then tweek away...er, uh, rather optimize for your choice. The 2N2222 will probably work on 99% of the projects anyway....

I vote... start suckin'...

--
Steve N, K,9;d, c. i My email has no u's.

3438. Re: Alternate parts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-29 23:41:57 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <zfgkc.94582$UC4.91714@bignews2.bellsouth.net>
Source record: 26374

Marshon wrote:
> Hi guys,
>
> Throw me a bone here.......
> Although I only have my UK Foundation licence, I'm not quite a novice
> when it comes to circuits. I worked for many years as an IT systems
> engineer, can read a schematic, and understand what a circuit is
> doing.
> What is really starting to bug me is trying to locate a source of
> information for alternative parts, especially transistors. I have
> acumulated literally hundreds of parts, but I can guarantee that for
> any given project I wont have the exact quoted part and will have to
> order in a part costing pennies with handling and delivery in pounds.
> Maddening to be sure.
> Does anyone know of a site that gives a list of alternative or
> equivalent parts? As an example, I have hundreds of 2N2222 transistors
> but the requirement is for a single BC547 of which I have none. The
> datasheets would suggest that the 2N2222 would do the job, but is it
> always going to be a 'suck it and see'?
>
> Any advice gratefully received.
>
> Simon (MW3CUR)
When looking at transistors to see if one on hand would be a suitable
sub for one called for in a design the important paramters are the
max voltage ratings (VCBO, VEBO and VCEO), the current gain (Hfe) and
the transfer or cutoff frequency Ft ratings. If the device must handle
any power then look at the power dissipation rating (PD) and max current
ratings (Ic). Be aware that some ratings such as Hfe and Ft are
made under certain operating conditions, IE: a transistor could have a
low current gain at low collector current, but a moderate to high gain
at high currents. That's great for a power amp, but not so good for a
small signal amplifier. If you have a curve tracer (Heath IT-1121 is a
nice inexpensive unit that shows up on ebay from time to time, you need
an external scope for this one) you can identify unknown transistors.

3439. Re: Alternate parts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-30 00:13:52 UTC
From: bviel <sjouk@home.nl>
Message-ID: <c6s5medej1@news4.tilbu1.nb.home.nl>
Source record: 26375

"Marshon" <marshon@kismit.demon.co.uk> schreef in bericht
news:bbn190dkldisf02q683r7qrehf2rhmfpl0@4ax.com...
Throw me a bone here.......
Sorry....it bounces back off my screen !
Now if you could laugh at it, and if this message reaches this newsgroup, I
will send the list !

> Hi guys,
>
> Throw me a bone here.......
> Although I only have my UK Foundation licence, I'm not quite a novice
> when it comes to circuits. I worked for many years as an IT systems
> engineer, can read a schematic, and understand what a circuit is
> doing.
> What is really starting to bug me is trying to locate a source of
> information for alternative parts, especially transistors. I have
> acumulated literally hundreds of parts, but I can guarantee that for
> any given project I wont have the exact quoted part and will have to
> order in a part costing pennies with handling and delivery in pounds.
> Maddening to be sure.
> Does anyone know of a site that gives a list of alternative or
> equivalent parts? As an example, I have hundreds of 2N2222 transistors
> but the requirement is for a single BC547 of which I have none. The
> datasheets would suggest that the 2N2222 would do the job, but is it
> always going to be a 'suck it and see'?
>
> Any advice gratefully received.
>
> Simon (MW3CUR)

3440. Re: Storage of solder paste and cautionary comments

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-30 00:38:20 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <9ZOdnfVqc_yaPQzdUSdV9g@ptd.net>
Source record: 26376

<mcalhoun@ksu.edu> wrote in message news:c6rkrl$sf9@unix2.cc.ksu.edu...
> >> 2. Solder paste doesn't keep (seems to have about the same time
constant
> >> as Horowitz & Hill's wet fish)
>
> >Solder paste must be kept refrigerated to maximize its shelf life. (read
the
> >manufacturer's storage and handling instructions CAREFULLY, both for
proper
> >storage for product longevity and for safety reasons)
>
> I sure hope "solder paste" is NOT the same thing as "soldering paste
flux",
> or else my shoe-polish-size can of "Kester Soldering Paste Flux" (with a
> hole in the lid through which I occasionally poke a soldering pencil)
> that's been sitting on my workbench for at least the last 25 years hasn't
> heard about those storage and handling instructions!
>
> --Myron.

No, Myron ... solder paste is a suspension of micro-spheres of solder in a
flux that makes a paste that is used for reflow soldering of SMT parts.

Carl - wk3c

3441. Re: Alternate parts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-30 01:23:32 UTC
From: simplesimon@hotmail.com
Message-ID: <c6sa1kjmn1@newsg4.svr.pol.co.uk>
Source record: 26377

http://w1.859.telia.com/~u85920178/

harry has loads of stuff using 2222/ or 547/s

3442. Re: Solar cell modules/Wind Generator combination

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-30 02:09:43 UTC
From: councilmemberlasman@ci.brooklyn-center.mn.us
Message-ID: <Hzikc.992$J71.186607@attbi_s03>
Source record: 26378
Cross-posted to: sci.electronics.design,sci.electronics.components,alt.solar.photovoltaic,rec.radio.amateur.homebrew

In article <rSCgc.657$Gq3.274@newsfe1-win>, xygm0csz.wvkn6wh@spamisbad.com
says...
>
>> Now a wind generator would be cool, there are many windmils of huge size
>here,
>> one next to my house (100m or so), a BIG one that replaced 5 smaller
>ones...
>> It is on the coast, and it is always windy here...
>> How big is that thing?
>> JP
>==============================
>As I reported in a previous message its rated capacity is only 150 Watts.
>6 Blades , 900 mm diameter, max rpm approx 250 , 3 phase generator (DC
>through one and a half standard 25 Amperes bridge rectifiers)
>The thing sits on a street lamp post with an extension (approx 8 metres
>above ground.
>
>Frank GM0CSZ / KN6WH
>
>
>
>

3443. VHF / UHF PA 30mWin / 10W out

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-30 06:19:15 UTC
From: "Dr.Ice" <Dr.Ice@GMX.net>
Message-ID: <c6sr4s$1j7$03$1@news.t-online.com>
Source record: 26383

Hi,

I am searching for an Layout of a 10W output PA for my Transverter. I need just one for 2m and one for 70cm. Has anyone a Layout or schematic to build it on my own ?

Thanks

Markus
Dr.Ice@GMX.net

3444. Re: VHF / UHF PA 30mWin / 10W out

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-30 06:56:11 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <fMmkc.44622$NG2.41127@edtnps84>
Source record: 26384

If you need that much gain, you're best off with an amp module from
Motorola or someone.

At VHF, 30mW in for 10W out will have serious stability problems if done
discretely and if not layed out just perfect.

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

3445. Re: Quadrature mixing from 2xLO PLL?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-30 08:04:06 UTC
From: Richard Hosking <richardh@iinet.net.au>
Message-ID: <40920876.5070207@iinet.net.au>
Source record: 26385

I seem to recall a design using EXOR gates to divide the signal by two -
I cant remember the details. I recall however that the duty cycle of the
input clock was critical I have successfully used a Johnson Ring divide
by 4 Counter a few times to generate quadrature outputs from a 4X clock
signal. The duty cycle is not critical in this case as the clock counts
on a rising (or falling) transition of the input.
I am not sure what you mean by "differential mixer" Does this mean two
mixers with the inputs fed 180 deg out of phase? Of course at 100 MHz
you would have to use ECL logic.

Richard

MattH wrote:
> Hi group,
> An associate is proposing a mixer design that I'm having a hard time
> understanding. I did some Google searching and haven't found an answer, so
> perhaps some kind sould can help.
>
> The basic porposal is to generate a clock at twice the LO frequency, divide
> it by two and use some sort of differential mixer circuit. This is for
> wideband (broadcast) FM reception. He says that the key is the use of
> differential circuits within the mixer. Of course, this is intended to be
> used with quadrature demodulation.
>
> Sitting down and thinking about it, I could see how it would work if one
> were to take the rising edges of the 2X LO clock for one phase and the
> falling edges for the 90d phase, but it seems like doing it that would way
> would likely result in the I+Q not being perfectly orthagonal due to things
> like different delays in rising vs falling edge logic, imperfect duty
> cycle, etc. And even then it wouldn't need to be differential.
>
> Well, if anyone has a suggestion for a mixer architecture that does what he
> says (ie uses 2x LO clock and requries differential circuitry) then I'd
> appreciate the help.
> Regards,
> Matt

3446. Re: VHF / UHF PA 30mWin / 10W out

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-30 10:19:48 UTC
From: Scott <acepilot@bloomer.net>
Message-ID: <40922844.7050304@bloomer.net>
Source record: 26388

http://www.rfparts.com/

They have a ton of "brick" modules by Motorola, Mitsubishi, etc. These devices are the cat's a**! They basically need DC power and In/Out pins hooked up. As others mentioned, some are for FM/CW and some are linear (SSB, AM, etc.)

Scott

Dr.Ice wrote:
> Hi,
>
> I am searching for an Layout of a 10W output PA for my Transverter. I need
> just one for 2m and one for 70cm. Has anyone a Layout or schematic to build
> it on my own ?
>
> Thanks
>
> Markus
> Dr.Ice@GMX.net
>
>

3447. Re: VHF / UHF PA 30mWin / 10W out

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-30 10:37:19 UTC
From: Highland Ham <xygm0csz.wvkn6wh@ntlworld.com>
Message-ID: <a2qkc.49$B_3.41@newsfe1-gui.server.ntli.net>
Source record: 26387

> I am searching for an Layout of a 10W output PA for my Transverter. I need
> just one for 2m and one for 70cm. Has anyone a Layout or schematic to
build
> it on my own ?
==========
Suggest you consider Mitsubishi RF Power modules (still available)

for 144 - 148 MHz : M57713 P(max) =
10W (for linear duty)
M57719
P(max) = 21 W
M57715
P(max)= 20 W
or Toshiba SAV17
P(max)= 25 W
or Motorola MHW612
P(max)=25W

For 430 -450 MHz M57716 P(max)= 10
W (for linear duty)
M57729
P(max)=?
or Toshiba S-AU4
P(max)= > 10W

Not all the modules might be suitable for linear operation (SSB) so you have
to check with supplier.

Here in the UK a supplier still carrying these Mitsubishi power modules is
Mainline Electronics - Leicester
www.mainlinegroup.co.uk

An excellent book for homebrew transverters and power amps with the above
modules :
The VHF / UHF DX Book , edited by Ian White , G3SEK.

Frank , GM0CSZ / KN6WH

3448. Re: VHF / UHF PA 30mWin / 10W out

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-30 12:45:05 UTC
From: "G.Beat" <now9spamgb@no.comcast.spam.net>
Message-ID: <lTrkc.2943$0H1.301739@attbi_s54>
Source record: 26389

"Dr.Ice" <Dr.Ice@GMX.net> wrote in message
news:c6sr4s$1j7$03$1@news.t-online.com...
> Hi,
>
> I am searching for an Layout of a 10W output PA for my Transverter. I need
> just one for 2m and one for 70cm. Has anyone a Layout or schematic to
> build
> it on my own ?
>
> Thanks
>
> Markus
> Dr.Ice@GMX.net
>

You can always look at the Elecraft XV transverter layout (e.g. 50, 144, 222
MHz)
- or just build the kit. The 70 cm version is due later this year - BUT
will require
a different board layout.
http://www.elecraft.com/XV/XV.htm

This design can handle .01 mW to 8 W input.
http://www.elecraft.com/manual/XV%20Data%20Sheet%202004a%20web.pdf

w9gb

3449. Re: VHF / UHF PA 30mWin / 10W out

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-30 13:49:12 UTC
From: xpyttl <xpyttl_NOSPAM@earthling.net>
Message-ID: <1094marlmb75k5d@corp.supernews.com>
Source record: 26390

RF Parts is nice because they tend to have stuff you can't get anywhere else. HOWEVER, one caution ... if somebody else has it, somebody else will almost always be cheaper. Of course there are exceptions to prove the rule, but they are definitely the high-priced spread.

Some of those modules do look like they are -exactly- what OP was looking for, tho.

..

"Scott" <acepilot@bloomer.net> wrote in message news:40922844.7050304@bloomer.net...
> http://www.rfparts.com/
>
> They have a ton of "brick" modules by Motorola, Mitsubishi, etc. These
> devices are the cat's a**! They basically need DC power and In/Out pins
> hooked up. As others mentioned, some are for FM/CW and some are linear
> (SSB, AM, etc.)
>
> Scott

3450. Re: VHF / UHF PA 30mWin / 10W out

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-04-30 15:21:54 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <j0r490hfu0prc59hrb3u9u1tl5qb5bfkpi@4ax.com>
Source record: 26391

On Fri, 30 Apr 2004 06:56:11 GMT, Gregg <nospam@unknown.org> wrote:

>If you need that much gain, you're best off with an amp module from
>Motorola or someone.
>
>At VHF, 30mW in for 10W out will have serious stability problems if done
>discretely and if not layed out just perfect.

Yeah, for simplicity the modules rule, but it's hardly in the spirit
of homebrewing, is it? Whilst it's hardly a beginner's project, I
don't see why anyone who knows what they're doing couldn't build one
of these from discretes and have a lot of fun doing so. Where do you
suppose most of these "serious stability problems" are going to arise?

--

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3451. Re: VHF / UHF PA 30mWin / 10W out

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 01:04:36 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <EICkc.44$m03.10@clgrps13>
Source record: 26392

Behold, Paul Burridge signalled from keyed 4-1000A filament:

> On Fri, 30 Apr 2004 06:56:11 GMT, Gregg <nospam@unknown.org> wrote:
>
>>If you need that much gain, you're best off with an amp module from
>>Motorola or someone.
>>
>>At VHF, 30mW in for 10W out will have serious stability problems if done
>>discretely and if not layed out just perfect.
>
> Yeah, for simplicity the modules rule, but it's hardly in the spirit of
> homebrewing, is it? Whilst it's hardly a beginner's project, I don't see
> why anyone who knows what they're doing couldn't build one of these from
> discretes and have a lot of fun doing so.

Quite true!

> Where do you suppose most of
> these "serious stability problems" are going to arise?

RF feedback between the stages is the biggest enemy. If it's well shielded
and maybe a bit of neutralization, he should have no probs then :-)

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

3452. ARRL CD ROMS under linux.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 01:37:45 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <o5Dkc.48297$oN1.6090@bignews5.bellsouth.net>
Source record: 26393

For those hams running linux, I've found I can read
the ARRL QEX and QST View cd roms under linux using either
the Gimp or Open Office writer. These cdroms are scanned
images in tiff or jpg formats which import into either program.
By importing into an OO text document I can convert the articles
into PDF files and print double sided to my printer for
hard copy.

I started looking at writing a program to search the QST view
database found on the disks. The database on the disks up to
1990 (not sure about the 1995 disk) is an ascii representation
of a 3 table SQL database so I can create a MySQL, Posgres, or
similar SQL database to search. The QEX disk has a binary database
of which some sections are readable under vi as text that also appear
to be a set of SQL tables, so extraction of useful data may be
possible here as well. If I could find documention on performing
'macro' commands on a running OO session from another program I could
use OO to build pdf files from a search application (you can do this
under windows using VB script to control a word session).

The QST view database is somewhat incomplete as the final pages
of an article are not referenced in the database and you have to
manually hunt for them, even if you use the windows software.
QEX mostly kept the articles contiguous.

3453. Re: ARRL CD ROMS under linux.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 03:21:30 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c6v53qchb1@freenet9.carleton.ca>
Source record: 26394

Ken Scharf (wa2mzeNOTTHIS@bellsouth.net) writes:
> For those hams running linux, I've found I can read
> the ARRL QEX and QST View cd roms under linux using either
> the Gimp or Open Office writer. These cdroms are scanned
> images in tiff or jpg formats which import into either program.
> By importing into an OO text document I can convert the articles
> into PDF files and print double sided to my printer for
> hard copy.
>
> I started looking at writing a program to search the QST view
> database found on the disks. The database on the disks up to
> 1990 (not sure about the 1995 disk) is an ascii representation
> of a 3 table SQL database so I can create a MySQL, Posgres, or
> similar SQL database to search. The QEX disk has a binary database
> of which some sections are readable under vi as text that also appear
> to be a set of SQL tables, so extraction of useful data may be
> possible here as well. If I could find documention on performing
> 'macro' commands on a running OO session from another program I could
> use OO to build pdf files from a search application (you can do this
> under windows using VB script to control a word session).
>
> The QST view database is somewhat incomplete as the final pages
> of an article are not referenced in the database and you have to
> manually hunt for them, even if you use the windows software.
> QEX mostly kept the articles contiguous.

Have you just started playing with this?

Because someone did write about their experiences years back, at
least I think they had had success with those CDROMs under Linux.
I've been meaning to go digging to try to find the post or posts,
because now that I have a computer with a CDROM drive, obviously
those QSTs on CDROM become tempting. And I've never had Windows
running here.

Michael VE2BVW

3454. URM 120

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 03:38:28 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BCB893D0.5AB9%outhouse@midcoast.com>
Source record: 26395

I just got a Struthers wattmeter/SWR meter at a hamfest, but no papers.

Does anybody here have the instructions/service manual or would know where to get it??

Thanks Uwe

3455. LEDs that are visible in sunlight

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 04:33:54 UTC
From: jason_hsu@my-deja.com
Message-ID: <f7d9a152.0404302033.907106b@posting.google.com>
Source record: 26328
Cross-posted to:
sci.electronics.components,sci.electronics,sci.electronics.basics,alt.engineering.electrical,rec.radio.amateur.homebrew

What LEDs do you use for a display that needs to be readable in
sunlight?Obviously, regular LEDs are too dim. From what I have heard,
the LEDs should be at least 2000 mcds in brightness, have at least a
60-degree viewing
angle, and have clear or diffused lenses.

But for all the sources of LEDs, the >=2000 mcd LEDs have viewing
angles that are no larger than about 20 degrees. I realize that
there will be some trade-off due to energy issues (analogous to
highly directional antennas vs. omnidirectional antennas), but I'd
like to hear your real world experiences.

What do you suggest? Should I trade off viewing angle to get the 2000
mcds? Should I trade off the mcds to get the 60 degree viewing angle?
Do I simply need to look harder and be prepared to pay more?

Jason Hsu, AG4DG
http://www.jasonhsu.com/ee.html
http://groups.yahoo.com/group/eeham/
http://groups.yahoo.com/group/resume_hyperinflation_fighters/
http://groups.yahoo.com/group/gmu-ece-control/

3456. Re: LEDs that are visible in sunlight

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 04:44:26 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1096ap5ov6ece5d@corp.supernews.com>
Source record: 26329
Cross-posted to:
sci.electronics.components,sci.electronics,sci.electronics.basics,alt.engineering.electrical,rec.radio.amateur.homebrew

Jason Hsu wrote:

> What LEDs do you use for a display that needs to be readable in
> sunlight?Obviously, regular LEDs are too dim. From what I have heard,
> the LEDs should be at least 2000 mcds in brightness, have at least a
> 60-degree viewing
> angle, and have clear or diffused lenses.
>
> But for all the sources of LEDs, the >=2000 mcd LEDs have viewing
> angles that are no larger than about 20 degrees. I realize that
> there will be some trade-off due to energy issues (analogous to
> highly directional antennas vs. omnidirectional antennas), but I'd
> like to hear your real world experiences.
>
> What do you suggest? Should I trade off viewing angle to get the 2000
> mcds? Should I trade off the mcds to get the 60 degree viewing angle?
> Do I simply need to look harder and be prepared to pay more?
>
> Jason Hsu, AG4DG
> http://www.jasonhsu.com/ee.html
> http://groups.yahoo.com/group/eeham/
> http://groups.yahoo.com/group/resume_hyperinflation_fighters/
> http://groups.yahoo.com/group/gmu-ece-control/

Perhaps you should think about using an LCD? More involved to drive,
but certainly visible in sunlight!

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

3457. Help Needed - Adonis Mic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 08:34:44 UTC
From: Colin Parry <colin@thornhill2.force9.co.uk>
Message-ID: <hmJkc.37968$Y%6.5199990@wards.force9.net>
Source record: 26396

Hi There,
trying to interface an Adonis AM503g desk mic to a TS120. Anybody got
any ideas ?

Regards

Colin

3458. Re: Alternate parts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 11:14:07 UTC
From: Marshon <marshon@kismit.demon.co.uk>
Message-ID: <kqv690tpqpu0904aefh81oa9cvehe8s0ag@4ax.com>
Source record: 26397

On Thu, 29 Apr 2004 11:58:17 +0100, Marshon
<marshon@kismit.demon.co.uk> wrote:

Thanks to everybody who took the time and effort to reply, and those
who mailed me directly.
Having taken all comments on board, I went for the nearest match to
the original datasheet. Everything works as intended and is up and
running.

Thanks again guys!

Simon (MW3CUR)

3459. Re: LEDs that are visible in sunlight

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 11:28:15 UTC
From: larwe@larwe.com
Message-ID: <608b6569.0405010328.50bfdedf@posting.google.com>
Source record: 26330
Cross-posted to:
sci.electronics.components,sci.electronics,sci.electronics.basics,alt.engineering.electrical,rec.radio.amateur.homebrew

> > What LEDs do you use for a display that needs to be readable in
> > sunlight?Obviously, regular LEDs are too dim. From what I have heard,
>
> Perhaps you should think about using an LCD? More involved to drive,
> but certainly visible in sunlight!

Uhhh...

Take a walk through the strip in Las Vegas some time, count the LED
billboards. Count the plasma billboards. Count the LCD billboards.
You'll be able to count LCDs on the fingers of one elbow.

3460. Re: LEDs that are visible in sunlight

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 12:29:42 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <mOqdnQ4hPaf4Cg7dRVn-tA@comcast.com>
Source record: 26331
Cross-posted to:
sci.electronics.components,sci.electronics,sci.electronics.basics,alt.engineering.electrical,rec.radio.amateur.homebrew

Luxeon emitters -- quite expensive, big and brite

Agilent has a whole series of ultra-brights on their website.

Note -- an LED's brightness is inversely related to temperature --

"Jason Hsu" <jason_hsu@my-deja.com> wrote in message
news:f7d9a152.0404302033.907106b@posting.google.com...
> What LEDs do you use for a display that needs to be readable in
> sunlight?Obviously, regular LEDs are too dim. From what I have heard,
> the LEDs should be at least 2000 mcds in brightness, have at least a
> 60-degree viewing
> angle, and have clear or diffused lenses.
>
> But for all the sources of LEDs, the >=2000 mcd LEDs have viewing
> angles that are no larger than about 20 degrees. I realize that
> there will be some trade-off due to energy issues (analogous to
> highly directional antennas vs. omnidirectional antennas), but I'd
> like to hear your real world experiences.
>
> What do you suggest? Should I trade off viewing angle to get the 2000
> mcds? Should I trade off the mcds to get the 60 degree viewing angle?
> Do I simply need to look harder and be prepared to pay more?
>
> Jason Hsu, AG4DG
> http://www.jasonhsu.com/ee.html
> http://groups.yahoo.com/group/eeham/
> http://groups.yahoo.com/group/resume_hyperinflation_fighters/
> http://groups.yahoo.com/group/gmu-ece-control/

3461. Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 13:19:59 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <mk87909cpdg7dq25dn24blfoph41mr2gpm@4ax.com>
Source record: 26398
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Hi,

I have a spare RF signal generator that has an unmarked output from a
type of socket I've never seen before. What's the simplest way of
establishing its output impedance? I've had a few ideas but no doubt
someone out there will know of something better, since I always seem
to end up making unnecessary work for myself.
Any suggestions?

p.
--

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3462. Re: ARRL CD ROMS under linux.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 13:58:42 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <s%Nkc.34680$7a5.6165@bignews6.bellsouth.net>
Source record: 26399

Michael Black wrote:
> Ken Scharf (wa2mzeNOTTHIS@bellsouth.net) writes:
>
>>For those hams running linux, I've found I can read
>>the ARRL QEX and QST View cd roms under linux using either
>>the Gimp or Open Office writer. These cdroms are scanned
>>images in tiff or jpg formats which import into either program.
>>By importing into an OO text document I can convert the articles
>>into PDF files and print double sided to my printer for
>>hard copy.
>>
>>I started looking at writing a program to search the QST view
>>database found on the disks. The database on the disks up to
>>1990 (not sure about the 1995 disk) is an ascii representation
>>of a 3 table SQL database so I can create a MySQL, Posgres, or
>>similar SQL database to search. The QEX disk has a binary database
>>of which some sections are readable under vi as text that also appear
>>to be a set of SQL tables, so extraction of useful data may be
>>possible here as well. If I could find documention on performing
>>'macro' commands on a running OO session from another program I could
>>use OO to build pdf files from a search application (you can do this
>>under windows using VB script to control a word session).
>>
>>The QST view database is somewhat incomplete as the final pages
>>of an article are not referenced in the database and you have to
>>manually hunt for them, even if you use the windows software.
>>QEX mostly kept the articles contiguous.
>
>
> Have you just started playing with this?
>
> Because someone did write about their experiences years back, at
> least I think they had had success with those CDROMs under Linux.
> I've been meaning to go digging to try to find the post or posts,
> because now that I have a computer with a CDROM drive, obviously
> those QSTs on CDROM become tempting. And I've never had Windows
> running here.
>
> Michael VE2BVW
>
I've been looking at this for awhile, but havn't yet written
any code. Havn't yet figured out which SQL database to use,
but there is an embedded open source implementation (name escapes
me at the moment) that is easier to use then MySql or Postgres

which doesn't require the server to be installed. Converting
the QST view database would require a simple C program to read
and parse the ascii file into three tables, then just write
some simple SQL searches to retrieve the data.
The hard part is to access OO write via backdoor scripts to
create a document to read or print from the images on the cdrom.
Of course that part can be done by hand once you have the list
of file names.
I hope to find time to sit down and write the code to do the
first part, maybe someone familar with the backends of OO can
help me with the second part.

3463. Re: URM 120

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 14:03:04 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <9YudnaeFaPAsMw7dRVn-hw@ctc.net>
Source record: 26400

I have had one for several years. There is not much to it. Just be sure to remove the "shipping and storage" wire from the back of the meter if it is there before using it. It is a piece of springey bare wire across the meter terminals. It may not be on your meter. Very nice meter but the meter is very much dampened. It will take a while for it to reach the maximum value. Just pop in the slug that you need for the range and power level. It is the meter that has a SWR adjustment knob on it you turn it to the neasuerment jposition and find a range where it is off scale, then adjust to full scale and then turn the slug 180 deg to get the SWR. Or you could find a chart the Bird meter uses and get the swr off the chart for the ammount of forward and reverse power.

"Uwe" <outhouse@midcoast.com> wrote in message
news:BCB893D0.5AB9%outhouse@midcoast.com...
> I just got a Struthers wattmeter/SWR meter at a hamfest, but no papers.
>
> Does anybody here have the instructions/service manual or would know where
> to get it??
>
> Thanks Uwe
>

3464. Re: LEDs that are visible in sunlight

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 14:05:23 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <%3Okc.61959$Uz1.52771@bignews3.bellsouth.net>
Source record: 26332
Cross-posted to:
sci.electronics.components,sci.electronics,sci.electronics.basics,alt.engineering.electrical,rec.radio.amateur.homebrew

Tim Wescott wrote:
> Jason Hsu wrote:
>
>> What LEDs do you use for a display that needs to be readable in
>> sunlight?Obviously, regular LEDs are too dim. From what I have heard,
>> the LEDs should be at least 2000 mcds in brightness, have at least a
>> 60-degree viewing
>> angle, and have clear or diffused lenses.
>>
>> But for all the sources of LEDs, the >=2000 mcd LEDs have viewing
>> angles that are no larger than about 20 degrees. I realize that there
>> will be some trade-off due to energy issues (analogous to highly
>> directional antennas vs. omnidirectional antennas), but I'd like to
>> hear your real world experiences.
>>
>> What do you suggest? Should I trade off viewing angle to get the 2000
>> mcds? Should I trade off the mcds to get the 60 degree viewing angle?
>> Do I simply need to look harder and be prepared to pay more?
>>
>> Jason Hsu, AG4DG
>> http://www.jasonhsu.com/ee.html
>> http://groups.yahoo.com/group/eeham/
>> http://groups.yahoo.com/group/resume_hyperinflation_fighters/
>> http://groups.yahoo.com/group/gmu-ece-control/
>
>
> Perhaps you should think about using an LCD? More involved to drive,
> but certainly visible in sunlight!
>
There certainly are led's bright enough to see in daylight. Many of the
new traffic signals actually use leds! Not to mention the brake lights
on many trucks. But these are clusters of smaller leds packed into a
tight bundle and housed in reflector.

3465. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 14:23:42 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <OpOkc.13941$wY.13282@nwrdny03.gnilink.net>
Source record: 26401
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul,
The most obvious method would be to measure the open-circuit RF output voltage, and then measure the output voltage with a known load. The output impedance is a simple calculation of the ratio of the voltages.
However, depending on the vintage and quality of the generator, the impedance is likely to change with frequency, and possibly even with output level. For source-impedance-sensitive measurements, it's generally a good idea to put a small amount of fixed resistive attenuation at the output (6-10 dB) in order to "fix" the impedance.

Joe
W3JDR

"Paul Burridge" <pb@notthisbit.osiris1.co.uk> wrote in message
news:mk87909cpdg7dq25dn24blfoph41mr2gpm@4ax.com...
> Hi,
>
> I have a spare RF signal generator that has an unmarked output from a
> type of socket I've never seen before. What's the simplest way of
> establishing its output impedance? I've had a few ideas but no doubt
> someone out there will know of something better, since I always seem
> to end up making unnecessary work for myself.
> Any suggestions?
>
> p.
> --
>
> The BBC: licenced at public expense to spread lies.

3466. Re: LEDs that are visible in sunlight

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 14:40:10 UTC
From: jason_hsu@my-deja.com
Message-ID: <f7d9a152.0405010640.525e9e93@posting.google.com>
Source record: 26333
Cross-posted to:
sci.electronics.components,sci.electronics,sci.electronics.basics,alt.engineering.electrical,rec.radio.amateur.homebrew

Tim Wescott <tim@wescottnospamdesign.com> wrote in message
news:<1096ap5ov6ece5d@corp.supernews.com>...
>
> Perhaps you should think about using an LCD? More involved to drive,
> but certainly visible in sunlight!

The application is an SWR/wattmeter for amateur radio. An LCD would
not be suitable because the power level fluctuates many times per
second during voice transmissions (AM or SSB modes). This would
render the numeric readout useless. True, there are ways to smooth
out the fluctuations, but that would make the SWR/wattmeter less
responsive. On the other hand, an LED display in dot mode would
simply appear to be in bar graph mode during these voice
transmissions.

Jason Hsu, AG4DG
http://www.jasonhsu.com/ee.html
http://groups.yahoo.com/group/eeham/
http://groups.yahoo.com/group/resume_hyperinflation_fighters/
http://groups.yahoo.com/group/gmu-ece-control/

3467. Re: LEDs that are visible in sunlight

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 15:10:44 UTC
From: Dave VanHorn <dvanhorn@cedar.net>
Message-ID: <RPCdncfCgPFbIA7dRVn-uQ@comcast.com>
Source record: 26334
Cross-posted to:
sci.electronics.components,sci.electronics,sci.electronics.basics,alt.engineering.electrical,rec.radio.amateur.homebrew

> The application is an SWR/wattmeter for amateur radio. An LCD would
> not be suitable because the power level fluctuates many times per
> second during voice transmissions (AM or SSB modes). This would
> render the numeric readout useless. True, there are ways to smooth
> out the fluctuations, but that would make the SWR/wattmeter less
> responsive. On the other hand, an LED display in dot mode would
> simply appear to be in bar graph mode during these voice
> transmissions.

It's not such a worry. I have SMD leds from chicago miniature, in a product
with light pipes, that are quite visible outdoors in full sun.
www.mobilecommand.net

3468. FS: HALLICRAFTERS logo quartz wall clock!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 16:27:31 UTC
From: rlucch2098@aol.com
Message-ID: <20040501122731.13628.00000683@mb-m21.aol.com>
Source record: 26402

Please see here>>
http://www.myradioroom.com/
Thanks es 73..........RICH-WA2RQY RLUCCH2098@aol.com
Cheep Manuals for sale @>>
http://www.myradioroom.com/manualsales.html
Web-Page URL>
HTTP://members.aol.com/rlucch2098/index.html

3469. Re: RFI Problem With Lamp

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 17:02:38 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <OKQkc.5693$Im4.1053@newssvr23.news.prodigy.com>
Source record: 26403

Every few days mine comes on at either 6 or 7 AM but this morning it was
6:15AM. It's not me because I'm just getting up and if anyone knows how to
track the cause I'd sure like to know.
73
Hank WD5JFR
"FAZAMY" <fazamy@aol.com> wrote in message
news:20040427091435.10191.00000439@mb-m14.aol.com...
> I want to hear from someone who has successfully solved an rfi problem
with a
> lamp that switches on/off with the touch of a hand on a switch. It uses 2
high
> intensity bulbs that can light at 3 wattage levels at the touch of the
hand on
> the switch. It also has a transformer. I've tried toroids on the ac line
to
> the transformer and away from the transformer. The problem occurs when
I'm on
> 40m.
>
> 73,
> KB2AMY
>

3470. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 17:03:26 UTC
From: Jan Panteltje <pNaonStpealmtje@yahoo.com>
Message-ID: <c70l9d$2c4$1@news.epidc.co.kr>
Source record: 26404
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On a sunny day (Sat, 01 May 2004 14:19:59 +0100) it happened Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote in
<mk87909cpdg7dq25dn24blfoph41mr2gpm@4ax.com>:

>Hi,
>
>I have a spare RF signal generator that has an unmarked output from a
>type of socket I've never seen before. What's the simplest way of
>establishing its output impedance? I've had a few ideas but no doubt
>someone out there will know of something better, since I always seem
>to end up making unnecessary work for myself.
>Any suggestions?
>
Load it with 50 Ohms, and measure output voltage, remove load and measure
again.
If it is half, it is 50, else do the math.
JP

3471. Re: LEDs that are visible in sunlight

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 17:25:52 UTC
From: jeffm_@email.com
Message-ID: <f8b945bc.0405010925.6f377196@posting.google.com>
Source record: 26335
Cross-posted to:
sci.electronics.components,sci.electronics,sci.electronics.basics,alt.engineering.electrical,rec.radio.amateur.homebrew

>Should I trade off viewing angle to get the 2000 mcds?
> Jason Hsu, AG4DG

As Tim said, do think about a different (reflective) technology.
If you're stuck on LEDs, recess them into a black substrate.

3472. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 17:39:40 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <fl$bUGFcD+kAFAq0@ifwtech.co.uk>
Source record: 26412
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge wrote:
>I have a spare RF signal generator that has an unmarked output from a
>type of socket I've never seen before.

Would it be a car-type output socket (deep recessed centre pin)? Would it be an old Advance generator with the rounded corners? If so, it's almost certainly 75R.

>What's the simplest way of establishing its output impedance? I've had
>a few ideas but no doubt someone out there will know of something
>better, since I always seem
>to end up making unnecessary work for myself.

If it has a resistive output attenuator with no DC blocking capacitor, you can switch to maximum attenuation (minimum output) and measure Zout with an ohm-meter.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

3473. Re: ARRL CD ROMS under linux.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 18:45:44 UTC
From: xpyttl <xpyttl_NOSPAM@earthling.net>
Message-ID: <1097s2s59imee51@corp.supernews.com>
Source record: 26405

"Michael Black" <et472@FreeNet.Carleton.CA> wrote in message >
> Because someone did write about their experiences years back, at
> least I think they had had success with those CDROMs under Linux.
> I've been meaning to go digging to try to find the post or posts,
> because now that I have a computer with a CDROM drive, obviously
> those QSTs on CDROM become tempting. And I've never had Windows
> running here.

The newer ARRL Periodicals CDs are all PDF files. There is one PDF per issue so it's pretty handy compared to a tiff file per page. I stuffed it into my Fedora box an read it with no problem.

..

3474. Re: surface mount soldering..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 19:21:06 UTC
From: "G.Beat" <now9spamgb@no.comcast.spam.net>
Message-ID: <CMSkc.9641$I%1.816554@attbi_s51>
Source record: 26406

"Bob Headrick" <bobh@proaxis.com> wrote in message
news:108vh03dfe90j42@corp.supernews.com...
>
> "G.Beat" <now9spamgb@no.comcast.spam.net> wrote in message
> news:yhPic.30933$aQ6.1632419@attbi_s51...
>> "zindazenda" <zen@lineisp.co.uk> wrote in message
>> news:1082856532.768434@smtp-1.griffin.com...
>> > can anyone recommend at diy way of flow soldering surface mount
>> > components??
>> > i ask as making somr boards up that are totally sm, and well i am going
>> > blind trying to solder them using iron!!
>
>> Here is a link for the "Ez-bake" approach to soldering.
>>
>> http://www.seattlerobotics.org/encoder/200006/oven_art.htm
>
> That looks like a good way to go, it would sure beat trying to solder
> individual leads, but... it looks like the minimum order quantity is 10
> tubes
> of solder, for $120 or so. (And these are the small 35g tubes. Digikey's
> are
> more like $800 for the minimum qty of 500g tubes.)
>
> Anyone know a source for small quantity (1-3 tubes) purchases?
>
> - 73 Bob W7OV
>

Call Wassco in California .. they will be my choice next month.

Future/Active use to have small supplies in the refrigerator at the Chicago
store --
unfortunately all USA stores closed in 2003.
Last day for Chicago store was Feb. 1, 2003 (Columbia reentry accident)

gb

3475. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 19:30:18 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <YfSdnT4IOfH_Zg7dRVn-uQ@ctc.net>
Source record: 26407
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Paul Burridge" <pb@notthisbit.osiris1.co.uk> wrote in message
news:mk87909cpdg7dq25dn24blfoph41mr2gpm@4ax.com...
> Hi,
>
> I have a spare RF signal generator that has an unmarked output from a
> type of socket I've never seen before. What's the simplest way of
> establishing its output impedance? I've had a few ideas but no doubt
> someone out there will know of something better, since I always seem
> to end up making unnecessary work for myself.
> Any suggestions?
>

The generators are more of a voltage source. They will deliver their rated output when loaded to the proper impedance. Load it with 50 ohms and see if it gives the rated output. If not try 70 ohms, or another value. One of the reasons for using a 6 db pad is that it helps isolate the impedance of the generator and receiver.

3476. Re: surface mount soldering..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 19:46:08 UTC
From: "G.Beat" <now9spamgb@no.comcast.spam.net>
Message-ID: <48Tkc.9109$0H1.998600@attbi_s54>
Source record: 26408
Body handling: Inline uuencoded payload not displayed: trans_1x1.gif

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:SguIFKBbNKkAFArZ@ifwtech.co.uk...
>
> For many irons, you can also buy fork-ended solder tips that bridge over
> the parts. I made one by cutting and filing an old tip, and it worked OK
> for parts removal. However, it would need some co-ordination to make the
> tip contact the two pads without also knocking the part out of place.

Yes, a number of SMT tips for Pace and Weller soldering irons/stations.

Weller TCP series
http://www.wassco.com/csmsurmounsm.html

Pace irons (3/16" tip)
http://store1.yimg.com/I/was_1789_9025999

> The toaster oven looks like a much better method for a whole-board
> assembly project, except for two key problems:
>
> 1. Solder paste is expensive

Depends on the size you are looking at. Yes, the large sizes can be
expensive.

The syringe sizes (35 g) are about what I pay for a 1 lb roll of solder
and are the only sizes that I purchase for small projects (less waste)
http://www.wassco.com/kessolsn.html

R276 No-Clean, 35g WAS-01-021403$12.95
R500 Water Soluble, 35g WAS-01-021603$12.95

> 2. Solder paste doesn't keep (seems to have about the same time constant
> as Horowitz & Hill's wet fish)

Ian, my brother is the buyer/shipping coordinator for a major fresh water
fish distributor in SE USA.
Missed plane connection in Anchorage, Alaska (polar route from Hong Kong to
Atlanta) ..
leads to frozen fish .. when you wanted live !

Wassco notifies all buyers of their shipment policies:
Solder Paste must ship overnight in a refrigerated condition.
We will contact you to discuss the extra freight charges that will apply.

> Those are big problems for occasional, low-volume users such as
> ourselves. So the questions are:
>

> 1. Where's a low-cost source of solder paste? (in various parts of the
> world)

Wassco is the recomemnded source for solder and tools Elecraft builders.
Of course this is California based. Maybe a talk to some of the UK
distibutors?

> 2. How can we either store it so it stays fresh; or re-constitute it
> after it's gorn orf?
>

Refrigerator - that's how I bought it at the Acitve Electronics stores in
US, before they closed.
I was also told they did not keep solder paste more than 2 to 3 months at
each store.

Store in a refrigerator away from your normal late night consumables .....
or that pasty taste in your mouth might be the last tube for your project.

Surface Mount Technology Assn.
http://smta.org/

Greg
w9gb

[Inline uuencoded payload not displayed: trans_1x1.gif]

3477. Re: URM 120

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 19:58:39 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BCB97911.5ADB%outhouse@midcoast.com>
Source record: 26409

Well, mine apparently has a little problem. The knob on top, which lets you select the power level, that knob turns a cam which raises or lowers the sensing element. Very nifty mechanism.
Now in my meter the shaft which holds the know spins in the cam and so obviously nothing happens. So I took the hole thing apart and fixed that problem and in the process you wish you had the description or maintenance instructions which would give you the exact distance of the sensing element for each power range etc.

So thats why I was asking.
And the thing is built beautifully, thats for sure, I just seem to have to recalibrate mine.
Maybe somebody else here has some documentation for the device.

73 Uwe

in article 9YudnaeFaPAsMw7dRVn-hw@ctc.net, Ralph Mowery at rmowery@ctc.net wrote on 5/1/04 10:03 AM:

> I have had one for several years. There is not much to it. Just be sure to
> remove the "shipping and storage" wire from the back of the meter if it is
> there before using it. It is a piece of springey bare wire across the meter
> terminals. It may not be on your meter. Very nice meter but the meter is
> very much dampened. It will take a while for it to reach the maximum value.
> Just pop in the slug that you need for the range and power level. It is the
> meter that has a SWR adjustment knob on it you turn it to the neasuerment
> jposition and find a range where it is off scale, then adjust to full scale
> and then turn the slug 180 deg to get the SWR. Or you could find a chart
> the Bird meter uses and get the swr off the chart for the ammount of forward
> and reverse power.
>
> "Uwe" <outhouse@midcoast.com> wrote in message
> news:BCB893D0.5AB9%outhouse@midcoast.com...
>> I just got a Struthers wattmeter/SWR meter at a hamfest, but no papers.
>>
>> Does anybody here have the instructions/service manual or would know where
>> to get it??
>>
>> Thanks Uwe
>>
>
>

3478. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 20:44:49 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <nr28909r81odcptjn442493g4ifii8t5u7@4ax.com>
Source record: 26410
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 01 May 2004 17:03:26 GMT, Jan Panteltje
<pNaonStpealmtje@yahoo.com> wrote:

>On a sunny day (Sat, 01 May 2004 14:19:59 +0100) it happened Paul Burridge
><pb@notthisbit.osiris1.co.uk> wrote in
><mk87909cpdg7dq25dn24blfoph41mr2gpm@4ax.com>:
>
>>Hi,
>>
>>I have a spare RF signal generator that has an unmarked output from a
>>type of socket I've never seen before. What's the simplest way of
>>establishing its output impedance? I've had a few ideas but no doubt
>>someone out there will know of something better, since I always seem
>>to end up making unnecessary work for myself.
>>Any suggestions?
>>
>Load it with 50 Ohms, and measure output voltage, remove load and measure
>again.
>If it is half, it is 50, else do the math.

Without doing a conjugate match and accounting for the impedance of
the voltmeter and the load, the best he'll be able to do is _assume_
that what he measures is what he's really got.

--
John Fields

3479. Re: LEDs that are visible in sunlight

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 20:50:47 UTC
From: irishlaide@aol.com
Message-ID: <7e06e0d1.0405011250.4da865e1@posting.google.com>
Source record: 26336
Cross-posted to:
sci.electronics.components,sci.electronics,sci.electronics.basics,alt.engineering.electrical,rec.radio.amateur.homebrew

try luminex.com

3480. Re: homebrew specialty paint finish

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 21:06:44 UTC
From: Volker Kerkhoff <volker@kadira-net.com>
Message-ID: <d3gdm1-24s.ln1@gateway.pa.homeip.net>
Source record: 26415

Uwe wrote:

> It is the kind of paint finish you see on Bolex and Arriflex movie cameras,
> I also see it on military style electronic gear, very resilient, black
> crinkly finish which also prevents the item from slipping out of your hand.

Hi,

sorry if I take a wrong guess, but by your name, I'd say yu're
german. In Germany, "Hammerite" markets these kinds of paints in
various colours.

vy 73 de Volker

3481. Re: ARRL CD ROMS under linux.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 21:11:59 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <2iUkc.52439$oN1.14139@bignews5.bellsouth.net>
Source record: 26411

xpyttl wrote:
> "Michael Black" <et472@FreeNet.Carleton.CA> wrote in message >
>
>>Because someone did write about their experiences years back, at
>>least I think they had had success with those CDROMs under Linux.
>>I've been meaning to go digging to try to find the post or posts,
>>because now that I have a computer with a CDROM drive, obviously
>>those QSTs on CDROM become tempting. And I've never had Windows
>>running here.
>
>
> The newer ARRL Periodicals CDs are all PDF files. There is one PDF per
> issue so it's pretty handy compared to a tiff file per page. I stuffed it
> into my Fedora box an read it with no problem.
>
> ..
>
>
Those CD's are the ones for a single year. AFAIK they have always been
pdf format. The multi year cd's are of the tiff/jpg image kind, with
a windows search engine.

3482. Re: URM 120

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 21:13:01 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <hoGdnVPq74nojgndRVn-ig@ctc.net>
Source record: 26413

"Uwe" <outhouse@midcoast.com> wrote in message
news:BCB97911.5ADB%outhouse@midcoast.com...
> Well, mine apparently has a little problem. The knob on top, which lets
you
> select the power level, that knob turns a cam which raises or lowers the
> sensing element. Very nifty mechanism.
> Now in my meter the shaft which holds the know spins in the cam and so
> obviously nothing happens. So I took the hole thing apart and fixed that
> problem and in the process you wish you had the description or maintenance
> instructions which would give you the exact distance of the sensing
element
> for each power range etc.
>
> So thats why I was asking.
> And the thing is built beautifully, thats for sure, I just seem to have to
> recalibrate mine.
> Maybe somebody else here has some documentation for the device.

Here is a scan of the procedure. YOu have to hook up a 50 ohm dummy load
and a known accurate meter after the urm120. That is the test setup referred
to as fig. 6. There is no exect distance, just turn the screw tuil
calibrated against a known standard.

ET61O-AA-OMI-O1O/81':1 SE502

NOTE

A precision RF Wattineter or a Calorimeter of the desired
accuracy may be
substituted for Items d, e and f.

6-12. PROCEDURE. Perform the following steps to calibrate a
coupler-detector
assembly:

1. Connect the test setup shown in figure 6-1.

2. Rotate the knurled slide knob on the coupler-detector assembly so
that the
arrow on the power selection plate points toward the 50-ohm
termination load.

3. Position the power range knob on the coupler-detector assembly to
the power
range within which the calibration is to be made.

4. Remove the two screws (9, figure 7-2) that secure the power selection plate
(10) to the slide knob assembly (12) , and lift the power selection plate (10)
over the power range knob (7).

S. Apply power to the RF power source, making certain that the RI' source is
operating within the frequency range of the coupler-detector assembly.

6. Compare the reading of the wattmeter with the reading on the test eguipsent
power meter, taking into account the coupling factor of the directional
coupler at the frequency being used.

Rotate the power range knob approximately 15' from its normal position in
order to line up the hole in the slide knob assembly (12, figure 7-2) with
the hole in the slide cam assembly (13). At each setting of the power range
knob the hole in the slide knob assembly (12) is directly in line with the
arrow on the power range knob.

Insert a 1/8-inch hexagonal (Allen) wrench through the holes until the
tuning knob lines up as indicated in Step 7, into the socket of the
calibrating screw (11).

Turn the calibrating screw (11) clockwise if the power reading of the
wattmeter is higher than the test equipment power mater, counterclockwise
if lower.

NOTE

If the correct reading can not be obtained within a half turn 0f the
calibrating screw, the diode must be replaced.

Reasemble the coupler-detector assembly.

3483. DAB Receiver.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 21:15:57 UTC
From: Andreu <afreixas.@at.terra.es>
Message-ID: <hsUkc.84595$A6.321643@telenews.teleline.es>
Source record: 26414

I have seen some DRM projects on the net, but none about how to homebrew
a FM/DAB receiver.
Is it such difficult to design and build one of them ?.
DAB receivers are now generally available in commercial form, so I think
there is also room for experimenters.

Andrew.

3484. Re: ladder filters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 21:33:18 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <ylUkc.45859$2v.44555@nwrdny02.gnilink.net>
Source record: 26416

Ken,
While rummaging through my archives, I found a link to the articles I
referenced. Let me know if you want them.

Joe
W3JDR

"W3JDR" <joe@roccis.com> wrote in message
news:8_4kc.39623$2v.2298@nwrdny02.gnilink.net...
> See "Ladder Crystal Filter Design", by J. A. Hardcastle, November 1980,
QST
> and "A Unified Approach to the Design of Crystal Ladder Filters", by Wes
> Hayward, May 1982, QST.
>
> Joe
> W3JDR
>
>
> "Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
> news:2mXjc.63157$Yw5.27065@bignews4.bellsouth.net...
> > I just got a deal on ebay for 8.3886 mhz crystals (414 pcs for $9.99).
> > Should be able to make a few good ssb and cw filters out of that!
> > They look like std microprocessor types (hc49/u holders) though this
> > isn't a common microprocessor frequency. Guess I'll start with 100pf
> > coupling caps, any good guess on what the termination resistance might
> > be? (I'm looking for a bw suitable for ssb, probably about 2.1khz).
> > Hope this frequency doesn't have any bad mixer products (but I can
> > always pick either high or low side injection if necessary).
>
>

3485. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 21:37:26 UTC
From: Frank Bemelman <f.bemelmanx@planet.invalid.nl>
Message-ID: <409417c4$0$25601$c3e8da3@news.astraweb.com>
Source record: 26417
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Jan Panteltje" <pNaonStpealmtje@yahoo.com> schreef in bericht
news:c70l9d$2c4$1@news.epidc.co.kr...
> On a sunny day (Sat, 01 May 2004 14:19:59 +0100) it happened Paul Burridge
> <pb@notthisbit.osiris1.co.uk> wrote in
> <mk87909cpdg7dq25dn24blfoph41mr2gpm@4ax.com>:
>
> >Hi,
> >
> >I have a spare RF signal generator that has an unmarked output from a
> >type of socket I've never seen before. What's the simplest way of
> >establishing its output impedance? I've had a few ideas but no doubt
> >someone out there will know of something better, since I always seem
> >to end up making unnecessary work for myself.
> >Any suggestions?
> >
> Load it with 50 Ohms, and measure output voltage, remove load and measure
> again.
> If it is half, it is 50, else do the math.

If it is half, you've got a funny generator.

--
Thanks, Frank.
(remove 'x' and 'invalid' when replying by email)

3486. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 21:55:28 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <m478909r8nvbctoumrhtsskt1vm4o8u0cg@4ax.com>
Source record: 26418
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 1 May 2004 23:37:26 +0200, "Frank Bemelman"
<f.bemelmanx@planet.invalid.nl> wrote:

>"Jan Panteltje" <pNaonStpealmtje@yahoo.com> schreef in bericht
>news:c70l9d$2c4$1@news.epidc.co.kr...
>> On a sunny day (Sat, 01 May 2004 14:19:59 +0100) it happened Paul Burridge
>> <pb@notthisbit.osiris1.co.uk> wrote in
>> <mk87909cpdg7dq25dn24blfoph41mr2gpm@4ax.com>:
>>
>> >Hi,
>> >
>> >I have a spare RF signal generator that has an unmarked output from a
>> >type of socket I've never seen before. What's the simplest way of
>> >establishing its output impedance? I've had a few ideas but no doubt
>> >someone out there will know of something better, since I always seem
>> >to end up making unnecessary work for myself.
>> >Any suggestions?
>> >
>> Load it with 50 Ohms, and measure output voltage, remove load and measure
>> again.
>> If it is half, it is 50, else do the math.
>
>If it is half, you've got a funny generator.

LOL!

--
John Fields

3487. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-01 23:48:16 UTC
From: Jan Panteltje <pNaonStpealmtje@yahoo.com>
Message-ID: <c71d0gemj1@news.epidc.co.kr>
Source record: 26419
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On a sunny day (Sat, 1 May 2004 23:37:26 +0200) it happened "Frank Bemelman"
<f.bemelmanx@planet.invalid.nl> wrote in
<409417c4$0$25601$c3e8da3@news.astraweb.com>:

>"Jan Panteltje" <pNaonStpealmtje@yahoo.com> schreef in bericht
>news:c70l9d$2c4$1@news.epidc.co.kr...
>> On a sunny day (Sat, 01 May 2004 14:19:59 +0100) it happened Paul Burridge
>> <pb@notthisbit.osiris1.co.uk> wrote in
>> <mk87909cpdg7dq25dn24blfoph41mr2gpm@4ax.com>:
>>
>> >Hi,
>> >
>> >I have a spare RF signal generator that has an unmarked output from a
>> >type of socket I've never seen before. What's the simplest way of
>> >establishing its output impedance? I've had a few ideas but no doubt
>> >someone out there will know of something better, since I always seem
>> >to end up making unnecessary work for myself.
>> >Any suggestions?
>> >
>> Load it with 50 Ohms, and measure output voltage, remove load and measure
>> again.
>> If it is half, it is 50, else do the math.
>
>If it is half, you've got a funny generator.
Why that?

3488. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 00:06:09 UTC
From: Frank Bemelman <f.bemelmanx@planet.invalid.nl>
Message-ID: <40943a9f$0$25628$c3e8da3@news.astraweb.com>
Source record: 26420
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Jan Panteltje" <pNaonStpealmtje@yahoo.com> schreef in bericht
news:c71d0gemj1@news.epidc.co.kr...
> On a sunny day (Sat, 1 May 2004 23:37:26 +0200) it happened "Frank
Bemelman"
> <f.bemelmanx@planet.invalid.nl> wrote in
> <409417c4$0$25601$c3e8da3@news.astraweb.com>:
>
> >"Jan Panteltje" <pNaonStpealmtje@yahoo.com> schreef in bericht
> >news:c70l9d$2c4$1@news.epidc.co.kr...
> >> On a sunny day (Sat, 01 May 2004 14:19:59 +0100) it happened Paul
Burridge
> >> <pb@notthisbit.osiris1.co.uk> wrote in
> >> <mk87909cpdg7dq25dn24blfoph41mr2gpm@4ax.com>:
> >>
> >> >Hi,
> >> >
> >> >I have a spare RF signal generator that has an unmarked output from a
> >> >type of socket I've never seen before. What's the simplest way of
> >> >establishing its output impedance? I've had a few ideas but no doubt
> >> >someone out there will know of something better, since I always seem
> >> >to end up making unnecessary work for myself.
> >> >Any suggestions?
> >> >
> >> Load it with 50 Ohms, and measure output voltage, remove load and
measure
> >> again.
> >> If it is half, it is 50, else do the math.
> >
> >If it is half, you've got a funny generator.

> Why that?

I expect amplitudes to double or at least rise, after
removing a load. Just nitpicking ;)

--
Thanks, Frank.
(remove 'x' and 'invalid' when replying by email)

3489. Re: surface mount soldering..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 00:21:33 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1083457297.836504@smtp-1.griffin.com>
Source record: 26421

well i have just made 12 boards holding 100 or so 0805, 223, 20sm dil.etc..
it took a day..
in the end i got out very small twezzers placed the components on board held
in place by small drop of super glue dispensed by end of tooth pick, and
held down by other end of pick till dry....
then soldered using small iron...
all worked first go...

BUT.. my eyes didn't half hurt by the end...

there must be a better way..ez-bake i dont think is it..any other ideas??

how is it done professionally..???

g0zen
"G.Beat" <now9spamgb@no.comcast.spam.net> wrote in message
news:48Tkc.9109$0H1.998600@attbi_s54...
> "Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
> news:SguIFKBbNKkAFArZ@ifwtech.co.uk...
> >
> > For many irons, you can also buy fork-ended solder tips that bridge over
> > the parts. I made one by cutting and filing an old tip, and it worked OK
> > for parts removal. However, it would need some co-ordination to make the
> > tip contact the two pads without also knocking the part out of place.
>
> Yes, a number of SMT tips for Pace and Weller soldering irons/stations.
>
> Weller TCP series
> http://www.wassco.com/csmsurmounsm.html
>
> Pace irons (3/16" tip)
> http://store1.yimg.com/I/was_1789_9025999
>
>
> > The toaster oven looks like a much better method for a whole-board
> > assembly project, except for two key problems:
> >
> > 1. Solder paste is expensive
>
> Depends on the size you are looking at. Yes, the large sizes can be
> expensive.
>
> The syringe sizes (35 g) are about what I pay for a 1 lb roll of solder
> and are the only sizes that I purchase for small projects (less waste)
> http://www.wassco.com/kessolsn.html

>
> R276 No-Clean, 35g WAS-01-021403$12.95
> R500 Water Soluble, 35g WAS-01-021603$12.95
>
> > 2. Solder paste doesn't keep (seems to have about the same time constant
> > as Horowitz & Hill's wet fish)
>
> Ian, my brother is the buyer/shipping coordinator for a major fresh water
> fish distributor in SE USA.
> Missed plane connection in Anchorage, Alaska (polar route from Hong Kong
to
> Atlanta) ..
> leads to frozen fish .. when you wanted live !
>
> Wassco notifies all buyers of their shipment policies:
> Solder Paste must ship overnight in a refrigerated condition.
> We will contact you to discuss the extra freight charges that will apply.
>
> > Those are big problems for occasional, low-volume users such as
> > ourselves. So the questions are:
> >
> > 1. Where's a low-cost source of solder paste? (in various parts of the
> > world)
>
> Wassco is the recomemnded source for solder and tools Elecraft builders.
> Of course this is California based. Maybe a talk to some of the UK
> distibutors?
>
> > 2. How can we either store it so it stays fresh; or re-constitute it
> > after it's gorn orf?
> >
>
> Refrigerator - that's how I bought it at the Acitve Electronics stores in
> US, before they closed.
> I was also told they did not keep solder paste more than 2 to 3 months at
> each store.
>
> Store in a refrigerator away from your normal late night consumables .....
> or that pasty taste in your mouth might be the last tube for your project.
>
> Surface Mount Technology Assn.
> http://smta.org/
>
> Greg
> w9gb
>
>
>

3490. Re: LEDs that are visible in sunlight

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 00:26:47 UTC
From: jason_hsu@my-deja.com
Message-ID: <f7d9a152.0405011626.6ad4861f@posting.google.com>
Source record: 26337
Cross-posted to:
sci.electronics.components,sci.electronics,sci.electronics.basics,alt.engineering.electrical,rec.radio.amateur.homebrew

"Dave VanHorn" <dvanhorn@cedar.net> wrote in message
news:<RPCdncfCgPFbIA7dRVn-uQ@comcast.com>...
>
> It's not such a worry. I have SMD leds from chicago miniature, in a product
> with light pipes, that are quite visible outdoors in full sun.
> www.mobilecommand.net

What are the specs? How many mcds? What is the viewing angle?

Jason Hsu, AG4DG
http://www.jasonhsu.com/ee.html
http://groups.yahoo.com/group/eeham/
http://groups.yahoo.com/group/resume_hyperinflation_fighters/
http://groups.yahoo.com/group/gmu-ece-control/

3491. Re: LEDs that are visible in sunlight

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 00:35:16 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <1098ghth465r1fd@corp.supernews.com>
Source record: 26338
Cross-posted to:
sci.electronics.components,sci.electronics,sci.electronics.basics,alt.engineering.electrical,rec.radio.amateur.homebrew

Lewin A.R.W. Edwards wrote:

>>>What LEDs do you use for a display that needs to be readable in
>>>sunlight?Obviously, regular LEDs are too dim. From what I have heard,
>>
>>Perhaps you should think about using an LCD? More involved to drive,
>>but certainly visible in sunlight!
>
>
> Uhhh...
>
> Take a walk through the strip in Las Vegas some time, count the LED
> billboards. Count the plasma billboards. Count the LCD billboards.
> You'll be able to count LCDs on the fingers of one elbow.

Take a walk through the electronics department of your local store.
Count the LED calculators. Count the plasma calculators. Count the LCD
calculators.

Maybe I'm wrong but I thought the OP was talking about handheld, battery
powered equipment.

If he's building stoplights, yes LED's are the right choice.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

3492. Re: ladder filters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 00:47:10 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <4094450E.7000400@bellsouth.net>
Source record: 26422

W3JDR wrote:
> Ken,
> While rummaging through my archives, I found a link to the articles I
> referenced. Let me know if you want them.
>
> Joe
> W3JDR
>
I don't seem to have either QST in my collection (there are a few years
from 1980-1983 I'm missing). So yes thanks!

>
>
> "W3JDR" <joe@roccis.com> wrote in message
> news:8_4kc.39623$2v.2298@nwrdny02.gnilink.net...
>
>>See "Ladder Crystal Filter Design", by J. A. Hardcastle, November 1980,
>
> QST
>
>>and "A Unified Approach to the Design of Crystal Ladder Filters", by Wes
>>Hayward, May 1982, QST.
>>
>>Joe
>>W3JDR
>>
>>
>>"Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
>>news:2mXjc.63157$Yw5.27065@bignews4.bellsouth.net...
>>
>>>I just got a deal on ebay for 8.3886 mhz crystals (414 pcs for $9.99).
>>>Should be able to make a few good ssb and cw filters out of that!
>>>They look like std microprocessor types (hc49/u holders) though this
>>>isn't a common microprocessor frequency. Guess I'll start with 100pf
>>>coupling caps, any good guess on what the termination resistance might
>>>be? (I'm looking for a bw suitable for ssb, probably about 2.1khz).
>>>Hope this frequency doesn't have any bad mixer products (but I can
>>>always pick either high or low side injection if necessary).
>>
>>
>
>

3493. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 01:15:47 UTC
From: Jan Panteltje <pNaonStpealmtje@yahoo.com>
Message-ID: <c71i4g$hf2$1@news.epidc.co.kr>
Source record: 26423
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On a sunny day (Sun, 2 May 2004 02:06:09 +0200) it happened "Frank Bemelman"
<f.bemelmanx@planet.invalid.nl> wrote in
<40943a9f$0$25628$c3e8da3@news.astraweb.com>:

>"Jan Panteltje" <pNaonStpealmtje@yahoo.com> schreef in bericht
>news:c71d0gemj1@news.epidc.co.kr...
>> On a sunny day (Sat, 1 May 2004 23:37:26 +0200) it happened "Frank
>Bemelman"
>> <f.bemelmanx@planet.invalid.nl> wrote in
>> <409417c4$0$25601$c3e8da3@news.astraweb.com>:
>>
>> >"Jan Panteltje" <pNaonStpealmtje@yahoo.com> schreef in bericht
>> >news:c70l9d$2c4$1@news.epidc.co.kr...
>> >> On a sunny day (Sat, 01 May 2004 14:19:59 +0100) it happened Paul
>Burridge
>> >> <pb@notthisbit.osiris1.co.uk> wrote in
>> >> <mk87909cpdg7dq25dn24blfoph41mr2gpm@4ax.com>:
>> >>
>> >> >Hi,
>> >> >
>> >> >I have a spare RF signal generator that has an unmarked output from a
>> >> >type of socket I've never seen before. What's the simplest way of
>> >> >establishing its output impedance? I've had a few ideas but no doubt
>> >> >someone out there will know of something better, since I always seem
>> >> >to end up making unnecessary work for myself.
>> >> >Any suggestions?
>> >> >
>> >> Load it with 50 Ohms, and measure output voltage, remove load and
>measure
>> >> again.
>> >> If it is half, it is 50, else do the math.
>> >
>> >If it is half, you've got a funny generator.
>
>> Why that?
>
>I expect amplitudes to double or at least rise, after
>removing a load. Just nitpicking ;)
Yes - sentence construction could have been more clear,
it should have been inferred as 'If it is half *before you removed it*
now that would be wrong too, 'If it WAS half' OK.
No, actually it was correct, cause 'it' referred to the first measurement.
Did you collect many nits while picking ;-)?

3494. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 02:43:18 UTC
From: john_c@tpg.com.au
Message-ID: <40945ea7.16004871@News.individual.net>
Source record: 26424
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 01 May 2004 14:19:59 +0100, Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote:

>Hi,
>
>I have a spare RF signal generator that has an unmarked output from a
>type of socket I've never seen before. What's the simplest way of
>establishing its output impedance? I've had a few ideas but no doubt
>someone out there will know of something better, since I always seem
>to end up making unnecessary work for myself.
>Any suggestions?
>
>p.
>--
>
>The BBC: licenced at public expense to spread lies.

Hello Paul,
what is the brand name and model number of your RF signal generator.
Can you descibe the socket to us.
Regards,
John Crighton
Sydney

3495. Re: Book on Homebrew Radio -- Free!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 02:53:03 UTC
From: wabbit@grnco.net
Message-ID: <pjo890d3qqp0c9htnkm5h26e1ebmrpktkt@4ax.com>
Source record: 26425

Thank you
On Sat, 17 Apr 2004 14:29:15 -0700, John Miles
<jmiles@pop.removethistomailme.net> wrote:

>In article <97f305da.0404160529.41caa467@posting.google.com>,
>n2cqr@clix.pt says...
>> Frank Harris, K0IYE, has written a really wonderful book on
>> homebrewing ham radio gear. "Crystal Sets to Sideband --
>> A Guide to Building a Amateur Radio Station" will provide
>> lots of ideas and inspiration to solder melters everywhere.
>> I really enjoyed it.
>>
>> Frank has made it available free of charge for private,
>> not-for-profit purposes. Download it free at
>>
>> http://www.qsl.net/k3pd/book.html
>>
>> Be sure to send feedback to Frank at Frwharris@aol.com
>>
>> 73 Bill M0HBR
>>
>
>Nice piece of work! Reminds me of the late Jim Fisk's writings.
>
>-- jm
>
>---
>http://www.qsl.net/ke5fx
>Note: My E-mail address has been altered to avoid spam
>---

3496. Re: LEDs that are visible in sunlight

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 05:36:26 UTC
From: don@manx.misty.com
Message-ID: <slrnc9926q.8rr.don@manx.misty.com>
Source record: 26339
Cross-posted to:
sci.electronics.components,sci.electronics,sci.electronics.basics,alt.engineering.electrical,rec.radio.amateur.homebrew

In article <f7d9a152.0404302033.907106b@posting.google.com>, Jason Hsu wrote:
>What LEDs do you use for a display that needs to be readable in
>sunlight?Obviously, regular LEDs are too dim. From what I have heard,
>the LEDs should be at least 2000 mcds in brightness, have at least a
>60-degree viewing
>angle, and have clear or diffused lenses.
>
>But for all the sources of LEDs, the >=2000 mcd LEDs have viewing
>angles that are no larger than about 20 degrees.

30 degree ~5,000 mcd (at 20 mA) and 45 degree 2,000-3,000 mcd (at 20 mA)
are now available in orangish red, reddish orange, green and white.

60 degrees is less common for high brightness LEDs and usually made with a
diffused package, but should be able to exceed 1,000 mcd.

There are rectangular flat-tip packages with a nominal viewing angle of
100-120 degrees and those get around 500 mcd, maybe somewhat more
nowadays (at least for green and white).

- Don Klipstein (don@misty.com)

3497. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 09:45:40 UTC
From: Frank Bemelman <f.bemelmanx@planet.invalid.nl>
Message-ID: <4094c26b$0$78635$c3e8da3@news.astraweb.com>
Source record: 26426
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

```
"Jan Panteltje" <pNaonStpealmtje@yahoo.com> schreef in bericht
news:c71i4g$hf2$1@news.epidc.co.kr...
> On a sunny day (Sun, 2 May 2004 02:06:09 +0200) it happened "Frank
Bemelman"
> <f.bemelmanx@planet.invalid.nl> wrote in
> <40943a9f$0$25628$c3e8da3@news.astraweb.com>:
>
> >"Jan Panteltje" <pNaonStpealmtje@yahoo.com> schreef in bericht
> >news:c71d0g$emj$1@news.epidc.co.kr...
> >> On a sunny day (Sat, 1 May 2004 23:37:26 +0200) it happened "Frank
> >Bemelman"
> >> <f.bemelmanx@planet.invalid.nl> wrote in
> >> <409417c4$0$25601$c3e8da3@news.astraweb.com>:
> >>
> >> >"Jan Panteltje" <pNaonStpealmtje@yahoo.com> schreef in bericht
> >> >news:c70l9d$2c4$1@news.epidc.co.kr...
> >> >> On a sunny day (Sat, 01 May 2004 14:19:59 +0100) it happened Paul
> >Burridge
> >> >> <pb@notthisbit.osiris1.co.uk> wrote in
> >> >> <mk87909cpdg7dq25dn24blfoph41mr2gpm@4ax.com>:
> >> >>
> >> >> >Hi,
> >> >> >
> >> >> >I have a spare RF signal generator that has an unmarked output from
a
> >> >> >type of socket I've never seen before. What's the simplest way of
> >> >> >establishing its output impedance? I've had a few ideas but no
doubt
> >> >> >someone out there will know of something better, since I always
seem
> >> >> >to end up making unnecessary work for myself.
> >> >> >Any suggestions?
> >> >> >
> >> >> Load it with 50 Ohms, and measure output voltage, remove load and
> >measure
> >> >> again.
> >> >> If it is half, it is 50, else do the math.
> >> >
> >> >If it is half, you've got a funny generator.
> >>
> >> Why that?
> >
> >I expect amplitudes to double or at least rise, after
```

> >removing a load. Just nitpicking ;)
> Yes - sentence construction could have been more clear,
> it should have been inferred as 'If it is half *before you removed it*
> now that would be wrong too, 'If it WAS half' OK.
> No, actually it was correct, cause 'it' referred to the first measurement.
> Did you collect many nits while picking ;-)?

Well, I also wondered what it means to Paul, once he has
figured out that output impedance. Will it change his life
dramatically... ;)

--
Thanks, Frank.
(remove 'x' and 'invalid' when replying by email)

3498. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 10:02:41 UTC
From: Fred Bartoli <fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo>
Message-ID: <4094c744$0$27674$636a15ce@news.free.fr>
Source record: 26427
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Frank Bemelman" <f.bemelmanx@planet.invalid.nl> a crit dans le message
news: 4094c26b$0$78635$c3e8da3@news.astraweb.com...
>
> Well, I also wondered what it means to Paul, once he has
> figured out that output impedance. Will it change his life
> dramatically... ;)
>

Sure. He now have a nice opportunity to ask the same question once more ;-)

Thanks,
Fred.

BTW, got some news of our goldmine order ?
Not that I'm longing to have it, but they do seem to be waaaay slooooow....

3499. Re: homebrew specialty paint finish

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 10:24:36 UTC
From: Highland Ham <xygm0csz.wvkn6wh@ntlworld.com>
Message-ID: <r2clc.521$5d5.241@newsfe3-win.server.ntli.net>
Source record: 26442

In Germany, "Hammerite" markets these kinds of paints in
> various colours.
==========
Same in the UK

Frank GM0CSZ / KN6WH

3500. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 10:54:14 UTC
From: Frank Bemelman <f.bemelmanx@planet.invalid.nl>
Message-ID: <4094d280$0$78612$c3e8da3@news.astraweb.com>
Source record: 26428
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Fred Bartoli"
<fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo> schreef in
bericht news:4094c744$0$27674$636a15ce@news.free.fr...
>
> "Frank Bemelman" <f.bemelmanx@planet.invalid.nl> a crit dans le message
> news: 4094c26b$0$78635$c3e8da3@news.astraweb.com...
> >
> > Well, I also wondered what it means to Paul, once he has
> > figured out that output impedance. Will it change his life
> > dramatically... ;)
> >
>
> Sure. He now have a nice opportunity to ask the same question once more
;-)
>
> Thanks,
> Fred.
>
>
> BTW, got some news of our goldmine order ?
> Not that I'm longing to have it, but they do seem to be waaaay
slooooow....

```
The last news was it got shipped on 21 april. I expect it 'real soon now'.

--
Thanks, Frank.
(remove 'x' and 'invalid' when replying by email)
```

3501. Re: DAB Receiver.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 11:37:33 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.0000001d.0039dc6e@btinternet.com>
Source record: 26429

Hi,

> I have seen some DRM projects on the net, but none about how to homebrew
> a FM/DAB receiver.
> Is it such difficult to design and build one of them ?.
> DAB receivers are now generally available in commercial form, so I think
> there is also room for experimenters.

A discrete-component DAB receiver is not a project to be undertaken lightly. On the other hand here in the UK, DAB receivers are now very common in the stores due I believe to an outbreak of chip-sets by such luminaries as Philips.

So Google for Philips/SAA3500/PDF and you should get a feeling for what is involved.

Cheers - Joe

3502. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 13:08:38 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <c0r990hd965opp60lo5te4ccp68t9pit5b@4ax.com>
Source record: 26430
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 02 May 2004 02:43:18 GMT, john_c@tpg.com.au (John Crighton)
wrote:

>Hello Paul,
>what is the brand name and model number of your RF signal generator.
>Can you descibe the socket to us.

Thanks John (and others).

The model number ain't gonna mean a lot to anyone as this is a very
old piece of kit (1950s) that I keep mainly out of a sense of
reverence for the past. :-) It's an old ex-RAF AVO. I have posted a
picture of the socket to a.b.s.e under this same thread title...
BTW, there's a 5p coin shown for scale, but since that won't mean much
to anyone outside Britain, the outer of the socket is approx. 1" in
diameter (which won't mean much to anyone in europe but it serves them
right for adopting the metric system.:-))

--

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3503. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 13:09:44 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <9qr990h62kh813ioqof1qboj2np4iqlq7o@4ax.com>
Source record: 26431
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 1 May 2004 15:30:18 -0400, "Ralph Mowery" <rmowery@ctc.net>
wrote:

>The generators are more of a voltage source. They will deliver their rated
>output when loaded to the proper impedance. Load it with 50 ohms and see if
>it gives the rated output. If not try 70 ohms, or another value. One of
>the reasons for using a 6 db pad is that it helps isolate the impedance of
>the generator and receiver.

My main sig gen states "output EMF using 6dB pad" next to the socket.
WTF is a "6dB pad"?
--

The BBC: licenced at public expense to spread lies.

3504. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 13:09:48 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <vcs9901986ejp1649r49hrvvq1vddioaiu@4ax.com>
Source record: 26432
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sat, 01 May 2004 17:03:26 GMT, Jan Panteltje
<pNaonStpealmtje@yahoo.com> wrote:

>On a sunny day (Sat, 01 May 2004 14:19:59 +0100) it happened Paul Burridge
><pb@notthisbit.osiris1.co.uk> wrote in
><mk87909cpdg7dq25dn24blfoph41mr2gpm@4ax.com>:
>
>>Hi,
>>
>>I have a spare RF signal generator that has an unmarked output from a
>>type of socket I've never seen before. What's the simplest way of
>>establishing its output impedance? I've had a few ideas but no doubt
>>someone out there will know of something better, since I always seem
>>to end up making unnecessary work for myself.
>>Any suggestions?
>>
>Load it with 50 Ohms, and measure output voltage, remove load and measure
>again.
>If it is half, it is 50, else do the math.

Or double, presumably. :-)
Well there you go; I knew there must be a more elegant solution to the
one I dreamed up which basically involved taking a spread of 10 carbon
resistors of from 10 - 1000 ohms and measuring the applied voltage
across each, then arriving at power transferred in each by V^2/R;
drawing a graph of the results and finding the point of maximum power
delivered.
--

The BBC: licenced at public expense to spread lies.

3505. Need Opinions Please....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 13:10:58 UTC
From: Biz WD=?ISO-8859-1?B?2A==?=HCO <wd0hco@ev1.net>
Message-ID: <BCBA5D92.E894%wd0hco@ev1.net>
Source record: 26433

Iï¿½m posting this just on the Boat Anchors, Homebrew and Antique radio-phono newsgroups.

Last month at a garage sale ï¿½ I came across a large stack of Popular Electronics and other electronic magazines from the 50ï¿½s 60ï¿½s and 70ï¿½s that were about to be thrown away.

Reading them has been a hoot! Unfortunately, I donï¿½t have the space to store them but I still would like to keep reading them.

So, I plan to scan them by month on CD.

One month = One CD.

I will scan them in both Mac PICT format and Windows BMP format with no compression. Most scanned images like QST CDï¿½s are in TIFF or JPEG format which usually pretty bad for scanned paper.

Yes BMP and PICT take a bit more data ï¿½ but with a 600 Meg CD, I should be able to get an entire month with room to spare.

I have written a very nice program to view PICT files for the Mac. I write my programs in SmallTalk which is object oriented so I can use the same objects and come up with a WINDOWS BMP version. It wonï¿½t be easy but it could be done.

The question isï¿½ would anyone like a copy?

The idea would be to send out the current month and keep things interesting by choosing various years and sending it out once a month.

Like 1956 for June and 1966 for July and so on.

I plan to scan them cover to cover and keep all the ads, (which is part of the fun). To get perfect scans, I will have to destroy the binding and carefully take apart each page to be scanned.

Itï¿½ll be a lot of work.

I figure $3 per CD will cover the cost and postage.

No subscriptions, no eBay auctions, This offer is only for these three newsgroups.

I am looking for opinions or interest only - no orders at this time ï¿½

Please email me.

If no one is interested ï¿½ Iï¿½ll only scan it in Mac format and keep them to myself.

There will also be an upper limit ï¿½ I donï¿½tï¿½ want to spend most of the day burning CDï¿½s.

This is just for a few folks wanting to re-live the good old days in electronics before computers and "outsourcing American jobs to communist or socialist nations".

- Biz WDï¿½HCO

3506. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 14:04:33 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <0ev990h6b88dsgh97aavddl0rpcj5phk44@4ax.com>
Source record: 26434
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 02 May 2004 14:09:44 +0100, Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote:

>On Sat, 1 May 2004 15:30:18 -0400, "Ralph Mowery" <rmowery@ctc.net>
>wrote:
>
>>The generators are more of a voltage source. They will deliver their rated
>>output when loaded to the proper impedance. Load it with 50 ohms and see if
>>it gives the rated output. If not try 70 ohms, or another value. One of
>>the reasons for using a 6 db pad is that it helps isolate the impedance of
>>the generator and receiver.
>
>My main sig gen states "output EMF using 6dB pad" next to the socket.
>WTF is a "6dB pad"?

A 6dB attenuator.

--
John Fields

3507. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 14:20:04 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <l9CdnXjL-OuzmQjdRVn-jw@ctc.net>
Source record: 26435
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

> My main sig gen states "output EMF using 6dB pad" next to the socket.
> WTF is a "6dB pad"?
> --

A pad is usually 3 resistors in a small container. They can be a T or a Pi type. This is the way the resistors are configured in the pad. You may also see them referred to as an attenuator. The number 6 db is how much the pad reduces the signal in power. You can get them from about .5 db to 20 db. They have to be used for the impedance they are rated at. They are for reducing the signal level and also to help isolate small differences in impedance.
For the calibration to be accurate on your generator it sounds like the scale is calibrated so you need the 6 db pad after it. A 5 db pad will reduce the power by a factor of 4 or a voltage by a factor of 2.

3508. Re: LEDs that are visible in sunlight

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 14:38:28 UTC
From: Dave VanHorn <dvanhorn@cedar.net>
Message-ID: <0OudnRQ4UuszmgjdRVn-hg@comcast.com>
Source record: 26340
Cross-posted to:
sci.electronics.components,sci.electronics,sci.electronics.basics,alt.engineering.electrical,rec.radio.amateur.homebrew

"Jason Hsu" <jason_hsu@my-deja.com> wrote in message
news:f7d9a152.0405011626.6ad4861f@posting.google.com...
> "Dave VanHorn" <dvanhorn@cedar.net> wrote in message
news:<RPCdncfCgPFbIA7dRVn-uQ@comcast.com>...
> >
> > It's not such a worry. I have SMD leds from chicago miniature, in a
product
> > with light pipes, that are quite visible outdoors in full sun.
> > www.mobilecommand.net
>
> What are the specs? How many mcds? What is the viewing angle?

CMDA5-1 is the part number.
The MCD rating is not spectacular, but they are surprisingly bright, and
quite visible in full summer sun.

3509. Re: Need Opinions Please....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 15:08:25 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <W48lc.63216$Uz1.52684@bignews3.bellsouth.net>
Source record: 26436

Biz WDï¿½HCO wrote:
> Iï¿½m posting this just on the Boat Anchors, Homebrew and Antique radio-phono
> newsgroups.
>
> Last month at a garage sale ï¿½ I came across a large stack of Popular
> Electronics and other electronic magazines from the 50ï¿½s 60ï¿½s and 70ï¿½s that
> were about to be thrown away.
>
> Reading them has been a hoot! Unfortunately, I donï¿½t have the space to store
> them but I still would like to keep reading them.
>
> So, I plan to scan them by month on CD.
>
> One month = One CD.
>
> I will scan them in both Mac PICT format and Windows BMP format with no
> compression. Most scanned images like QST CDï¿½s are in TIFF or JPEG format
> which usually pretty bad for scanned paper.
>
> Yes BMP and PICT take a bit more data ï¿½ but with a 600 Meg CD, I should be
> able to get an entire month with room to spare.
>
> I have written a very nice program to view PICT files for the Mac. I write
> my programs in SmallTalk which is object oriented so I can use the same
> objects and come up with a WINDOWS BMP version. It wonï¿½t be easy but it
> could be done.
>
> The question isï¿½ would anyone like a copy?
>
> The idea would be to send out the current month and keep things interesting
> by choosing various years and sending it out once a month.
>
> Like 1956 for June and 1966 for July and so on.
>
> I plan to scan them cover to cover and keep all the ads, (which is part of
> the fun). To get perfect scans, I will have to destroy the binding and
> carefully take apart each page to be scanned.
>
> Itï¿½ll be a lot of work.
>
> I figure $3 per CD will cover the cost and postage.
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> No subscriptions, no eBay auctions, This offer is only for these three
> newsgroups.

>
> I am looking for opinions or interest only - no orders at this time ï¿½
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> Please email me.
>
> If no one is interested ï¿½ Iï¿½ll only scan it in Mac format and keep them to
> myself.
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> There will also be an upper limit ï¿½ I donï¿½tï¿½ want to spend most of the day
> burning CDï¿½s.
>
> This is just for a few folks wanting to re-live the good old days in
> electronics before computers and "outsourcing American jobs to communist or
> socialist nations".
>
>
> - Biz WDï¿½HCO
>
I think I might be interrested in some of them. Let us know exactly
what you have. I also have some old pop'tronics mags that I might think
of scanning myself (maybe have some you don't). Also some old
Electronics Illustrated mags. Being a Linux person, I think the bmp
format would be better for me than the PICT format.

If you get over run with requests maybe someone with more time on their
hands could duplicate your CD's for you (second source?). And maybe
someone out there with large BW could post the iso images on the web (a
month at a time for the current cd?).

I'm not sure why the .tiff and .jpg formats are a problem, the QST view
scans don't look too bad, and some of the problem seems to be they
were made from scans of microfilms of poorly stored old magazines!
Pehaps someone with some experience using image software can comment.

3510. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 16:35:08 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <i75a90p9m5mak260qkb3imnkn6jmre803s@4ax.com>
Source record: 26437
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 02 May 2004 09:04:33 -0500, John Fields
<jfields@austininstruments.com> wrote:

>On Sun, 02 May 2004 14:09:44 +0100, Paul Burridge
><pb@notthisbit.osiris1.co.uk> wrote:
>
>>On Sat, 1 May 2004 15:30:18 -0400, "Ralph Mowery" <rmowery@ctc.net>
>>wrote:
>>
>>>The generators are more of a voltage source. They will deliver their rated
>>>output when loaded to the proper impedance. Load it with 50 ohms and see if
>>>it gives the rated output. If not try 70 ohms, or another value. One of
>>>the reasons for using a 6 db pad is that it helps isolate the impedance of
>>>the generator and receiver.
>>
>>My main sig gen states "output EMF using 6dB pad" next to the socket.
>>WTF is a "6dB pad"?
>
>---
>A 6dB attenuator.

Also, less commonly, a device used to match the impedance of a
generator to the impedance of a transmission line or a load, or the
impedance of a transmission line to the impedance of a load.

The impedance of the generator, line, and/or load are assumed to be
purely resistive, and there is always loss associated with the
transformation. Devices which exhibit the least loss are called
"minimum loss pads", and

http://www.maxim-ic.com/appnotes.cfm/appnote_number/972

gives a good description of the process involved in designing one.

The reference given to Bruno Weinschel and the ITT handbook (as we
old-timers call it) is particularly good, and if you're interested in
RF (or just about anything else...) and you can buy a copy of it you
should.

BTW, since a pad is usually rated in terms of the power it's supposed
to lose between its input and its output, the reference to "output
EMF" on your generator may be what it supposed to be with a 3dB pad on
its output.

Easy way to find out would be to build a 3dB and a 6dB pad to find out. For a 50 ohm tee pad, here are the resistor values you'll need for -3dB:

```
0dBIN>--[8.55]-+-[8.55]-->-3dBOUT
|
[141.93]
|
GND>-----------+-----------><GND
```

and for -6dB:

```
0dBIN>--[16.61]-+-[16.61]-->-3dBOUT
|
[66.93]
|
GND>------------+-----------><GND
```

The input goes directly to your generator, (assuming its output impedance is 50+j0 ohms) a 50 ohm resistor gets connected across the output of the pad, and you'll measure the voltage across the 50 ohm resistor.

Use non-inductive resistors (carbon comp if you can get them) and keep the leads short. That is, ********KEEP THE LEADS SHORT*********.

--
John Fields

3511. Re: DAB Receiver.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 16:47:53 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.0000001e.000ae5a2@btinternet.com>
Source record: 26438

Hi,

To get an idea of what would be involved, do a Google
for the Philips SAA3500 chip-set. This my second reply as
the first seems to have disappeared into a newsgroup black
hole.

Cheers - Joe

3512. Re: ladder filters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 17:06:38 UTC
From: Eamon Skelton <Xnospam@oceanfree.net>
Message-ID: <pan.2004.05.02.17.06.38.675440@oceanfree.net>
Source record: 26439

On Sat, 01 May 2004 20:47:10 -0400, Ken Scharf wrote:

> I don't seem to have either QST in my collection (there are a few years
> from 1980-1983 I'm missing). So yes thanks!

http://www.cqham.ru/ftp2/QST78_82LadderFlr.djvu

73, Ed. EI9GQ.

--
Remove 'X' to reply by E-mail.
Linux 2.6.5

3513. Re: Need Opinions Please....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 18:14:02 UTC
From: Roger and Ute Brown <rogerbrown@gci.net>
Message-ID: <109ai5dmdalpo83@corp.supernews.com>
Source record: 26441

Biz,

Why don't you just scan one each month and have the file available for download someplace for a period of time. That way we can pick and choose the months that interest us and won't have any need for intermediate media or the costs of same?

Roger, KL7Q

Biz WD&#65533;HCO <wd0hco@ev1.net> wrote in message news:BCBA5D92.E894%wd0hco@ev1.net...
> I&#65533;m posting this just on the Boat Anchors, Homebrew and Antique radio-phono
> newsgroups.
>
> Last month at a garage sale &#65533; I came across a large stack of Popular
> Electronics and other electronic magazines from the 50&#65533;s 60&#65533;s and 70&#65533;s that
> were about to be thrown away.
>
> Reading them has been a hoot! Unfortunately, I don&#65533;t have the space to store
> them but I still would like to keep reading them.
>
> So, I plan to scan them by month on CD.
>
> One month = One CD.
>
> I will scan them in both Mac PICT format and Windows BMP format with no
> compression. Most scanned images like QST CD&#65533;s are in TIFF or JPEG format
> which usually pretty bad for scanned paper.
>
> Yes BMP and PICT take a bit more data &#65533; but with a 600 Meg CD, I should be
> able to get an entire month with room to spare.
>
> I have written a very nice program to view PICT files for the Mac. I write
> my programs in SmallTalk which is object oriented so I can use the same
> objects and come up with a WINDOWS BMP version. It won&#65533;t be easy but it
> could be done.
>
> The question isS would anyone like a copy?
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> The idea would be to send out the current month and keep things interesting

> by choosing various years and sending it out once a month.
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> Like 1956 for June and 1966 for July and so on.
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> the fun). To get perfect scans, I will have to destroy the binding and
> carefully take apart each page to be scanned.
>
> It’ll be a lot of work.
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> I figure $3 per CD will cover the cost and postage.
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> No subscriptions, no eBay auctions, This offer is only for these three
> newsgroups.
>
> I am looking for opinions or interest only - no orders at this time ’
>
> Please email me.
>
> If no one is interested ’ I’ll only scan it in Mac format and keep them to
> myself.
>
> There will also be an upper limit ’ I don’t’ want to spend most of the day
> burning CD’s.
>
> This is just for a few folks wanting to re-live the good old days in
> electronics before computers and "outsourcing American jobs to communist
or
> socialist nations".
>
>
> - Biz WD’HCO
>

3514. Re: Need Opinions Please....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 18:48:23 UTC
From: fmmck@aol.com
Message-ID: <20040502144823.12307.00000240@mb-m27.aol.com>
Source record: 26440

<< I will scan them in both Mac PICT format and Windows BMP format with no compression. Most scanned images like QST CD1s are in TIFF or JPEG format which usually pretty bad for scanned paper. >>

Biz-

The reason you don't like the TIFF or JPEG scans, is because they are bad scans! If done at a high enough resolution, TIFF is close to the best you can do. JPEG compresses the images to reduce file size, but will degrade them if you go too far.

Although I am using a Macintosh, I think you are wasting your time with PICT and BMP formats. I would recommend scanning to TIFF and converting to JPEG for the final product, unless you can fit both TIFF and a good JPEG on one CD. If your scans have good detail, there may be more data than you expect.

A format that may work with the widest selection of systems, is Adobe Acrobat PDF. That may be the best way to consolidate all of an issue's pages into a single document. Many of the equipment manuals on the net are in that format, and some have extremely fine detail.

73, Fred, K4DII

3515. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 20:18:01 UTC
From: Highland Ham <xygm0csz.wvkn6wh@ntlworld.com>
Message-ID: <l7Alc.331$PU.19@newsfe6-gui.server.ntli.net>
Source record: 26268
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

> The model number ain't gonna mean a lot to anyone as this is a very
> old piece of kit (1950s) that I keep mainly out of a sense of
> reverence for the past. :-) It's an old ex-RAF AVO. I have posted a
> picture of the socket to a.b.s.e under this same thread title...
> BTW, there's a 5p coin shown for scale, but since that won't mean much
> to anyone outside Britain, the outer of the socket is approx. 1" in
> diameter (which won't mean much to anyone in europe but it serves them
> right for adopting the metric system.:-))
==========
Since Britain is part of Europe you probably mean 'anyone in continental
europe'

Just for your info ,the metric system was introduced /imposed by Napoleon
(eg more than 200 years ago)
For once he did the right thing ;) .

Frank GM0CSZ / KN6WH

3516. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 21:26:00 UTC
From: John Jardine <john@jjdesigns.fsnet.co.uk>
Message-ID: <c73ofb$n1a$1@news5.svr.pol.co.uk>
Source record: 26443
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Paul Burridge <pb@notthisbit.osiris1.co.uk> wrote in message
news:mk87909cpdg7dq25dn24blfoph41mr2gpm@4ax.com...
> Hi,
>
> I have a spare RF signal generator that has an unmarked output from a
> type of socket I've never seen before. What's the simplest way of
> establishing its output impedance? I've had a few ideas but no doubt
> someone out there will know of something better, since I always seem
> to end up making unnecessary work for myself.
> Any suggestions?
>
> p.
> --
>
> The BBC: licenced at public expense to spread lies.

Those ex-military AVO's were really nice g.p. signal generators though could never afford one. Seem to remember they were 50ohms out. The o/p socket and plug were standard 50's military chic and still available.
regards
john

3517. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 22:37:28 UTC
From: john_c@tpg.com.au
Message-ID: <40957040.3260997@News.individual.net>
Source record: 26444
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 02 May 2004 14:08:38 +0100, Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote:

>On Sun, 02 May 2004 02:43:18 GMT, john_c@tpg.com.au (John Crighton)
>wrote:
>
>
>>Hello Paul,
>>what is the brand name and model number of your RF signal generator.
>>Can you descibe the socket to us.
>
>Thanks John (and others).
>
>The model number ain't gonna mean a lot to anyone as this is a very
>old piece of kit (1950s) that I keep mainly out of a sense of
>reverence for the past. :-) It's an old ex-RAF AVO. I have posted a
>picture of the socket to a.b.s.e under this same thread title...
>BTW, there's a 5p coin shown for scale, but since that won't mean much
>to anyone outside Britain, the outer of the socket is approx. 1" in
>diameter (which won't mean much to anyone in europe but it serves them
>right for adopting the metric system.:-))
>
>--
>
>The BBC: licenced at public expense to spread lies.

Go on, tell us the model number, there are a lot of us
still interested in boat anchor style test equipment.

Is this unit similar to your sig gen
http://www.thevalvepage.com/testeq/avo/sg3/sg3.htm
http://www.thevalvepage.com/testeq/testeq.htm
Unfotunately the connector has been removed and a
BNC type fitted.

I am guessing that you want to keep the original connector
on the sig gen and find a matching connector to make a
short test lead. Old Style connector to BNC.
My news group service doesn't allow me to see the group
a.b.s.e Pity. So I can not see the picture you posted.

So, what are the results of connecting your ohm meter
to the RF out put connector (with the unit switched off)
and measuring the resistance on all attenuator positions.

On one of the lower frequency ranges when you connect
up your cro via a "T" piece to the sig gen with say a 75
ohm load. Does the output level jump up to double
when the load is removed?

Repeat the experiment with a 50 ohm load. If the voltage
doubles from loaded to no load, you will be laughing.
But I don't think you will be that lucky.

I am guessing it will be closer to 75 ohm output impedance.

Try different value loads and let us know how you got on.

Cheerio,
John Crighton
Sydney

3518. Re: LEDs that are visible in sunlight

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-02 23:41:28 UTC
From: "G.Beat" <now9spamgb@no.comcast.spam.net>
Message-ID: <IGflc.18449$kh4.1058186@attbi_s52>
Source record: 26341
Cross-posted to:
sci.electronics.components,sci.electronics,sci.electronics.basics,alt.engineering.electrical,rec.radio.amateur.homebrew

"Jason Hsu" <jason_hsu@my-deja.com> wrote in message
news:f7d9a152.0405011626.6ad4861f@posting.google.com...
> "Dave VanHorn" <dvanhorn@cedar.net> wrote in message
> news:<RPCdncfCgPFbIA7dRVn-uQ@comcast.com>...
>>
>> It's not such a worry. I have SMD leds from chicago miniature, in a
>> product
>> with light pipes, that are quite visible outdoors in full sun.
>> www.mobilecommand.net
>
> What are the specs? How many mcds? What is the viewing angle?
>
> Jason Hsu, AG4DG
> http://www.jasonhsu.com/ee.html
> http://groups.yahoo.com/group/eeham/
> http://groups.yahoo.com/group/resume_hyperinflation_fighters/
> http://groups.yahoo.com/group/gmu-ece-control/

Jason -

Time to visit your local auto supply store for the latest stop and turn
indicators (which are slowly replacing bulbs)
.. of course largely 12 vdc

gb

3519. Re: Need Opinions Please....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 04:15:42 UTC
From: RCM <rkmr15203@yahoo.com>
Message-ID: <4095C76E.9000102@yahoo.com>
Source record: 26445

Buy your wife a new scanner with the document feed tray and think about PDF files.
Think there are some open source stuff that will save as PDF.

Roger and Ute Brown wrote:

> Biz,
>
> Why don't you just scan one each month and have the file available for
> download someplace for a period of time. That way we can pick and choose
> the months that interest us and won't have any need for intermediate media
> or the costs of same?
>
> Roger, KL7Q
>
>
> Biz WDï¿½HCO <wd0hco@ev1.net> wrote in message
> news:BCBA5D92.E894%wd0hco@ev1.net...
>
>>Iï¿½m posting this just on the Boat Anchors, Homebrew and Antique
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> radio-phono
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>
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>>Reading them has been a hoot! Unfortunately, I donï¿½t have the space to
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> interesting
>
>>by choosing various years and sending it out once a month.
>>
>>Like 1956 for June and 1966 for July and so on.
>>
>>I plan to scan them cover to cover and keep all the ads, (which is part of
>>the fun). To get perfect scans, I will have to destroy the binding and
>>carefully take apart each page to be scanned.
>>
>>Itï¿½ll be a lot of work.
>>
>>I figure $3 per CD will cover the cost and postage.
>>
>>No subscriptions, no eBay auctions, This offer is only for these three
>>newsgroups.
>>
>>I am looking for opinions or interest only - no orders at this time ï¿½
>>
>>Please email me.
>>
>>If no one is interested ï¿½ Iï¿½ll only scan it in Mac format and keep them to
>>myself.
>>
>>There will also be an upper limit ï¿½ I donï¿½tï¿½ want to spend most of the day
>>burning CDï¿½s.
>>
>>This is just for a few folks wanting to re-live the good old days in
>>electronics before computers and "outsourcing American jobs to communist
>
> or
>
>>socialist nations".
>>
>>
>>- Biz WDï¿½HCO
>>
>

>
>

3520. Mortorola MC13458L 14-pin DIP Pinout needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 05:19:50 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <WDklc.24941$Xj6.426944@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26446

I got some Motorola MC1458Ls at a hamfest, but they're in 14-pin DIPs and I can only find datasheets for the 8-pin DIP version. Can anyone point me to an online pinout, or post the pinout? Thanks.

73,

"PM"

3521. Re: Need Opinions Please....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 05:56:56 UTC
From: Rick Frazier <rick@rickfrazier.com>
Message-ID: <4095DF4C.168A6AF0@rickfrazier.com>
Source record: 26247

As at least one other replied, I would also be interested in some of them, but don't have the budget for all.... It would be an interesting trip down memory lane, having lived it once, but would like to have copies of some of the ones that have interest to me, particularly things that interested me back then....

I'd agree with the PDF as a good candidate for output format. It usually looks good, and even the linux guys probably have a PDF viewer by now.

Depending on the actual size they end up, there might be some possibility of putting them up on a web site. I've got a couple of sites that have about 500mb free each, and might be convinced to host something if the terms were right. (if they were reasonably popular, maybe you could post a couple of issues a month, with paid download for those interested... I have set up this sort of thing before so have most of the code already here on my development system. Of course, for a paid download, the price would need to be less than $3 per issues...). Anyway, I know there's extra bandwidth and storage space out there in the Ham community if there is interesting stuff that needs to be available on line, even if for a relatively short time.

Thanks
--Rick AH7H

Biz WDï¿½HCO wrote:

> Iï¿½m posting this just on the Boat Anchors, Homebrew and Antique radio-phono
> newsgroups.
>
> Last month at a garage sale ï¿½ I came across a large stack of Popular
> Electronics and other electronic magazines from the 50ï¿½s 60ï¿½s and 70ï¿½s that
> were about to be thrown away.
>
> Reading them has been a hoot! Unfortunately, I donï¿½t have the space to store
> them but I still would like to keep reading them.
>
> So, I plan to scan them by month on CD.
>
> One month = One CD.
>
> I will scan them in both Mac PICT format and Windows BMP format with no
> compression. Most scanned images like QST CDï¿½s are in TIFF or JPEG format
> which usually pretty bad for scanned paper.
>
> Yes BMP and PICT take a bit more data ï¿½ but with a 600 Meg CD, I should be
> able to get an entire month with room to spare.
>
> I have written a very nice program to view PICT files for the Mac. I write

> my programs in SmallTalk which is object oriented so I can use the same
> objects and come up with a WINDOWS BMP version. It wonï¿½t be easy but it
> could be done.
>
> The question isï¿½ would anyone like a copy?
>
> The idea would be to send out the current month and keep things interesting
> by choosing various years and sending it out once a month.
>
> Like 1956 for June and 1966 for July and so on.
>
> I plan to scan them cover to cover and keep all the ads, (which is part of
> the fun). To get perfect scans, I will have to destroy the binding and
> carefully take apart each page to be scanned.
>
> Itï¿½ll be a lot of work.
>
> I figure $3 per CD will cover the cost and postage.
>
> No subscriptions, no eBay auctions, This offer is only for these three
> newsgroups.
>
> I am looking for opinions or interest only - no orders at this time ï¿½
>
> Please email me.
>
> If no one is interested ï¿½ Iï¿½ll only scan it in Mac format and keep them to
> myself.
>
> There will also be an upper limit ï¿½ I donï¿½tï¿½ want to spend most of the day
> burning CDï¿½s.
>
> This is just for a few folks wanting to re-live the good old days in
> electronics before computers and "outsourcing American jobs to communist or
> socialist nations".
>
> - Biz WDï¿½HCO

3522. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 06:28:46 UTC
From: Active8 <reply2group@ndbbm.net>
Message-ID: <4xg1k92fdiv6.dlg@news.individual.net>
Source record: 26248
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 02 May 2004 11:35:08 -0500, John Fields wrote:

> On Sun, 02 May 2004 09:04:33 -0500, John Fields
> <jfields@austininstruments.com> wrote:
>
<snip John helping Paul with terminology>
>
> http://www.maxim-ic.com/appnotes.cfm/appnote_number/972

Once in a while, I can post a helpful link (I've got plenty of tech
info links, but most don't usually apply to the topic at hand
whatever that may be) , but some of you guys, like Spehro, You,
etc., ... it's like you can pull horshoe out of yer asses :) You
must do more digging than I do.

I got a kick out of this link because I have the opposite situation.
I don't need an MLP becuse I have an SLM tha *is* 75 ohfriggin'megas
:) and the link dealt with ... you know.
>
<snip John still helping but going the extra furlong or so>
>
> Use non-inductive resistors (carbon comp if you can get them) and keep
> the leads short. That is, ********KEEP THE LEADS SHORT*********.
^^^^^^^^^^
advice that should be unsnipped. Er, snip the leads, though.

--
Best Regards,
Mike

3523. Re: Mortorola MC13458L 14-pin DIP Pinout needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 10:55:57 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.0000001f.007d0e46@btinternet.com>
Source record: 26249

Hi,

Motorola MC1458L pin-out

Source: Towers' Int. Op-Amp Linear-IC Selector

1 = N/C
2 = OP 1
3 = N/C
4 = N/C
5 = INV 1
6 = NON-INV 1
7 = V(-)
8 = NON-INV 2
9 = INV 2
10 = N/C
11 = N/C
12 = OP 2
13 = N/C
14 = V(+)

Cheers - Joe

3524. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 11:56:07 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <k9cc90144urihitppboghvh612jlsgb30k@4ax.com>
Source record: 26250
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Sun, 02 May 2004 22:37:28 GMT, john_c@tpg.com.au (John Crighton)
wrote:

>Go on, tell us the model number, there are a lot of us
>still interested in boat anchor style test equipment.
>
>Is this unit similar to your sig gen
>http://www.thevalvepage.com/testeq/avo/sg3/sg3.htm
>http://www.thevalvepage.com/testeq/testeq.htm
>Unfotunately the connector has been removed and a
>BNC type fitted.

Not really similar to any of them, I'm afraid. Model number is CT
378B. I did recognise that old Advance E2, though. Had one of 'em
about 25 years ago. It was pretty ancient then!

>I am guessing that you want to keep the original connector
>on the sig gen and find a matching connector to make a
>short test lead. Old Style connector to BNC.
>My news group service doesn't allow me to see the group
>a.b.s.e Pity. So I can not see the picture you posted.

Pity. Hopefully some kind soul will post it onto a web site for you. I
can't as I have no FTP s/ware installed at present. :-(
The output is just under an inch in diameter and is co-axial as you
might expect. The centre pin is about 1/16th" thick and doesn't
protrude beyond the outer. It's pretty unremarkable apart from its
size; much larger than one usually sees.
--

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3525. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 12:08:01 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <c2dc90lje603kqf8kn5iljqah2prqm72p2@4ax.com>
Source record: 26251
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 3 May 2004 02:28:46 -0400, Active8 <reply2group@ndbbm.net>
wrote:

>On Sun, 02 May 2004 11:35:08 -0500, John Fields wrote:
>
>> On Sun, 02 May 2004 09:04:33 -0500, John Fields
>> <jfields@austininstruments.com> wrote:
>>
><snip John helping Paul with terminology>
>>
>> http://www.maxim-ic.com/appnotes.cfm/appnote_number/972
>
>Once in a while, I can post a helpful link (I've got plenty of tech
>info links, but most don't usually apply to the topic at hand
>whatever that may be) , but some of you guys, like Spehro, You,
>etc., ... it's like you can pull horshoe out of yer asses :) You
>must do more digging than I do.

Yup, John Chrighton's another one that springs to mind as being very
good at sniffing stuff out on the Web.

I'd often wondered what these "pads" were for. I'd been a bit
concerned to note that the output amplitude varied quite markedly when
sweeping the generator through it's frequency range when measuring the
'open circuit' voltage with a 'scope. I guess now I know why.
Thanks, guys.
--

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3526. Cancel "Re: Paging Dick Rollema (PA0SE)"

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 13:33:30 UTC
From: "Jan-Martin Noeding, LA8AK" <la8ak@online.no>
Message-ID: <ecqa90lrg7b3t2i5f7hln3fggniomenqf3@4ax.com>
Source record: 26382

```
----
Jan-Martin, LA8AK, N-4623 Kristiansand
http://home.online.no/~la8ak/
```

3527. Re: Mortorola MC13458L 14-pin DIP Pinout needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 13:49:54 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <66slc.27031$Xj6.456516@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26252

"Joe McElvenney" <ximac@btinternet.com> wrote in message
news:VA.0000001f.007d0e46@btinternet.com...
> Hi,
>
> Motorola MC1458L pin-out

Thanks!

73,

"PM"

3528. Re: LEDs that are visible in sunlight

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 15:13:32 UTC
From: larwe@larwe.com
Message-ID: <608b6569.0405030713.5f0ff15@posting.google.com>
Source record: 26342
Cross-posted to:
sci.electronics.components,sci.electronics,sci.electronics.basics,alt.engineering.electrical,rec.radio.amateur.homebrew

> >>>What LEDs do you use for a display that needs to be readable in
> >>>sunlight?Obviously, regular LEDs are too dim. From what I have heard,
> >>
> >>Perhaps you should think about using an LCD? More involved to drive,
> >>but certainly visible in sunlight!
> >
> > Take a walk through the strip in Las Vegas some time, count the LED
>
> Maybe I'm wrong but I thought the OP was talking about handheld, battery
> powered equipment.

Yes... but actually that's not where your thinking and mine diverged.
I'm not sure why, but I was thinking of transmissive LCDs (i.e.
backlit color TFTs and STNs), which by and large are totally
unreadable in sunlight.

3529. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 15:44:14 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <j4qc909smmr6ke5akf9ucv1mbb51dspt3j@4ax.com>
Source record: 26253
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 03 May 2004 12:56:07 +0100, Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote:

>On Sun, 02 May 2004 22:37:28 GMT, john_c@tpg.com.au (John Crighton)
>wrote:
>
>>Go on, tell us the model number, there are a lot of us
>>still interested in boat anchor style test equipment.
>>
>>Is this unit similar to your sig gen
>>http://www.thevalvepage.com/testeq/avo/sg3/sg3.htm
>>http://www.thevalvepage.com/testeq/testeq.htm
>>Unfotunately the connector has been removed and a
>>BNC type fitted.
>
>Not really similar to any of them, I'm afraid. Model number is CT
>378B. I did recognise that old Advance E2, though. Had one of 'em
>about 25 years ago. It was pretty ancient then!
>
>>I am guessing that you want to keep the original connector
>>on the sig gen and find a matching connector to make a
>>short test lead. Old Style connector to BNC.
>>My news group service doesn't allow me to see the group
>>a.b.s.e Pity. So I can not see the picture you posted.
>
>Pity. Hopefully some kind soul will post it onto a web site for you. I
>can't as I have no FTP s/ware installed at present.

Can't you just email it to him?

--
John Fields

3530. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 17:03:49 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c75u5i$i23$1@newshost.mot.com>
Source record: 26255
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Ralph Mowery" <rmowery@ctc.net> wrote in message
news:l9CdnXjL-OuzmQjdRVn-jw@ctc.net...
> > My main sig gen states "output EMF using 6dB pad" next to the socket.
> > WTF is a "6dB pad"?
> > --
>
> [...snip...]
> For the calibration to be accurate on your generator it sounds like the
> scale is calibrated so you need the 6 db pad after it. A 5 db pad will
> reduce the power by a factor of 4 or a voltage by a factor of 2.

That last 5 should be a 6.

--
Steve N, K,9;d, c. i My email has no u's.>
>

3531. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 17:11:32 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c75uk2$i3h$1@newshost.mot.com>
Source record: 26254
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Paul Burridge" <pb@notthisbit.osiris1.co.uk> wrote in message
news:mk87909cpdg7dq25dn24blfoph41mr2gpm@4ax.com...
> Hi,
>
> I have a spare RF signal generator that has an unmarked output from a
> type of socket I've never seen before. What's the simplest way of
> establishing its output impedance? I've had a few ideas but no doubt
> someone out there will know of something better, since I always seem
> to end up making unnecessary work for myself.
> Any suggestions?
> p.
> --
> The BBC: licenced at public expense to spread lies.

One more thing to keep in mind, Paul. Over here in the US it is and has for a long time been standard to display the LOAD level on the generator output indicator. That is, the voltage (or power) at the load itself (assuming matched). In the UK - but I don't know about recently, it was common to show the generator EMF -- which meant the internal generator voltage. This would be twice what would appear across the load if the load & source Z were equal.

From your Sig you may very well be familiar with the EMF designation...
--
Steve N, K,9;d, c. i My email has no u's.

3532. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 17:59:30 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <0p1d90d3pnvja2rb8kb41c07rhmglg0hts@4ax.com>
Source record: 26256
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 03 May 2004 10:44:14 -0500, John Fields
<jfields@austininstruments.com> wrote:

>On Mon, 03 May 2004 12:56:07 +0100, Paul Burridge
><pb@notthisbit.osiris1.co.uk> wrote:
>
>>On Sun, 02 May 2004 22:37:28 GMT, john_c@tpg.com.au (John Crighton)
>>wrote:
>>
>>>Go on, tell us the model number, there are a lot of us
>>>still interested in boat anchor style test equipment.
>>>
>>>Is this unit similar to your sig gen
>>>http://www.thevalvepage.com/testeq/avo/sg3/sg3.htm
>>>http://www.thevalvepage.com/testeq/testeq.htm
>>>Unfotunately the connector has been removed and a
>>>BNC type fitted.
>>
>>Not really similar to any of them, I'm afraid. Model number is CT
>>378B. I did recognise that old Advance E2, though. Had one of 'em
>>about 25 years ago. It was pretty ancient then!
>>
>>>I am guessing that you want to keep the original connector
>>>on the sig gen and find a matching connector to make a
>>>short test lead. Old Style connector to BNC.
>>>My news group service doesn't allow me to see the group
>>>a.b.s.e Pity. So I can not see the picture you posted.
>>
>>Pity. Hopefully some kind soul will post it onto a web site for you. I
>>can't as I have no FTP s/ware installed at present.
>
>---
>Can't you just email it to him?

Oh yeah. I forgot about that!
Better ask here first though, as it's a binary and might not be
welcome.
I've also taken a shot of the whole gen., John. I can certainly e-mail
the pics to you if you're that interested in boat anchors (although
this one's only 25lbs so hardly qualifies). My Marconi, OTOH, has got
to be 3 times that much at least...

--

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3533. Spectrum Analyzer - VCO Results

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 18:19:42 UTC
From: Alex Collins <me@privacy.net>
Message-ID: <c762dk$5is3$1@ID-180264.news.uni-berlin.de>
Source record: 26257

I've tried benching up a Minicircuits POS-900W VCO module.

With a Spectrum Analyzer (RBW 1 kHz, VBW 1kHz, peak hold, 100kHz span) I've been hoping to see a clean waveform that drops to -75dBc at 1,000Hz away, as specified in the Minicircuits spec. Instead, I have something that looks like a triangle spreading for MHz!

I've got in such a mess, my brain is now totally confused (not difficult!). I just don't understand why the trace doesn't look good, compared to my own discrete design(lower frequency) VCOs. Even with the POS-900W out of circuit (ie. no PLL), well grounded, and run from batteries, the waveform is still more-or-less a triangle!

What could I be doing wrong? (My other POS-900W's do the same).
Incidenatlly, I have a screenshot (23Kb) of the display which I can e-mail.

Al.
----
mail[underscore]me[at]freenet[dot]co[dot]uk

3534. Re: Spectrum Analyzer - VCO Results

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 18:33:30 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <_fwlc.22193$kh4.1279179@attbi_s52>
Source record: 26258

> What could I be doing wrong? (My other POS-900W's do the same).
> Incidenatlly, I have a screenshot (23Kb) of the display which I can
e-mail.
>
Well, you don't specify the frequency coverage of your other VCO's, MCL's
have a very high MHz/volt tuning rate and unless the tuning voltage is
absolutely quiet, they'll look pretty bad. (BOTH the positive AND the
negative leads shielded to ground?)

W4ZCB

3535. Re: Spectrum Analyzer - VCO Results

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 18:52:16 UTC
From: Alex Collins <me@privacy.net>
Message-ID: <c764am$6mb1$1@ID-180264.news.uni-berlin.de>
Source record: 26259

"Harold E. Johnson" <W4ZCB@mchsi.com> wrote in message
news:_fwlc.22193$kh4.1279179@attbi_s52...
>
>
> > What could I be doing wrong? (My other POS-900W's do the same).
> > Incidenatlly, I have a screenshot (23Kb) of the display which I can
> e-mail.
> >
> Well, you don't specify the frequency coverage of your other VCO's, MCL's
> have a very high MHz/volt tuning rate and unless the tuning voltage is
> absolutely quiet, they'll look pretty bad. (BOTH the positive AND the
> negative leads shielded to ground?)
>
> W4ZCB
>
>

Thank you for the reply.

But surely if the Minicircuits datasheet says the trace will fall to less
than -75dBC at 1,000Hz away I should see that, or something close to it?
Irrespective of the frequency (800MHz)?

Even if the conections aren't ideal, I'd expect 10dB or so more noise, but
it doesn't change however good/bad it's shielded.

I'm probably doing something really stupid.

Al.

3536. Re: Spectrum Analyzer - VCO Results

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 20:18:32 UTC
From: Dana Myers <k6jq@arrl.net>
Message-ID: <4096a90b$1@wobble>
Source record: 26260

Alex Collins wrote:

> "Harold E. Johnson" <W4ZCB@mchsi.com> wrote in message

>>Well, you don't specify the frequency coverage of your other VCO's, MCL's
>>have a very high MHz/volt tuning rate and unless the tuning voltage is
>>absolutely quiet, they'll look pretty bad.

> But surely if the Minicircuits datasheet says the trace will fall to less
> than -75dBC at 1,000Hz away I should see that, or something close to it?
> Irrespective of the frequency (800MHz)?

Well, Harold is pointing out that noise on the tuning line will
show up as broad phase noise. What are you using to drive the
tuning voltage line?

The old Ramsey FX440 UHF transceiver had a horrific noise floor on the
transmitted audio, since the VCO had about 10MHz/volt sensitivity and
the audio modulation was fed from an ordinary op-amp into the tuning
line. You could be seeing a very similar problem.

Dana

3537. Re: LEDs that are visible in sunlight

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 21:21:11 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <109ddtsfh63k59e@corp.supernews.com>
Source record: 26343
Cross-posted to:
sci.electronics.components,sci.electronics,sci.electronics.basics,alt.engineering.electrical,rec.radio.amateur.homebrew

Lewin A.R.W. Edwards wrote:

>>>>>What LEDs do you use for a display that needs to be readable in
>>>>>sunlight?Obviously, regular LEDs are too dim. From what I have heard,
>>>>
>>>>Perhaps you should think about using an LCD? More involved to drive,
>>>>but certainly visible in sunlight!
>>>
>>>Take a walk through the strip in Las Vegas some time, count the LED
>>
>>Maybe I'm wrong but I thought the OP was talking about handheld, battery
>>powered equipment.
>
>
> Yes... but actually that's not where your thinking and mine diverged.
> I'm not sure why, but I was thinking of transmissive LCDs (i.e.
> backlit color TFTs and STNs), which by and large are totally
> unreadable in sunlight.

I have a radio from Tandy Aerospace in my truck. It's an otherwise
cheap piece of crap (the radio, the radio), but it _does_ have an
always-on LCD clock that's reflective when the truck's off and backlit
when the truck's on. Very nice. Doesn't make up for the sound when
it's turned on, though...

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

3538. Re: Need Opinions Please....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 21:48:54 UTC
From: AM200 <gt@am200.net>
Message-ID: <z5zlc.179$pc7.89@newsfe1-gui.server.ntli.net>
Source record: 26261

```
Because he is trying to make money out of it. I doubt the magazine would
allow this due to copyright.
```

"Roger and Ute Brown" <rogerbrown@gci.net> wrote in message
news:109ai5dmdalpo83@corp.supernews.com...
> Biz,
>
> Why don't you just scan one each month and have the file available for
> download someplace for a period of time. That way we can pick and choose
> the months that interest us and won't have any need for intermediate media
> or the costs of same?
>
> Roger, KL7Q
>
>
> Biz WD�HCO <wd0hco@ev1.net> wrote in message
> news:BCBA5D92.E894%wd0hco@ev1.net...
> > I�m posting this just on the Boat Anchors, Homebrew and Antique
> radio-phono
> > newsgroups.
> >
> > Last month at a garage sale � I came across a large stack of Popular
> > Electronics and other electronic magazines from the 50�s 60�s and 70�s
> that
> > were about to be thrown away.
> >
> > Reading them has been a hoot! Unfortunately, I don�t have the space to
> store
> > them but I still would like to keep reading them.
> >
> > So, I plan to scan them by month on CD.
> >
> > One month = One CD.
> >
> > I will scan them in both Mac PICT format and Windows BMP format with no
> > compression. Most scanned images like QST CD�s are in TIFF or JPEG
format
> > which usually pretty bad for scanned paper.
> >
> > Yes BMP and PICT take a bit more data � but with a 600 Meg CD, I should
be
> > able to get an entire month with room to spare.
> >

> > I have written a very nice program to view PICT files for the Mac. I
write
> > my programs in SmallTalk which is object oriented so I can use the same
> > objects and come up with a WINDOWS BMP version. It won't be easy but it
> > could be done.
> >
> > The question isS would anyone like a copy?
> >
> > The idea would be to send out the current month and keep things
> interesting
> > by choosing various years and sending it out once a month.
> >
> > Like 1956 for June and 1966 for July and so on.
> >
> > I plan to scan them cover to cover and keep all the ads, (which is part
of
> > the fun). To get perfect scans, I will have to destroy the binding and
> > carefully take apart each page to be scanned.
> >
> > It'll be a lot of work.
> >
> > I figure $3 per CD will cover the cost and postage.
> >
> > No subscriptions, no eBay auctions, This offer is only for these three
> > newsgroups.
> >
> > I am looking for opinions or interest only - no orders at this time '
> >
> > Please email me.
> >
> > If no one is interested ' I'll only scan it in Mac format and keep them
to
> > myself.
> >
> > There will also be an upper limit ' I don't' want to spend most of the
day
> > burning CD's.
> >
> > This is just for a few folks wanting to re-live the good old days in
> > electronics before computers and "outsourcing American jobs to communist
> or
> > socialist nations".
> >
> >
> > - Biz WD'HCO
> >
>
>

3539. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 22:14:15 UTC
From: john_c@tpg.com.au
Message-ID: <4096c1b6.3004147@News.individual.net>
Source record: 26262
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 03 May 2004 18:59:30 +0100, Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote:

>>Can't you just email it to him?
>
>Oh yeah. I forgot about that!
>Better ask here first though, as it's a binary and might not be
>welcome.
>I've also taken a shot of the whole gen., John. I can certainly e-mail
>the pics to you if you're that interested in boat anchors (although
>this one's only 25lbs so hardly qualifies). My Marconi, OTOH, has got
>to be 3 times that much at least...
>
>--
>
>The BBC: licenced at public expense to spread lies.

Hello Paul,
Yes, I would be interested to see the pictures of the AVO CT378B
What was the Marconi sig gen model number? I missed it.
No need for pictures of the Marconi unit. I might know it from
the model number.
Regards,
John Crighton
Sydney

3540. Re: URM 120

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 22:42:35 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BCBC431A.5C51%outhouse@midcoast.com>
Source record: 26263

Thank you Ralph, were did you get that document?
Some of the info one could guess, but some items will be helpful when I try
to calibrate the two plugs which had a problem. It is certainly worth
maintaining this piece of work.

73 Uwe

in article hoGdnVPq74nojgndRVn-ig@ctc.net, Ralph Mowery at rmowery@ctc.net
wrote on 5/1/04 5:13 PM:

>
> "Uwe" <outhouse@midcoast.com> wrote in message
> news:BCB97911.5ADB%outhouse@midcoast.com...
>> Well, mine apparently has a little problem. The knob on top, which lets
> you
>> select the power level, that knob turns a cam which raises or lowers the
>> sensing element. Very nifty mechanism.
>> Now in my meter the shaft which holds the know spins in the cam and so
>> obviously nothing happens. So I took the hole thing apart and fixed that
>> problem and in the process you wish you had the description or maintenance
>> instructions which would give you the exact distance of the sensing
> element
>> for each power range etc.
>>
>> So thats why I was asking.
>> And the thing is built beautifully, thats for sure, I just seem to have to
>> recalibrate mine.
>> Maybe somebody else here has some documentation for the device.
>
>
> Here is a scan of the procedure. YOu have to hook up a 50 ohm dummy load
> and a known accurate meter after the urm120. That is the test setup referred
> to as fig. 6. There is no exect distance, just turn the screw tuil
> calibrated against a known standard.
>
>
>
> ET61O-AA-OMI-O1O/81':1 SE502
>
>
> NOTE
>
> A precision RF Wattineter or a Calorimeter of the desired
> accuracy may be
> substituted for Items d, e and f.

>
> 6-12. PROCEDURE. Perform the following steps to calibrate a
> coupler-detector
> assembly:
>
> 1. Connect the test setup shown in figure 6-1.
>
> 2. Rotate the knurled slide knob on the coupler-detector assembly so
> that the
> arrow on the power selection plate points toward the 50-ohm
> termination load.
>
> 3. Position the power range knob on the coupler-detector assembly to
> the power
> range within which the calibration is to be made.
>
> 4. Remove the two screws (9, figure 7-2) that secure the power
> selection plate
> (10) to the slide knob assembly (12) , and lift the power
> selection plate (10)
> over the power range knob (7).
>
> S. Apply power to the RF power source, making certain that the RI'
> source is
> operating within the frequency range of the coupler-detector
> assembly.
>
> 6. Compare the reading of the wattmeter with the reading on the test
> eguipsent
> power meter, taking into account the coupling factor of the
> directional
> coupler at the frequency being used.
>
> Rotate the power range knob approximately 15' from its normal
> position in
> order to line up the hole in the slide knob assembly (12, figure
> 7-2) with
> the hole in the slide cam assembly (13). At each setting of the
> power range
> knob the hole in the slide knob assembly (12) is directly in line
> with the
> arrow on the power range knob.
>
> Insert a 1/8-inch hexagonal (Allen) wrench through the holes until
> the
> tuning knob lines up as indicated in Step 7, into the socket of the
> calibrating screw (11).
>
> Turn the calibrating screw (11) clockwise if the power reading of
> the

> wattmeter is higher than the test equipment power mater,
> counterclockwise
> if lower.
>
> NOTE
>
> If the correct reading can not be obtained within a half turn 0f
> the
> calibrating screw, the diode must be replaced.
>
> Reasemble the coupler-detector assembly.
>
>

3541. Re: Need Opinions Please....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 22:42:51 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <109din0emjvpn3b@corp.supernews.com>
Source record: 26264

AM200 wrote:

> Because he is trying to make money out of it. I doubt the magazine would
> allow this due to copyright.
>
> "Roger and Ute Brown" <rogerbrown@gci.net> wrote in message
> news:109ai5dmdalpo83@corp.supernews.com...
>
>>Biz,
>>
>>Why don't you just scan one each month and have the file available for
>>download someplace for a period of time. That way we can pick and choose
>>the months that interest us and won't have any need for intermediate media
>>or the costs of same?
>>
>>Roger, KL7Q
>>
>>
>>Biz WDï¿½HCO <wd0hco@ev1.net> wrote in message
>>news:BCBA5D92.E894%wd0hco@ev1.net...
>>
>>>Iï¿½m posting this just on the Boat Anchors, Homebrew and Antique
>>
>>radio-phono
>>
>>>newsgroups.
>>>
>>>Last month at a garage sale ï¿½ I came across a large stack of Popular
>>>Electronics and other electronic magazines from the 50ï¿½s 60ï¿½s and 70ï¿½s
>>
>>that
>>
>>>were about to be thrown away.
>>>
>>>Reading them has been a hoot! Unfortunately, I donï¿½t have the space to
>>
>>store
>>
>>>them but I still would like to keep reading them.
>>>
>>>So, I plan to scan them by month on CD.
>>>
>>>One month = One CD.
>>>

>>>I will scan them in both Mac PICT format and Windows BMP format with no
>>>compression. Most scanned images like QST CDï¿½s are in TIFF or JPEG
>
> format
>
>>>which usually pretty bad for scanned paper.
>>>
>>>Yes BMP and PICT take a bit more data ï¿½ but with a 600 Meg CD, I should
>
> be
>
>>>able to get an entire month with room to spare.
>>>
>>>I have written a very nice program to view PICT files for the Mac. I
>
> write
>
>>>my programs in SmallTalk which is object oriented so I can use the same
>>>objects and come up with a WINDOWS BMP version. It wonï¿½t be easy but it
>>>could be done.
>>>
>>>The question isS would anyone like a copy?
>>>
>>>The idea would be to send out the current month and keep things
>>
>>interesting
>>
>>>by choosing various years and sending it out once a month.
>>>
>>>Like 1956 for June and 1966 for July and so on.
>>>
>>>I plan to scan them cover to cover and keep all the ads, (which is part
>
> of
>
>>>the fun). To get perfect scans, I will have to destroy the binding and
>>>carefully take apart each page to be scanned.
>>>
>>>Itï¿½ll be a lot of work.
>>>
>>>I figure $3 per CD will cover the cost and postage.
>>>
>>>No subscriptions, no eBay auctions, This offer is only for these three
>>>newsgroups.
>>>
>>>I am looking for opinions or interest only - no orders at this time ï¿½
>>>
>>>Please email me.
>>>
>>>If no one is interested ï¿½ Iï¿½ll only scan it in Mac format and keep them

>
> to
>
>>>myself.
>>>
>>>There will also be an upper limit ï¿½ I donï¿½tï¿½ want to spend most of the
>
> day
>
>>>burning CDï¿½s.
>>>
>>>This is just for a few folks wanting to re-live the good old days in
>>>electronics before computers and "outsourcing American jobs to communist
>>
>>or
>>
>>>socialist nations".
>>>
>>>
>>>- Biz WDï¿½HCO
>>>
>>
>>
>
>

Technically you can't even copy it and _give_ it away without violating
copyright -- but they might not chase you down.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

3542. Radio & Electronics World Magazine RF Articles

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 22:45:05 UTC
From: Ody <From_Odyseus@Hotmail.com>
Message-ID: <rpid90hor2i0piasodqtquacin1hsq99sp@4ax.com>
Source record: 26265

Hi All,

Does anybody have a list of the RF projects that appeared in Radio & Electronics World (UK magazines from 1981)? - Many projects found themselves as kits by Cirkit. I would like to buy some back issues for nostalgia but there are some 4 years worth !

Many Thanks

John Silver MSc MIEE CEng

3543. Re: Book on Homebrew Radio -- Free!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 22:48:50 UTC
From: "H. Peter Friedrichs" <XXXhpfuopZZZ@mindspring.com>
Message-ID: <m%zlc.5817$V97.924@newsread1.news.pas.earthlink.net>
Source record: 26266

I've also read it, and find it to be a fine piece of work.

Pete
AC7ZL

<wabbit@grnco.net> wrote in message
news:pjo890d3qqp0c9htnkm5h26e1ebmrpktkt@4ax.com...
> Thank you
> On Sat, 17 Apr 2004 14:29:15 -0700, John Miles
> <jmiles@pop.removethistomailme.net> wrote:
>
> >In article <97f305da.0404160529.41caa467@posting.google.com>,
> >n2cqr@clix.pt says...
> >> Frank Harris, K0IYE, has written a really wonderful book on
> >> homebrewing ham radio gear. "Crystal Sets to Sideband --
> >> A Guide to Building a Amateur Radio Station" will provide
> >> lots of ideas and inspiration to solder melters everywhere.
> >> I really enjoyed it.
> >>
> >> Frank has made it available free of charge for private,
> >> not-for-profit purposes. Download it free at
> >>
> >> http://www.qsl.net/k3pd/book.html
> >>
> >> Be sure to send feedback to Frank at Frwharris@aol.com
> >>
> >> 73 Bill M0HBR
> >>
> >
> >Nice piece of work! Reminds me of the late Jim Fisk's writings.
> >
> >-- jm
> >
> >--
> >http://www.qsl.net/ke5fx
> >Note: My E-mail address has been altered to avoid spam
> >--
>

3544. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 22:51:39 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BCBC453A.5C53%outhouse@midcoast.com>
Source record: 26267

Ok Folks, at the end of a long saga of fiddling with an old technology tube transmitter is this bit of satifying news:

A few days ago, I had a QSO with a fellow in Ohio, I received an email and mp3 sound file from a fellow in Leeds, England, who had heard and recorded my little 5 Watt signal and this way I could hear it too.

He gave it a 429-539 QSB and listening to it I was embarrassed by the less than perfect code as well as the detectable chirp but oh well...

So now is the time to start the construction of that more advanced version of a starter transmitter using two 807 as finals, who was mentioning that design way back??

Anyways, hints of where to find the circuit diagram are welcome.

With a very chirpy 73

Uwe

in article BC9B3169.3F71%outhouse@midcoast.com, Uwe at outhouse@midcoast.com wrote on 4/8/04 4:42 PM:

> in article 20040408075929.16977.00000148@mb-m23.aol.com, N2EY at
> n2ey@aol.comSPAMNO wrote on 4/8/04 07:59:
>
>> In article <BC9A6D3D.3F60%outhouse@midcoast.com>, Uwe <outhouse@midcoast.com>
>> writes:
>>
>>> Using the L/C meter I wound a proper coil, I checked the calibration of my
>>> plate current meter, I did a more thorough check of the grid current (it is
>>> between 1 and 2 mA) and so on and so forth.
>>
>> I think you mean "screen current".
>>
>>> And I did connect a dummy load (even though they don't respond or send out
>>> QSL cards when you tranmit into them).
>>
>> Yup!
>>>
>>> None of the thing did make any real difference and the dip, the elusive dip,
>>> was in the order of magnitude of maybe 2 mA, nearly impossible to see on my
>>> meter.
>>>
>>> Then I changed the circuit around as you suggested, testing the RFC and I
>>> got a dip the likes of which I had never seen. The meter went slowly from
>>> about 30 mA to 50 mA and then dropped to about 25 mA, I couldn't miss it.

>>>
>>> But what does it mean. I gather my RFC is not ok. What is wrong??
>>>
>>> I used a Series 4590 high current filter inductor I had around, it has the
>>> Digi Key number DN 4528.
>>
>> The RFC you're using is not meant for the appliucation. It's intended for
>> much
>> lower frequencies. You can't tell that just by looking at it.
>>
>> RF choke design is a matter of compromises. For example, the use of a
>> powdered
>> iron or ferrite core will raise the inductance. But that same core does not
>> work at all frequencies, and may saturate from DC current in the core.
>>
>> The biggest problem is called "distributed capacitance". In order to get lots
>> of inductance, you put on lots of turns, closely spaced. But each turn has a
>> small amount of capacitance to the turns next to it. All these small
>> capacitances add up, and as the frequency is increased they become
>> significant
>> to the total reactance of the choke. At one or more frequencies the choke
>> will
>> actually resonate - these are called "self resonant" frequencies. At some
>> frequencies the choke may act like an inductor of much lower inductance, or
>> even like a capacitor, because of the self resonances. Self resonance in a
>> choke can be found with a suitable dip meter.
>>
>> RF chokes that are meant for applications like the AC-1 are designed to have
>> self-resonant frequencies far from the amateur bands.
>>
>>> Happy about the dip but still not clear on the deeper reasons...
>>
>> Hope this helps.
>>
>> 73 de Jim, N2EY
>
> Yes this is all very helpful. Indeed I was thinking that it would have taken
> me a very long time to figure this out by myself, if at all.
>
> I put another choke in there, a Hammond 1535B, the self resonant min. frequ.
> is 1.3Mhz.
>
> I guess it does take some deeper inside what parameters to look for since
> this one improves things slightly but not yet altogether (slightly more
> pronounced dip).
>
> Who carries the sort of chokes you were refering to?
>
> 73 Uwe
>

3545. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 23:21:38 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <mrkd90dd1gauch62v1fo5pbsteq8cdd2ao@4ax.com>
Source record: 26269
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Mon, 03 May 2004 22:14:15 GMT, john_c@tpg.com.au (John Crighton)
wrote:

>Hello Paul,
>Yes, I would be interested to see the pictures of the AVO CT378B
>What was the Marconi sig gen model number? I missed it.
>No need for pictures of the Marconi unit. I might know it from
>the model number.

Okay, John. The Marconi's a TF 2002AS. I'll post you a pic of the AVO
2morrow as I'm a bit shagged-out right now (bank holiday boozing here
2day).
--

The BBC: licenced at public expense to spread lies.

3546. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 23:38:13 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <109dluqkji4c448@corp.supernews.com>
Source record: 26270

Uwe wrote:

> Ok Folks, at the end of a long saga of fiddling with an old technology tube
> transmitter is this bit of satifying news:
>
> A few days ago, I had a QSO with a fellow in Ohio, I received an email and
> mp3 sound file from a fellow in Leeds, England, who had heard and recorded
> my little 5 Watt signal and this way I could hear it too.
>
> He gave it a 429-539 QSB and listening to it I was embarrassed by the less
> than perfect code as well as the detectable chirp but oh well...
>
> So now is the time to start the construction of that more advanced version
> of a starter transmitter using two 807 as finals, who was mentioning that
> design way back??
>
> Anyways, hints of where to find the circuit diagram are welcome.
>
> With a very chirpy 73
>
> Uwe
>
>
>
>
>
>
>
>
> in article BC9B3169.3F71%outhouse@midcoast.com, Uwe at outhouse@midcoast.com
> wrote on 4/8/04 4:42 PM:
>
>
>>in article 20040408075929.16977.00000148@mb-m23.aol.com, N2EY at
>>n2ey@aol.comSPAMNO wrote on 4/8/04 07:59:
>>
>>
>>>In article <BC9A6D3D.3F60%outhouse@midcoast.com>, Uwe <outhouse@midcoast.com>
>>>writes:
>>>
>>>
>>>>Using the L/C meter I wound a proper coil, I checked the calibration of my
>>>>plate current meter, I did a more thorough check of the grid current (it is
>>>>between 1 and 2 mA) and so on and so forth.
>>>

>>>I think you mean "screen current".
>>>
>>>
>>>>And I did connect a dummy load (even though they don't respond or send out
>>>>QSL cards when you tranmit into them).
>>>
>>>Yup!
>>>
>>>>None of the thing did make any real difference and the dip, the elusive dip,
>>>>was in the order of magnitude of maybe 2 mA, nearly impossible to see on my
>>>>meter.
>>>>
>>>>Then I changed the circuit around as you suggested, testing the RFC and I
>>>>got a dip the likes of which I had never seen. The meter went slowly from
>>>>about 30 mA to 50 mA and then dropped to about 25 mA, I couldn't miss it.
>>>>
>>>>But what does it mean. I gather my RFC is not ok. What is wrong??
>>>>
>>>>I used a Series 4590 high current filter inductor I had around, it has the
>>>>Digi Key number DN 4528.
>>>
>>>The RFC you're using is not meant for the appliucation. It's intended for
>>>much
>>>lower frequencies. You can't tell that just by looking at it.
>>>
>>>RF choke design is a matter of compromises. For example, the use of a
>>>powdered
>>>iron or ferrite core will raise the inductance. But that same core does not
>>>work at all frequencies, and may saturate from DC current in the core.
>>>
>>>The biggest problem is called "distributed capacitance". In order to get lots
>>>of inductance, you put on lots of turns, closely spaced. But each turn has a
>>>small amount of capacitance to the turns next to it. All these small
>>>capacitances add up, and as the frequency is increased they become
>>>significant
>>>to the total reactance of the choke. At one or more frequencies the choke
>>>will
>>>actually resonate - these are called "self resonant" frequencies. At some
>>>frequencies the choke may act like an inductor of much lower inductance, or
>>>even like a capacitor, because of the self resonances. Self resonance in a
>>>choke can be found with a suitable dip meter.
>>>
>>>RF chokes that are meant for applications like the AC-1 are designed to have
>>>self-resonant frequencies far from the amateur bands.
>>>
>>>
>>>>Happy about the dip but still not clear on the deeper reasons...
>>>
>>>Hope this helps.
>>>

>>>73 de Jim, N2EY
>>
>>Yes this is all very helpful. Indeed I was thinking that it would have taken
>>me a very long time to figure this out by myself, if at all.
>>
>>I put another choke in there, a Hammond 1535B, the self resonant min. frequ.
>>is 1.3Mhz.
>>
>>I guess it does take some deeper inside what parameters to look for since
>>this one improves things slightly but not yet altogether (slightly more
>>pronounced dip).
>>
>>Who carries the sort of chokes you were refering to?
>>
>>73 Uwe
>>
>
>

See if you can get a copy of the ARRL Handbook from the '40s or '50s.
'60s will get you some 807's, some 1625's (still cheaper than 807's at
Antique Electronics Supply!), and some 6146's.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

3547. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 23:52:29 UTC
From: "Tim Auton"
Message-ID: <l8md90h7liefj5fr0cq187v482gk3b5hm6@4ax.com>
Source record: 26271
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Highland Ham" <xygm0csz.wvkn6wh@ntlworld.com> wrote:

>> The model number ain't gonna mean a lot to anyone as this is a very
>> old piece of kit (1950s) that I keep mainly out of a sense of
>> reverence for the past. :-) It's an old ex-RAF AVO. I have posted a
>> picture of the socket to a.b.s.e under this same thread title...
>> BTW, there's a 5p coin shown for scale, but since that won't mean much
>> to anyone outside Britain, the outer of the socket is approx. 1" in
>> diameter (which won't mean much to anyone in europe but it serves them
>> right for adopting the metric system.:-))
>======================
>Since Britain is part of Europe you probably mean 'anyone in continental
>europe'
>
>Just for your info ,the metric system was introduced /imposed by Napoleon
>(eg more than 200 years ago)
>For once he did the right thing ;) .

The metric system also the law here in the UK. You can't sell stuff in
pounds and ounces or feet and inches. Miles are the last bastion of
the imperial system (on road signs), with the informal exception of
pints of beer (IIRC technically it's a "large" beer and 576ml). I
don't mind working in metric units, indeed I prefer them, but if
anyone wants to stop me asking for a pint in the pub they'll have a
fight on their hands!

Oh yes, cannabis is still sold by the fraction of an ounce as it ever
was, but I don't think selling cannabis in imperial units is any more
illegal than just selling cannabis :)

Tim
--
Love is a travelator.

3548. Re: Spectrum Analyzer - VCO Results

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-03 23:54:42 UTC
From: k7itm@aol.com
Message-ID: <3200347.0405031554.50e415e8@posting.google.com>
Source record: 26272

I'm not terribly familiar with the MiniCircuits VCOs, but I have been involved with getting the phase noise down to low values on some of our designs. I can tell you that it's important to have power supplies be very clean, as well as to have the control voltage very clean (down into the microvolt region or below) as Harold says.

But from what you wrote, I gather there's a problem even with things supposedly very clean. BTW, I don't 'zactly understand the "POS-900W out of circuit
(ie. no PLL)" bit. What are you measuring if the oscillator is out of the circuit? Or are you saying you're measuring the oscillator "bare" and not in a feedback loop?

Do you have any other signal you can measure in the same frequency range? Is your spectrum analyzer up to the task? I'd think your 1kHz res bandwidth is pretty big to be seeing the noise level at 1kHz offset...I'd want a res bandwidth at most 1/10th the offset. And it might be interesting to look with much lower res bandwidth if you can, to see if there is a particular structure to the sidebands, or if they are indeed random noise.

Cheers,
Tom

"Alex Collins" <me@privacy.net> wrote in message
news:<c764am$6mb1$1@ID-180264.news.uni-berlin.de>...
> "Harold E. Johnson" <W4ZCB@mchsi.com> wrote in message
> news:_fwlc.22193$kh4.1279179@attbi_s52...
> >
> >
> > > What could I be doing wrong? (My other POS-900W's do the same).
> > > Incidenatlly, I have a screenshot (23Kb) of the display which I can
> e-mail.
> > >
> > Well, you don't specify the frequency coverage of your other VCO's, MCL's
> > have a very high MHz/volt tuning rate and unless the tuning voltage is
> > absolutely quiet, they'll look pretty bad. (BOTH the positive AND the
> > negative leads shielded to ground?)
> >
> > W4ZCB
> >
> >
>
>
> Thank you for the reply.

>
> But surely if the Minicircuits datasheet says the trace will fall to less
> than -75dBC at 1,000Hz away I should see that, or something close to it?
> Irrespective of the frequency (800MHz)?
>
> Even if the conections aren't ideal, I'd expect 10dB or so more noise, but
> it doesn't change however good/bad it's shielded.
>
> I'm probably doing something really stupid.
>
> Al.
> ---

3549. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 01:31:59 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <xuedndPQUqu2bgvdRVn-hQ@ctc.net>
Source record: 26273
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

> >
> > [...snip...]
> > For the calibration to be accurate on your generator it sounds like the
> > scale is calibrated so you need the 6 db pad after it. A 5 db pad will
> > reduce the power by a factor of 4 or a voltage by a factor of 2.
>
> That last 5 should be a 6.
>
> --
> Steve N, K,9;d, c. i My email has no u's.>

Thanks, I fat fingered that and hit the 5 instead of the 6.

3550. Re: Spectrum Analyzer - VCO Results

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 01:36:26 UTC
From: Jim Pennell <Nospam@killspam.com>
Message-ID: <usClc.6039$Hs1.2829@newsread2.news.pas.earthlink.net>
Source record: 26274

My experience with Minicircuits is that they have EXTREME sensitivity to the AFC line. I'd use a resistor divider from the same battery and a bypass cap.

Something like a pair of 100K resistors and a 10 uF cap. Naturallly, ground the cap at the oscillator ground pin.

Also, the Vcc has to be well bypassed AT THE OSCILLATOR.

These things are very sensitive to any change in the VCC voltage. A battery is often not all that low of an impedance and so some good bypassing will help.

Finally, how are you taking the signal off to your analyzer?

I haven't used the POS-900 but in general, these critters want a paasive 50 ohm attenuator right on their output to avoid signals sneaking back and screwing up the oscillator.

Jim Pennell
N6BIU

3551. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 01:55:47 UTC
From: john_c@tpg.com.au
Message-ID: <4096de35.10300341@News.individual.net>
Source record: 26275
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 04 May 2004 00:21:38 +0100, Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote:

>On Mon, 03 May 2004 22:14:15 GMT, john_c@tpg.com.au (John Crighton)
>wrote:
>
>>Hello Paul,
>>Yes, I would be interested to see the pictures of the AVO CT378B
>>What was the Marconi sig gen model number? I missed it.
>>No need for pictures of the Marconi unit. I might know it from
>>the model number.
>
>Okay, John. The Marconi's a TF 2002AS. I'll post you a pic of the AVO
>2morrow as I'm a bit shagged-out right now (bank holiday boozing here
>2day).
>--
>
>The BBC: licenced at public expense to spread lies.

Yes, I know that unit, I have a 2001
Repairing that unit is not dead easy for hobbyists.

I am assuming that AVO at Dover were useless with your
enquiries regarding information on the AVO CT378B

If you wanted a good back up signal generator,
that is dead easy to repair. Here is one for sale.
Marconi TF 144H 50 ohms output Z. BNC connector.
10KHz to 72MHz
http://cgi.ebay.co.uk/ws/eBayISAPI.dll?ViewItem&category=40004&item=3094746090&rd=1

I like that model, for a number of reasons.
Very stable frequency wise (when warmed up).
It has that nice smell inside that you get from valve gear. LOL
Everything inside is getatable.
Big knobs and easy to read dials, good for failing eyesight.
When the attenuator gets smoked by accidentally pressing a
microphone push to talk button of a transceiver under repair
on the bench, it is very easy to replace the resistors in the
attenuator.
It was not that heavy that I couldn't hump it up the gangways
of ships, decades ago, to do radio service work but it is way too
heavy for me now. Heh heh heh...

You might like to check out how far away that unit for auction,
is away from you. I wouldn't pay any more than 45 quid.
Even 25 quid is right on the limit for me. But if no one bids
you could get lucky. I bought one here in Australia for $10
at a Ham fest.

I only mentioned the TF144H incase you were looking for a
good cheap sig gen to accompany your TF2002AS do some
serious radio receiver work. Both have good attenuators.
Having two good signal generators would help you out with
all that filter and interference work that has been plaguing you
over recent months. One sig gen as the desired signal, the
second sig-gen as the interfering signal etc.

Regards,
John Crighton
Sydney

3552. Re: LEDs that are visible in sunlight

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 02:36:00 UTC
From: Tim <tim@tim.tim>
Message-ID: <MPG.1b00d98968b715aa989693@allnews.nbnet.nb.ca>
Source record: 26344
Cross-posted to:
sci.electronics.components,sci.electronics,sci.electronics.basics,alt.engineering.electrical,rec.radio.amateur.homebrew

OK, I built a small 4 digit score board for use outside, and I used LEDS
I salvaged from clusters I bought on E-Bay. The clusters were red/green
mix, and the red ones really are bright in sunlight. Oddly enough the
guy e-mailed me recently to say he had more of 'em for sale.

Here's the web addy he gave me;

http://www.evaluecomp.com
(The clusters are on page 5 of the LED list)

It takes a fair amount of effort to get the leds out of the clusters. I
just cut the case off, and used a blow torch and heated the base until
the solder got hot enough to pull the pcb off the back, then I just
broke apart the expoxy or glue or whatever and retrieved the leds. I had
about 93% success rate, with the other 7% damaged or failed after they
were removed.

Works nice, even at the beach, but the green ones can be hard to see
sometimes.

- Tim -

In article <608b6569.0405030713.5f0ff15@posting.google.com>,
larwe@larwe.com says...
> > >>>What LEDs do you use for a display that needs to be readable in
> > >>>sunlight?Obviously, regular LEDs are too dim. From what I have heard,
> > >>
> > >>Perhaps you should think about using an LCD? More involved to drive,
> > >>but certainly visible in sunlight!
> > >
> > > Take a walk through the strip in Las Vegas some time, count the LED
> >
> > Maybe I'm wrong but I thought the OP was talking about handheld, battery
> > powered equipment.
>
> Yes... but actually that's not where your thinking and mine diverged.
> I'm not sure why, but I was thinking of transmissive LCDs (i.e.
> backlit color TFTs and STNs), which by and large are totally
> unreadable in sunlight.
>

3553. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 03:29:14 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <e6Elc.30542$Xj6.519661@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26277

"Uwe" <outhouse@midcoast.com> wrote in message
news:BCBC453A.5C53%outhouse@midcoast.com...

> So now is the time to start the construction of that more advanced version
> of a starter transmitter using two 807 as finals, who was mentioning that
> design way back??

You almost have to put those 807s in push-pull, for aesthetic reasons. That is easier to do with plug-in coils than with a bandswitch. Then you need a dual variable to tune the dual coils. Swinging link to adjust coupling to the antenna. This stuff shows up at hamfests sometimes. You may find someone's old homebrew rig for sale and you can salvage the parts from it. The Handbooks Tim mentioned will have all the info you need. I started out with a 1953 Handbook but I can't remember what projects were in it anymore. They're all over eBay, don't pay too much. Tim's also right about the 1625 tubes. They're the same as 807s except for the filament voltage and socket.

My second transmitter (the first was a single 6V6) used an 807W, a compact version of the full-size bottle, as the PA. I used a Calumet baking soda can for a shield.

While you're cruising the hamfests, look for an RCA Transmitting Tube manual, a small paperback. They're fun to read and there's some application info in them, as well as the usual datasheets.

I used to use a mercury-wetted relay to key my tube rigs. They're really fast and make a nice ticking sound when you're keying. They also isolate you from the keyed voltage and allow the use of most modern keyers. Definitely in keeping with the period, too. They look like octal vacuum tubes with metal bulbs but they're shiny, not black. 24 VDC is a common coil voltage.

Do you hang out on the boatanchors group? You might be able to turn up some parts and lots of info over there.

(Note that I have quit trying to convert you to solid-state! You are obviously a lost cause. :> Have fun.)

73,

"PM"

3554. Re: Spectrum Analyzer - VCO Results

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 03:56:11 UTC
From: Pete KE9OA <p.gianak@worldnet.att.net>
Message-ID: <vvElc.16601$Ut1.502421@bgtnsc05-news.ops.worldnet.att.net>
Source record: 26278

I've also observed.....it you are not using the auto mode on your spectrum analyzer, meaning if you have too fast of a sweep rate for your I.F. bandwidth, you will see the results that you are running into. I use an HP 8558B, and if I set the SA improperly, I will see the same results. Try slowing down the sweep rate if you haven't done so.

Pete

"Jim Pennell" <Nospam@killspam.com> wrote in message
news:usClc.6039$Hs1.2829@newsread2.news.pas.earthlink.net...
> My experience with Minicircuits is that they have EXTREME sensitivity to
> the AFC line. I'd use a resistor divider from the same battery and a
> bypass cap.
>
> Something like a pair of 100K resistors and a 10 uF cap. Naturallly,
> ground the cap at the oscillator ground pin.
>
> ----------
>
> Also, the Vcc has to be well bypassed AT THE OSCILLATOR.
>
> These things are very sensitive to any change in the VCC voltage. A
> battery is often not all that low of an impedance and so some good
bypassing
> will help.
>
> Finally, how are you taking the signal off to your analyzer?
>
> I haven't used the POS-900 but in general, these critters want a paasive
> 50 ohm attenuator right on their output to avoid signals sneaking back and
> screwing up the oscillator.
>
>
> Jim Pennell
> N6BIU
>
>

3555. Re: Wanted: Manual for WaveTek 3000-200 Signal Generator + Deviation Meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 03:56:18 UTC
From: The Eternal Squire <eternalsquire@comcast.net>
Message-ID: <fJ-dnVzWFPvPxwHd4p2dnA@comcast.com>
Source record: 26126
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.equipment,sci.electronics.misc,sci.electronics.repair

Larry Gagnon wrote:
> On Thu, 06 May 2004 05:24:08 GMT, "James McMann" <jmcmann@pacbell.net>
> wrote:
>
>
>>I am having great trouble locating the operations and service manual for the
>>Wavetek 3000-200 Signal Generator with Option 200 Deviation Meter. If you
>>have one I would like to buy it or a copy, digital or photocopy.
>>
>>Reply to jmcmann{+A+T+}pacbell.net. You can figure out that you need to
>>remove the stuff between and including the { } and insert the @ sign. Sorry
>>for the trouble but you know how the spam is these days...
>>
>>Thanks,
>>
>>Jim McMann KF6WOR
>>San Jose, CA.
>>
>
>
> Jim: you can rent a manual from WJ Ford enterprises, copy it and
> return it. They have the Wavetek 3000 manual.
>
> http://www.testequipmentcanada.com/manuals.html
>
> Larry Gagnon VE7EA
> **********
> remove "fake" from email address

No, he cannot. Copying the manual without buying it is copyright infringement, essentially the theft of information from its owner. Renting a manual with the intent to steal the information is mail fraud, a federal offense.

I know this is not a popular stance, but if we're gonna convince the public to treat us as good citizens deserving of our bandwidth, we need to at least act the part.

The Eternal Squire

P.S. Good gosh, isn't poverty expensive?

3556. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 04:51:30 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BCBC9990.5C7A%outhouse@midcoast.com>
Source record: 26279

in article e6Elc.30542$Xj6.519661@bgtnsc04-news.ops.worldnet.att.net,
Paul_Morphy at nopaul_morphy2@coolgoose.com wrote on 5/3/04 11:29 PM:

>
> "Uwe" <outhouse@midcoast.com> wrote in message
> news:BCBC453A.5C53%outhouse@midcoast.com...
>
>> So now is the time to start the construction of that more advanced version
>> of a starter transmitter using two 807 as finals, who was mentioning that
>> design way back??
>
> You almost have to put those 807s in push-pull, for aesthetic reasons. That
> is easier to do with plug-in coils than with a bandswitch. Then you need a
> dual variable to tune the dual coils. Swinging link to adjust coupling to
> the antenna. This stuff shows up at hamfests sometimes. You may find
> someone's old homebrew rig for sale and you can salvage the parts from it.
> The Handbooks Tim mentioned will have all the info you need. I started out
> with a 1953 Handbook but I can't remember what projects were in it anymore.
> They're all over eBay, don't pay too much. Tim's also right about the 1625
> tubes. They're the same as 807s except for the filament voltage and socket.
>
> My second transmitter (the first was a single 6V6) used an 807W, a compact
> version of the full-size bottle, as the PA. I used a Calumet baking soda can
> for a shield.
>
> While you're cruising the hamfests, look for an RCA Transmitting Tube
> manual, a small paperback. They're fun to read and there's some application
> info in them, as well as the usual datasheets.
>
> I used to use a mercury-wetted relay to key my tube rigs. They're really
> fast and make a nice ticking sound when you're keying. They also isolate you
> from the keyed voltage and allow the use of most modern keyers. Definitely
> in keeping with the period, too. They look like octal vacuum tubes with
> metal bulbs but they're shiny, not black. 24 VDC is a common coil voltage.
>
> Do you hang out on the boatanchors group? You might be able to turn up some
> parts and lots of info over there.
>
> (Note that I have quit trying to convert you to solid-state! You are
> obviously a lost cause. :> Have fun.)
>
> 73,
>
> "PM"

>
>

Paul, I may be a lost cause but I did, after we talked about it, buy the Experiments in RF design book-great stuff and I also continue to work on my stamps based controllers even though I can't find a single tube in there...

Thanks for your help

Uwe

3557. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 12:56:23 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <ti3f90pv7jts7c9om02n2rkooca30olo06@4ax.com>
Source record: 26280
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 4 May 2004 15:01:12 -0700, "Terry Given"
<the_domes@xtra.co.nz> wrote:

>same in NZ - pounds and ounces for cannabis.

I had no idea there was such a enormous consumption of dope in NZ. In
Britain, no one other than a dealer would buy lumps of the stuff that
size. :-)
--

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3558. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 12:56:24 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <rr3f9011t0m8h0jl4pcijgf3rui3ej6d43@4ax.com>
Source record: 26281
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 04 May 2004 01:55:47 GMT, john_c@tpg.com.au (John Crighton)
wrote:

>Yes, I know that unit, I have a 2001
>Repairing that unit is not dead easy for hobbyists.

Hey, I must be semi-pro by now, with all the info I've been given over
the last 2 years. :-)
I'm screwed without a circuit diagram, anyway. Some people never seem
to need 'em but I've never understood how they manage. Given a
diagram, I'm actually surprisingly good at fault-finding.

>I am assuming that AVO at Dover were useless with your
>enquiries regarding information on the AVO CT378B

I just assumed they'd blank me on the age of it - like Tektronix - and
try to sell me one of their new ones (assuming they still make SGs,
that is).

>If you wanted a good back up signal generator,
>that is dead easy to repair. Here is one for sale.
>Marconi TF 144H 50 ohms output Z. BNC connector.
>10KHz to 72MHz
>http://cgi.ebay.co.uk/ws/eBayISAPI.dll?ViewItem&category=40004&item=3094746090&rd=1

Thanks, I'll take a look later 2day after I've downloaded the update
for this latest virus that attacks your system via web portals.

>I like that model, for a number of reasons.
>Very stable frequency wise (when warmed up).
>It has that nice smell inside that you get from valve gear. LOL
>Everything inside is getatable.

Yeah, but what if one of those hard-to-find toobz goes tits-up?

>Big knobs and easy to read dials, good for failing eyesight.
>When the attenuator gets smoked by accidentally pressing a
>microphone push to talk button of a transceiver under repair
>on the bench, it is very easy to replace the resistors in the
>attenuator.
>It was not that heavy that I couldn't hump it up the gangways
>of ships, decades ago, to do radio service work but it is way too
>heavy for me now. Heh heh heh...
>
>You might like to check out how far away that unit for auction,
>is away from you. I wouldn't pay any more than 45 quid.

>Even 25 quid is right on the limit for me. But if no one bids
>you could get lucky. I bought one here in Australia for $10
>at a Ham fest.
>
>I only mentioned the TF144H incase you were looking for a
>good cheap sig gen to accompany your TF2002AS do some
>serious radio receiver work. Both have good attenuators.
>Having two good signal generators would help you out with
>all that filter and interference work that has been plaguing you
>over recent months. One sig gen as the desired signal, the
>second sig-gen as the interfering signal etc.

Sounds like a great idea, actually. The problem is of course that even here we're hardly spoiled for choice IRO older test equipment. Finding one of those particular models for sale in this country would be tricky, I'd imagine. Anyway, I'm about to mail you a pic of the AVO, so keep an eye open in your inbox and don't delete me as spam! Admire those classic 1950s lines.....
--

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3559. Re: Electric Fence Energiser

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 13:13:42 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <685f90t246lhf8sflv53bvbm7pp25n4ueg@4ax.com>
Source record: 26345
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Tue, 4 May 2004 01:52:17 -0300, Chaos Master <blown.fuse@ig.com.br>
wrote:

>A while ago (in February IIRC), in my city there were 2 people killed by
>electric fences after they accidentally touched the fence.
>
>The fence was ran directly from 110V mains

Quite a lot of low power toobz are happy to run at 110V plate voltage
(DC of course). The great thing about that happy voltage range of say
80-150V is that you can check for the present of the voltage just by
sticking your fingers between anode and deck. I know I'll get a lot of
abuse for suggesting this, but it works for me!

Disclaimer: Er, but don't try it at home; YMMV; fatalities can occur
at much lower voltages... :-)
--

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3560. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 14:02:39 UTC
From: john_c@tpg.com.au
Message-ID: <40979ed9.1794170@News.individual.net>
Source record: 26282
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 04 May 2004 13:56:24 +0100, Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote:

>On Tue, 04 May 2004 01:55:47 GMT, john_c@tpg.com.au (John Crighton)
>wrote:
>
>>Yes, I know that unit, I have a 2001
>>Repairing that unit is not dead easy for hobbyists.
>
>Hey, I must be semi-pro by now, with all the info I've been given over
>the last 2 years. :-)
>I'm screwed without a circuit diagram, anyway. Some people never seem
>to need 'em but I've never understood how they manage. Given a
>diagram, I'm actually surprisingly good at fault-finding.
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>>I am assuming that AVO at Dover were useless with your
>>enquiries regarding information on the AVO CT378B
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>I just assumed they'd blank me on the age of it - like Tektronix - and
>try to sell me one of their new ones (assuming they still make SGs,
>that is).
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>>If you wanted a good back up signal generator,
>>that is dead easy to repair. Here is one for sale.
>>Marconi TF 144H 50 ohms output Z. BNC connector.
>>10KHz to 72MHz
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>Thanks, I'll take a look later 2day after I've downloaded the update
>for this latest virus that attacks your system via web portals.
>
>>I like that model, for a number of reasons.
>>Very stable frequency wise (when warmed up).
>>It has that nice smell inside that you get from valve gear. LOL
>>Everything inside is getatable.
>
>Yeah, but what if one of those hard-to-find toobz goes tits-up?
>
>>Big knobs and easy to read dials, good for failing eyesight.
>>When the attenuator gets smoked by accidentally pressing a
>>microphone push to talk button of a transceiver under repair
>>on the bench, it is very easy to replace the resistors in the
>>attenuator.

>>It was not that heavy that I couldn't hump it up the gangways
>>of ships, decades ago, to do radio service work but it is way too
>>heavy for me now. Heh heh heh...
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>>You might like to check out how far away that unit for auction,
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>>Even 25 quid is right on the limit for me. But if no one bids
>>you could get lucky. I bought one here in Australia for $10
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>>good cheap sig gen to accompany your TF2002AS do some
>>serious radio receiver work. Both have good attenuators.
>>Having two good signal generators would help you out with
>>all that filter and interference work that has been plaguing you
>>over recent months. One sig gen as the desired signal, the
>>second sig-gen as the interfering signal etc.
>
>Sounds like a great idea, actually. The problem is of course that even
>here we're hardly spoiled for choice IRO older test equipment.

>Finding
>one of those particular models for sale in this country would be
>tricky, I'd imagine.

WHAT! YOU ARE KIDDING ME!
ARE YOU STILL ON THE PISS?
It is a bleeding Marconi. I thought they were made in
Chelmsford. That is just up the street from where you
are in London, by Australian standards of distance.

The unit I have been going on about is for sale in Beds UK.
Where is that? Bedfordshire maybe. Four streets away
by Australian distances. Current bid 0 bids. 25 quid.
You didn't even look. Cripes.....tearing hair out.
C'mon Paul, sober up.
Regards,
John Crighton
Sydney

3561. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 14:25:18 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <5n9f90tisot1ah8qjcc1f5ai7c136ldn4d@4ax.com>
Source record: 26283
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 04 May 2004 14:02:39 GMT, john_c@tpg.com.au (John Crighton)
wrote:

>WHAT! YOU ARE KIDDING ME!
>ARE YOU STILL ON THE PISS?
>It is a bleeding Marconi. I thought they were made in
>Chelmsford. That is just up the street from where you
>are in London, by Australian standards of distance.
>
>The unit I have been going on about is for sale in Beds UK.
>Where is that? Bedfordshire maybe. Four streets away
>by Australian distances. Current bid 0 bids. 25 quid.
>You didn't even look. Cripes.....tearing hair out.
>C'mon Paul, sober up.

Whoa! Calm down there, John. I'm simply not taking the risk of doing
anything Interenet-Explorer related until I've got the patch for the
sasser worm that's flying around the world at record speed. Sure I'll
follow your link as soon as it's safe to do so. Gimme a break will ya?
;-)
BTW, I've just posted you the photo of the Sig gen. Took a bit longer
than I meant to as I've been faffing about with photo software trying
to enhance the image. Taking flash photos of shiny, black objects is
pretty tricky, I've discovered...
--

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3562. Re: Electric Fence Energiser

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 15:15:59 UTC
From: Richard Henry <rphenry@home.com>
Message-ID: <UsOlc.13035$fE.9671@fed1read02>
Source record: 26346
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"Paul Burridge" <pb@notthisbit.osiris1.co.uk> wrote in message
news:685f90t246lhf8sflv53bvbm7pp25n4ueg@4ax.com...
> On Tue, 4 May 2004 01:52:17 -0300, Chaos Master <blown.fuse@ig.com.br>
> wrote:
>
> >A while ago (in February IIRC), in my city there were 2 people killed by
> >electric fences after they accidentally touched the fence.
> >
> >The fence was ran directly from 110V mains
>
> Quite a lot of low power toobz are happy to run at 110V plate voltage
> (DC of course). The great thing about that happy voltage range of say
> 80-150V is that you can check for the present of the voltage just by
> sticking your fingers between anode and deck. I know I'll get a lot of
> abuse for suggesting this, but it works for me!

In my college days, I spent a couple of summers working with electricians.
One old guy would test for power with the back of his hand. He could tell
the difference between 110V and 220V. He got onto a 440V circuit once and
complained for a week.

3563. Re: Spectrum Analyzer - VCO Results

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 15:41:56 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <109fedp3qt292bd@corp.supernews.com>
Source record: 26284

Alex Collins wrote:

> Thanks for all the help.
>
> Yes, you are right in the assumption that I've had it as 'clean' as is
> realistically possible.
>
> Yes, it's random noise.
>
> To explain, when the output of my board showed a 'triangle' as an output on
> the Spectrum Analyser, I first suspected by PLL, so I took the VCO module
> off the board and 'benched it up'. I used separate batteries for Vtune and
> Vcc supply, with very short (2cm) connections. I even put 1UF, 1N and 100N
> caps across the Vcc ** and Vtune ** pins and took the RF out on RG316
> directly to the Analyzer sheilded an grounded with extreme care. When I
> still observed hideous phase noise, I even tried decoupling the batteries
> with a resistors/caps in each supply line. I also tried all sorts of pads
> using SMD resistors cleverly soldered to the output pin and case... So I'm
> convinced I've given the VCO a better environment than anyone could possibly
> achieve in reality (ie. even on the best PCB layout).
>
> The phase noise results seem unachievable, but I hardly think Minicircuits
> are lying, and that it should be pretty easy to achieve -75dBc at 1,000Hz
> away. Even if it was -60dBc I'd be happy. But all I know is I'm getting the
> same results on all POS-900Ws I have.
>
> I'm using an Anritsu MS2661C, and basically just hoping to see the
> traditional 'needle spike' at Fc. (which is what I see from other VCOs with
> the Spectrum Analyzer on the same settings). But, instead, it's more like a
> triangle than a needle, and nothing seems to change that.
>
> Perhaps if one of you guys would mind me sending you a screenshot, direct
> (23kB), that may shed some light on it?
>
> Al.
> ----
> mail[underscore]me[at]freenet[dot]co[dot]uk
>

Perhaps that's -75dBc at a bandwidth of 0.001Hz?

--

Tim Wescott
Wescott Design Services

http://www.wescottdesign.com

3564. Iambic keyer with MSP430 chip??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 15:53:00 UTC
From: kc0atc@qsl.net
Message-ID: <a444e1b1.0405040753.5643aa88@posting.google.com>
Source record: 26285

I've seen a number of implementations of iambic
morse code keyers using the PIC chips.

Has anyone done it yet using the MSP430?

Chris

3565. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 16:40:25 UTC
From: RadioGuy <nospam@nospam.com>
Message-ID: <ZHPlc.18321$Ut1.553769@bgtnsc05-news.ops.worldnet.att.net>
Source record: 26286

Restored Ameco AC-1 on eBay; $177 and three days left!

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4675&item=3094489496&
rd=1

3566. Test

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 17:34:09 UTC
From: Bob Stein <bobXstein@sbcglobal.net>
Message-ID: <c78k7h$v0kb$1@ID-114734.news.uni-berlin.de>
Source record: 26287

```
--
Remove spam-suppression X from my address
```

3567. audio filter and the MAX295

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 18:18:15 UTC
From: Andy Bullington <a7bull@hotmail.com>
Message-ID: <H7RIc.31591$0H1.2596604@attbi_s54>
Source record: 26288

I want to build the "continuously variable audio filter" that's been in the Handbook recently but it seems the main chip, the Maxim MAX295 is out of production.
Does anybody know of a source for these or an easy substitution? Thanks.
Andy W1AWB

3568. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 18:27:47 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <DgRIc.34278$Xj6.581654@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26289

"RadioGuy" <nospam@nospam.com> wrote in message
news:ZHPlc.18321$Ut1.553769@bgtnsc05-news.ops.worldnet.att.net...
> Restored Ameco AC-1 on eBay; $177 and three days left!
>
>
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4675&item=3094489496&
> rd=1

And the reserve price hasn't been met! Silly hams.

73,

"PM"

3569. Re: Spectrum Analyzer - VCO Results

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 18:54:23 UTC
From: John Miles <jmiles@pop.removethistomailme.net>
Message-ID: <MPG.1b0186baf3a820a29896b2@news-central.giganews.com>
Source record: 26290

In article <c77req$lsge$1@ID-180264.news.uni-berlin.de>, me@privacy.net says...
> Thanks for all the help.
> The phase noise results seem unachievable, but I hardly think Minicircuits
> are lying, and that it should be pretty easy to achieve -75dBc at 1,000Hz
> away. Even if it was -60dBc I'd be happy. But all I know is I'm getting the
> same results on all POS-900Ws I have.
>
> I'm using an Anritsu MS2661C, and basically just hoping to see the
> traditional 'needle spike' at Fc. (which is what I see from other VCOs with
> the Spectrum Analyzer on the same settings). But, instead, it's more like a
> triangle than a needle, and nothing seems to change that.

You're subtracting 30 dB (i.e., 10*log10(RBW)) to account for the 1-khz RBW, right?

Also, to look at noise at a 1 kHz offset, you need a much narrower RBW filter. Looking at 1 kHz from the carrier through a 1 kHz filter, you will be only -6 dB down (or -3, depending on how your analyzer specifies its RBW) with a perfect signal! Take a look at the parameters in the graphs at http://www.qsl.net/ke5fx/synth.html -- I use a 100 Hz RBW filter to make measurements at 1 kHz from the carrier.

Also, what other VCOs are you comparing to? A rule of thumb is that equivalent-quality VCOs tend to get about 6 dB noisier per octave of frequency. A very good 900-MHz VCO will have about the same noise profile as a crappy 90-MHz VCO.... and that's without even getting into the tuning-sensitivity question that others have raised.

Finally, simple temperature-related drift (both short term and long term) will make it tough to measure anything 1 kHz from the carrier of a 900 MHz VCO. You're expecting almost one part per million stability from an unlocked VCO, and that isn't reasonable. To characterize phase noise at 1 kHz from the carrier, you should:

1) Lock the VCO with a PLL whose loop bandwidth is at least an order of magnitude lower (100 Hz or less)

2) Use an analyzer RBW at least an order of magnitude lower (100 Hz or less)

3) Perform this test only with a stabilized analyzer (otherwise, its internal LO's noise performance may be even worse than the VCO under test... something that's especially likely with lower-frequency VCOs)

4) Don't forget the 10*log10(RBW) adjustment factor.

Those four steps will get you close, but to do the job right, you need two more:

5) Distinguish between AM and PM noise by using the VCO under test to drive a mixer's LO port to saturation, with a significantly-cleaner reference driving the other port of the mixer

6) Compensate for the noise-equivalent bandwidth of your analyzer's RBW filters. Typically this will make the true noise values 2-3 dB worse than the observed values.

All 6 of these steps may be necessary to reproduce Mini-Circuits' catalog specification for the VCO.

-- john

---
http://www.qsl.net/ke5fx
Note: My E-mail address has been altered to avoid spam

3570. Re: audio filter and the MAX295

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 19:01:51 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <YpudnW-_bNtQegrdRVn-ug@comcast.com>
Source record: 26291

Check Newark Electronics www.newark.com -- one of theoft-cited problems with Maxim is that they run out of production when a chip becomes less popular.

Jack

"Andy Bullington" <a7bull@hotmail.com> wrote in message news:H7Rlc.31591$0H1.2596604@attbi_s54...
> I want to build the "continuously variable audio filter" that's been in the
> Handbook recently but it seems the main chip, the Maxim MAX295 is out of
> production.
> Does anybody know of a source for these or an easy substitution? Thanks.
> Andy W1AWB
>
>

3571. NE602 Oscillator

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 20:05:03 UTC
From: Phil Green <philip.r.green@btinternet.com>
Message-ID: <c78t1f$hq0$1@hercules.btinternet.com>
Source record: 26292

Hi,
I am building a 455KHz to 12KHz converter for DRM reception. I need the local oscillator to operate around 467KHz, if I use an old IF coil as the resonant element, what values of capacitors would you suggest for the base/emitter/ground capacitor divider in the Colpitts oscillator configuration?

Regards
Phil G0ELM

3572. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 22:01:12 UTC
From: Terry Given <the_domes@xtra.co.nz>
Message-ID: <HEDlc.102$XI4.2463@news.xtra.co.nz>
Source record: 26276
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Tim Auton" <tim.auton@uton.[groupSexWithoutTheY]> wrote in message
news:l8md90h7liefj5fr0cq187v482gk3b5hm6@4ax.com...
> "Highland Ham" <xygm0csz.wvkn6wh@ntlworld.com> wrote:
>
> >> The model number ain't gonna mean a lot to anyone as this is a very
> >> old piece of kit (1950s) that I keep mainly out of a sense of
> >> reverence for the past. :-) It's an old ex-RAF AVO. I have posted a
> >> picture of the socket to a.b.s.e under this same thread title...
> >> BTW, there's a 5p coin shown for scale, but since that won't mean much
> >> to anyone outside Britain, the outer of the socket is approx. 1" in
> >> diameter (which won't mean much to anyone in europe but it serves them
> >> right for adopting the metric system.:-))
> >>=====================
> >Since Britain is part of Europe you probably mean 'anyone in continental
> >europe'
> >
> >Just for your info ,the metric system was introduced /imposed by Napoleon
> >(eg more than 200 years ago)
> >For once he did the right thing ;) .
>
> The metric system also the law here in the UK. You can't sell stuff in
> pounds and ounces or feet and inches. Miles are the last bastion of
> the imperial system (on road signs), with the informal exception of
> pints of beer (IIRC technically it's a "large" beer and 576ml). I
> don't mind working in metric units, indeed I prefer them, but if
> anyone wants to stop me asking for a pint in the pub they'll have a
> fight on their hands!
>
> Oh yes, cannabis is still sold by the fraction of an ounce as it ever
> was, but I don't think selling cannabis in imperial units is any more
> illegal than just selling cannabis :)

same in NZ - pounds and ounces for cannabis. Everybody uses imperial for
height still, and newborn babies are in pounds & ounces...

>
>
> Tim
> --
> Love is a travelator.

3573. Re: NE602 Oscillator

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 23:04:24 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <109g8baln8ks14f@corp.supernews.com>
Source record: 26293

Phil Green wrote:

> Hi,
> I am building a 455KHz to 12KHz converter for DRM reception. I need the
> local oscillator to operate around 467KHz, if I use an old IF coil as the
> resonant element, what values of capacitors would you suggest for the
> base/emitter/ground capacitor divider in the Colpitts oscillator
> configuration?
>
> Regards
> Phil G0ELM
>
>

You're probably safe doing anything that works. I'd start by scaling
the caps from an app note, or choose 100 ohms at the target frequency.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

3574. Re: NE602 Oscillator

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-04 23:08:24 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <8kVlc.69926$7a5.50913@bignews6.bellsouth.net>
Source record: 26294

Tim Wescott wrote:
> Phil Green wrote:
>
>> Hi,
>> I am building a 455KHz to 12KHz converter for DRM reception. I need the
>> local oscillator to operate around 467KHz, if I use an old IF coil as the
>> resonant element, what values of capacitors would you suggest for the
>> base/emitter/ground capacitor divider in the Colpitts oscillator
>> configuration?
>>
>> Regards
>> Phil G0ELM
>>
>>
>
> You're probably safe doing anything that works. I'd start by scaling
> the caps from an app note, or choose 100 ohms at the target frequency.
>
Actually you can use an old transistor radio if can. Connect the
primary of the coil up as the tuned circuit and hook the collect tap
of the coil up instead of using a capacitive divider. IE: use a Hartley
oscillator circuit. You can connect the tap using a .001 cap to avoid a
dc connection.

3575. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 01:04:49 UTC
From: john_c@tpg.com.au
Message-ID: <40982721.1401945@News.individual.net>
Source record: 26295
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 04 May 2004 15:25:18 +0100, Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote:

>BTW, I've just posted you the photo of the Sig gen. Took a bit longer
>than I meant to as I've been faffing about with photo software trying
>to enhance the image. Taking flash photos of shiny, black objects is
>pretty tricky, I've discovered...
>--
>
Hello Paul,
I received the picture, thanks.
Those connectors are still easy to come by.
Here is a picture of a different sig gen but with a similar
style connector to yours.
http://www.thevalvepage.com/testeq/triplet/1632/1632.htm
That connector is a Pye connector.

Your connector is very similar but just slightly different.
When you contact AVO at Dover, ask them the name
of the RF connector that was used. Telling them it is
similar to a Pye should jog their memories.

If you are a purist
and you want to keep the original RF output connector then
you can find some at Ham radio trash and treasure field days
or if you are in a hurry, check out some radio service workshops,
like taxi two-way radio repair joints. Most technicians are horders
of old stuff. They might have an old lead with connector.

If you are not a purist
in keeping old gear original but only functional, open the unit
up and see if the old fashioned RF output connector can be
replaced with a BNC connector easily.

You still haven't told me what ohm meter readings you got
when you placed the meter prods from inner to outer on the
RF connector. (sig gen switched off)
Flick the attenuator switches to all positions. You are looking
for fairly consistent readings to check if the attenuator has
been damaged by a transceiver that transmitted accidentally
or the attenuator having being connected to a high DC voltage.

Tell us. Were the readings close to 50, 75 ohms or what?

Here in Sydney the Wireless Institute of Australia, a kind
of head office for hams keeps old manuals and circuits.
There would be an equivalent office for UK hams in London
with a library of old manuals for sure. Some UK hams
on this group will tell you who to contact.

You can still get those RF connectors and if you try hard
you will find a manual for the AVO CT378B.
Do the obvious first, phone or e-mail AVO.

"The Megger office in Dover
Archcliffe Road, Dover, Kent, CT17 9EN, England."
http://www.avointl.com/common/images/DoverMap.gif
The phone number is on this map.

There you are, they are a couple of hours down the road
from you. Nearly next door. Call in with your sig gen and
ask for a photo copy of the circuit, they will probably chuck
all sorts of stuff at you. :-)

Regards,
John Crighton
Sydney

3576. NE/SA602 VS NE/SA612

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 01:52:07 UTC
From: KD7TOG <kd7tog@earthlink.net>
Message-ID: <bNXlc.7416$Hs1.5849@newsread2.news.pas.earthlink.net>
Source record: 26296

Hi All. OK, I give ... what is the difference between these two chips ??

I've read both spec sheets, and they seem to be identical. Are they ?? Can they be used interchangeably ?? Both appear to be in current production.

Any clues would be great !!

Tony - KD7TOG

3577. Re: NE/SA602 VS NE/SA612

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 03:14:34 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c79m6q$s0d$1@freenet9.carleton.ca>
Source record: 26297

"KD7TOG" (kd7tog@earthlink.net) writes:
> Hi All. OK, I give ... what is the difference between these two chips ??
>
> I've read both spec sheets, and they seem to be identical. Are they ?? Can
> they be used interchangeably ?? Both appear to be in current production.
>
> Any clues would be great !!
>
> Tony - KD7TOG
>
>
They are pretty much the same thing. The 612 has looser specs.
I suspect for anything where it can be used, it wouldn't matter too much
which one you choose.

Keep in mind that it's not necessarily the best choice for a mixer
with strong signal handling capabilities, it was afterall originally
intended as a second mixer after filtering, but that shouldn't come
into play between the 602 and the 612.

Michael VE2BVW

3578. Re: Iambic keyer with MSP430 chip??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 06:35:48 UTC
From: Sverre Holm <la3za.0junk4me@qsl.net>
Message-ID: <c7a1sbbqs1@maud.ifi.uio.no>
Source record: 26298

> I've seen a number of implementations of iambic
> morse code keyers using the PIC chips.
>
> Has anyone done it yet using the MSP430?

KD1JV has done that in his new AT Sprint II 4-band miniaturerig, see manual
on http://www.qsl.net/kd1jv/ats2.HTM

--
Sverre Holm, LA3ZA
---
www.qsl.net/la3za

3579. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 10:39:58 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <3lgh909k99k7a8mqq2osk2bgurhq9sg6bk@4ax.com>
Source record: 26299
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 05 May 2004 01:04:49 GMT, john_c@tpg.com.au (John Crighton)
wrote:

>On Tue, 04 May 2004 15:25:18 +0100, Paul Burridge
><pb@notthisbit.osiris1.co.uk> wrote:
>
>>BTW, I've just posted you the photo of the Sig gen. Took a bit longer
>>than I meant to as I've been faffing about with photo software trying
>>to enhance the image. Taking flash photos of shiny, black objects is
>>pretty tricky, I've discovered...
>>--
>>
>Hello Paul,
>I received the picture, thanks.
>Those connectors are still easy to come by.
>Here is a picture of a different sig gen but with a similar
>style connector to yours.
>http://www.thevalvepage.com/testeq/triplet/1632/1632.htm
>That connector is a Pye connector.

Certainly looks like the one shown, I must say. I'd always thought Pye
connectors, though, had three pins, like the one in the photo I sent
you in the top LH corner. Or maybe that's a Bulgin connector. Blimey.

>Your connector is very similar but just slightly different.
>When you contact AVO at Dover, ask them the name
>of the RF connector that was used. Telling them it is
>similar to a Pye should jog their memories.

Okay, John, just out of curiosity I will. I expect them to tell me to
get f*cked, like HP or Tek would, but we'll see what their "extended
aftersales care" is like. "What do you mean I ought to be a new model?
This one's only 50 years old!" :-)

I'll post the results later today, along with answering your other
queries.

p.
--

The BBC: licenced at public expense to spread lies.

3580. Re: audio filter and the MAX295

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 11:20:19 UTC
From: Andy Bullington <a7bull@hotmail.com>
Message-ID: <T54mc.26879$IG1.1142716@attbi_s04>
Source record: 26300

Thanks Jack....Newark doesn't have them either. I KNOW their out there
somewhere but no luck so far. Very interesting about Maxim....too bad...
"John Walton" <jdwalton@comcast.net> wrote in message
news:YpudnW-_bNtQegrdRVn-ug@comcast.com...
> Check Newark Electronics www.newark.com -- one of theoft-cited problems
with
> Maxim is that they run out of production when a chip becomes less popular.
>
> Jack
>
> "Andy Bullington" <a7bull@hotmail.com> wrote in message
> news:H7Rlc.31591$0H1.2596604@attbi_s54...
> > I want to build the "continuously variable audio filter" that's been in
> the
> > Handbook recently but it seems the main chip, the Maxim MAX295 is out of
> > production.
> > Does anybody know of a source for these or an easy substitution? Thanks.
> > Andy W1AWB
> >
> >
>
>

3581. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 11:25:52 UTC
From: Rene Tschaggelar <none@none.net>
Message-ID: <4098cf73$0$719$5402220f@news.sunrise.ch>
Source record: 26197
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Paul Burridge wrote:
> Hi all,
>
> I was thinking about having a go at contriving (I won't say
> "designing" for obvious reasons) a class 'C' RF amp using MOSFETs
> instead of the usual BJTs/toobz. They seem - on the face of it at
> least - ideally suited to the task. I'm just a bit concerned about
> whether even the fastest ones would be fast enough, even given
> adequate gate drive. I'd be surprised if they weren't good for at
> least a few Mhz., but am quite frankly clueless as to MUF. Anyone
> know?

Paul,
what is the frequency range and the amplitude ?
I assume a 50 Ohm system.

Rene
--
Ing.Buero R.Tschaggelar - http://www.ibrtses.com
& commercial newsgroups - http://www.talkto.net

3582. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 11:32:46 UTC
From: SioL <spam@spam.com>
Message-ID: <2h4mc.2147$37.289892@news.siol.net>
Source record: 26198
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"Rene Tschaggelar" <none@none.net> wrote in message
news:4098cf73$0$719$5402220f@news.sunrise.ch...
> Paul Burridge wrote:
> > Hi all,
> >
> > I was thinking about having a go at contriving (I won't say
> > "designing" for obvious reasons) a class 'C' RF amp using MOSFETs
> > instead of the usual BJTs/toobz. They seem - on the face of it at
> > least - ideally suited to the task. I'm just a bit concerned about
> > whether even the fastest ones would be fast enough, even given
> > adequate gate drive. I'd be surprised if they weren't good for at
> > least a few Mhz., but am quite frankly clueless as to MUF. Anyone
> > know?
>
>
> Paul,
> what is the frequency range and the amplitude ?
> I assume a 50 Ohm system.

Yep, that's a good question for Win.

Suitable general purpose MOSFETs for RF finals (probably only feasible in the
shortwave range) and best way to drive them.

Let's say the more power the better (10-200W).

SioL

3583. Re: First time using ladderline??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 11:55:56 UTC
From: Andy Bullington <a7bull@hotmail.com>
Message-ID: <gD4mc.37118$I%1.2325724@attbi_s51>
Source record: 26301

If you are going to use your dipole for any bands other than 80 meters, ladderline is vastly more efficient. I would definitely NOT coil the ladderline. Been there done that...didn't work for me. What are you tuning your ladderline with? I just built the Richard Measures' Balanced Balanced Tuner for mine and it works great. The article is on the ARRL website.
Andy W1AWB
"Bob" <nubob5001@yahoo.com> wrote in message
news:4Lbic.793$_12.399@read1.cgocable.net...
> Hi, First time using the ladder line, Please offer your opinions?
>
> I have the 50 foot tower, it is right outside the shack window, so will be
> drilling the two small holes in the sill, then fishing through
approximately
> 12" or 18" then replace the spacers to keep the distance between the leads
> constant. That leaves the remaining 98 feet outside of which I need a
> distance of approx 35 or 40 feet of the ladder line to reach my center fed
> 80m or two wires 66feet each leg. What are my options with the left over
50
> feet (approx) of ladder line? Coil it up? Cut it? And what are the rules
> about keeping the ladder line away from the tower and steal guy wires that
> are not insulated? I only want to do this once now and first time using
the
> ladder line, all suggestions appreciated, thanks.....
>
>

3584. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 12:25:56 UTC
From: PaoloC <ollollo@hotpop.com>
Message-ID: <c7amgg$1m49o$1@ID-199778.news.uni-berlin.de>
Source record: 26302

Paul Burridge wrote:

> I was thinking about having a go at contriving (I won't say
> "designing" for obvious reasons) a class 'C' RF amp using MOSFETs
> instead of the usual BJTs/toobz. They seem - on the face of it at

Paul,
assuming that I understand your question and assuming you want a
50ohm-50ohm HF amplifier for CW, I have seen several designs using an
IRF510 MOSFET for amplifiers up to 30 MHz.
On a QST article using 2 IRF510 in a push-pull fashion some 30W could be
achieved over the entire HF range. For a simpler design check the NB6M
Miniboots (http://www.amqrp.org/kits/miniboots/miniboot.htm).

To my understanding, switching MOSFETs can be used as HF C-class
amplifiers as long as their gate capacitance is low (few pF).

As an example, IRF530 has a way too high gate capacitance to allow
acceptable HF results. On 80m it might be good, thought.

HTH,
Paolo IK1ZYW

3585. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 13:21:07 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <afph90hld13ojm62pdft5i2uiegvcut7sg@4ax.com>
Source record: 26303
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 05 May 2004 11:39:58 +0100, Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote:

>Okay, John, just out of curiosity I will. I expect them to tell me to
>get f*cked, like HP or Tek would, but we'll see what their "extended
>aftersales care" is like.

Excuse me???

I recently bought a surplus HP54659B module for my HP54602B DSO and had trouble getting it to work, so I called Agilent for help and, even though the scope and the module are no longer supported by Agilent, they took the call, assigned me a case number and a pleasant technician, and when she couldn't come up with a solution while we were on the phone, went away to try to find some information she needed to work on the problem. All for free. Above and beyond, I'd say...

In the meantime, I continued to try to solve the problem and found it was pilot error, so I called them back to let them know and to thank them for their time. I also found out that even though one of their instruments may become obsolete or break, they'll still do fee-based repair and cal.

I hope you fare as well with Marconi.

--
John Fields

3586. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 14:28:23 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <uath90h34gp9gk1l2qgn18mngpdvdv3g7d@4ax.com>
Source record: 26304
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 05 May 2004 01:04:49 GMT, john_c@tpg.com.au (John Crighton)
wrote:

>Your connector is very similar but just slightly different.
>When you contact AVO at Dover, ask them the name
>of the RF connector that was used. Telling them it is
>similar to a Pye should jog their memories.

Okay, I've just phoned them and drew the anticipated blank, I'm
afraid. It appears all the old info; manuals, spec sheets, data etc.
on all obsolete models got thrown out years ago. They only keep info
on current models, regrettably. Still, at least they didn't try to
sell me a new one.

>If you are a purist
>and you want to keep the original RF output connector then
>you can find some at Ham radio trash and treasure field days
>or if you are in a hurry, check out some radio service workshops,
>like taxi two-way radio repair joints. Most technicians are horders
>of old stuff. They might have an old lead with connector.

I think the obvious thing to do from my PoV is just to leave the front
as is for the sake of originality and just put a BNC socket at the
rear and feed the mains power in via a grommeted hole likewise at the
back. Having a dirty great power lead coming into the front panel
would have looked pretty gross anyway.

>If you are not a purist
>in keeping old gear original but only functional, open the unit
>up and see if the old fashioned RF output connector can be
>replaced with a BNC connector easily.

In the 1950s? I'd certainly have thought so!

>You still haven't told me what ohm meter readings you got
>when you placed the meter prods from inner to outer on the
>RF connector. (sig gen switched off)
>Flick the attenuator switches to all positions. You are looking
>for fairly consistent readings to check if the attenuator has
>been damaged by a transceiver that transmitted accidentally
>or the attenuator having being connected to a high DC voltage.
>
>Tell us. Were the readings close to 50, 75 ohms or what?

70-100 ohms depending on the positions of the coarse and fine
attenuator knobs, but not nice and smoothly; jumping around a lot (I

guess noisy pots that just want a squirt of contact lube. Does that sound right to you? I'd have expected a much greater range...

[rest noted and snipped]
--

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3587. Searching a transverter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 14:37:59 UTC
From: F4ASK <nospamf4ask@wanadoo.fr>
Message-ID: <XnF94E0A93323786GilbertF4ASK@193.252.19.141>
Source record: 26305

Hi Old Men

I am looking for a 27 Mhz (in) to 7 Mhz (out) transverter, mostly a kit to transmit in 40 m when I'll be allowed by the french administration.

I don't want to use a multi band trx, just an old CB rig and a transverter in my car from my home to my job place and return back home (one hour a day).

If anybody knows an adress, thanks in advance for the reply.

--
Gilbert RATS
Station amateur F4ASK
LE HAVRE
FRANCE

3588. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 14:54:47 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <63vh90dn8l2d98n2nalbuau9i1dbiealru@4ax.com>
Source record: 26306
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 05 May 2004 08:21:07 -0500, John Fields
<jfields@austininstruments.com> wrote:

>On Wed, 05 May 2004 11:39:58 +0100, Paul Burridge
><pb@notthisbit.osiris1.co.uk> wrote:
>
>
>>Okay, John, just out of curiosity I will. I expect them to tell me to
>>get f*cked, like HP or Tek would, but we'll see what their "extended
>>aftersales care" is like.
>
>---
>Excuse me???

Sorry. Tek, then. I must have been thinking of M$ - Oh, perhaps not;
they don't even support their current range of 'products' :-(
--

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3589. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 14:54:48 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <4fvh90d1t976ir63rd5qpppl4eu2b93gq0@4ax.com>
Source record: 26199
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Wed, 05 May 2004 13:25:52 +0200, Rene Tschaggelar <none@none.net>
wrote:

>Paul Burridge wrote:
>> Hi all,
>>
>> I was thinking about having a go at contriving (I won't say
>> "designing" for obvious reasons) a class 'C' RF amp using MOSFETs
>> instead of the usual BJTs/toobz. They seem - on the face of it at
>> least - ideally suited to the task. I'm just a bit concerned about
>> whether even the fastest ones would be fast enough, even given
>> adequate gate drive. I'd be surprised if they weren't good for at
>> least a few Mhz., but am quite frankly clueless as to MUF. Anyone
>> know?
>
>
>Paul,
>what is the frequency range and the amplitude ?
>I assume a 50 Ohm system.

Yeah, 50 in; 50-75 out say. As for frequency, that's what I'm trying
to establish: the highest useable frequency device for say 50W-100W
out. Amplitude's subservient to power. What kind of frequency upper
limit might be achievable? Say with the best gate driver arrangement
conceivable?
--

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3590. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 15:37:15 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <109i2gt4tfug72b@corp.supernews.com>
Source record: 26200
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Paul Burridge wrote:

> Hi all,
>
> I was thinking about having a go at contriving (I won't say
> "designing" for obvious reasons) a class 'C' RF amp using MOSFETs
> instead of the usual BJTs/toobz. They seem - on the face of it at
> least - ideally suited to the task. I'm just a bit concerned about
> whether even the fastest ones would be fast enough, even given
> adequate gate drive. I'd be surprised if they weren't good for at
> least a few Mhz., but am quite frankly clueless as to MUF. Anyone
> know?
>
> Thanks,
>
> p.

You are aware that there are power RF MOSFETs that go up to VHF, probably higher? There's a number of manufacturers out there -- I know Motorola makes them, probably any one that is in the cellular base station business makes them. You can pretty much build an amp off of a Motorola app note.

As far as using 'regular' power MOSFETs they tend to have very high gate capacitance as a result of getting the Rds down. Since Rds isn't the main efficiency driver in an RF amp the chips aren't well suited to RF application.

I know the ARRL handbook has information on MOSFET amps from 'standard' power MOSFETs, and there have been a few articles in QST and QEX.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

3591. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 16:23:21 UTC
From: jmeyer@nektonresearch.com
Message-ID: <21ede509.0405050823.38742d74@posting.google.com>
Source record: 26201
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Paul Burridge <pb@notthisbit.osiris1.co.uk> wrote in message
news:<mjeh9093ioe56ucglp5ubcbeqa1l945usl@4ax.com>...
> Hi all,
>
> I was thinking about having a go at contriving (I won't say
> "designing" for obvious reasons) a class 'C' RF amp using MOSFETs
> instead of the usual BJTs/toobz. They seem - on the face of it at
> least - ideally suited to the task. I'm just a bit concerned about
> whether even the fastest ones would be fast enough, even given
> adequate gate drive. I'd be surprised if they weren't good for at
> least a few Mhz., but am quite frankly clueless as to MUF. Anyone
> know?
>
> Thanks,
>
> p.

Here's a link to a MOSFET transistor that will do RF.

http://www.macom.com/data/datasheet/DU1260T.pdf

Jim

3592. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 16:27:40 UTC
From: SioL <spam@spam.com>
Message-ID: <5C8mc.2159$37.293056@news.siol.net>
Source record: 26202
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"Jim Meyer" <jmeyer@nektonresearch.com> wrote in message
news:21ede509.0405050823.38742d74@posting.google.com...
> Paul Burridge <pb@notthisbit.osiris1.co.uk> wrote in message
news:<mjeh9093ioe56ucglp5ubcbeqa1l945usl@4ax.com>...
> > Hi all,
> >
> > I was thinking about having a go at contriving (I won't say
> > "designing" for obvious reasons) a class 'C' RF amp using MOSFETs
> > instead of the usual BJTs/toobz. They seem - on the face of it at
> > least - ideally suited to the task. I'm just a bit concerned about
> > whether even the fastest ones would be fast enough, even given
> > adequate gate drive. I'd be surprised if they weren't good for at
> > least a few Mhz., but am quite frankly clueless as to MUF. Anyone
> > know?
> >
> > Thanks,
> >
> > p.
>
> Here's a link to a MOSFET transistor that will do RF.
>
> http://www.macom.com/data/datasheet/DU1260T.pdf
>
> Jim

I think what we're looking for here is a cheap, garden variety MOSFET used
as RF power amp.

Yep, there are units out there that will do VHF, UHF and maybe even SHF, but
the price will be Ultra High as well :)

SioL

3593. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 16:34:17 UTC
From: k7itm@aol.com
Message-ID: <3200347.0405050834.17e7e73@posting.google.com>
Source record: 26203
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Do you want a linear amp (per the subject line) or a class C amp?
They're not the same critter.

There was an article in QEX just one issue ago about a P-P power
MOSFET amplifier for 7MHz.

There are power MOSFETs designed specifically for RF service: just do
a Google search for 'RF power mosfet' and you'll get lots of hits.
Many are designed for service well beyond HF.

73 de k7itm

Paul Burridge <pb@notthisbit.osiris1.co.uk> wrote in message
news:<mjeh9093ioe56ucglp5ubcbeqa1l945usl@4ax.com>...
> Hi all,
>
> I was thinking about having a go at contriving (I won't say
> "designing" for obvious reasons) a class 'C' RF amp using MOSFETs
> instead of the usual BJTs/toobz. They seem - on the face of it at
> least - ideally suited to the task. I'm just a bit concerned about
> whether even the fastest ones would be fast enough, even given
> adequate gate drive. I'd be surprised if they weren't good for at
> least a few Mhz., but am quite frankly clueless as to MUF. Anyone
> know?
>
> Thanks,
>
> p.

3594. AL Magnet Wire?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 16:35:57 UTC
From: pbreed@netburner.com
Message-ID: <nr5i90p3j321h6umkpor7m34btrvafquuj@4ax.com>
Source record: 26307

Anyone know where I can find/ purchase a small qualtity
(Or any quantity) of Aluminum Magnet Wire?

Looking for 12 or 14 Ga AL magnet wire, square would be better, round is acceptable.

Paul (Kl7JG)

3595. Re: AL Magnet Wire?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 17:21:14 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <109i8jr46btiud9@corp.supernews.com>
Source record: 26308

pbreed@netburner.com wrote:
> Anyone know where I can find/ purchase a small qualtity
> (Or any quantity) of Aluminum Magnet Wire?
>
> Looking for 12 or 14 Ga AL magnet wire, square would be better, round is acceptable.
>
> Paul (Kl7JG)

Why? It's way less conductive than copper, so unless you're making an
air-wound coil that needs to save a few ounces I can't see how you'd
save anything using Al over Copper.

But I'm willing to be educated.

--

Tim Wescott, KG7LI

3596. Re: DAB Receiver.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 17:26:37 UTC
From: marsgal42@hotmail.com
Message-ID: <d42b5a72.0405050926.29fe6dff@posting.google.com>
Source record: 26309

Joe McElvenney <ximac@btinternet.com> wrote in message
news:<VA.0000001e.000ae5a2@btinternet.com>...
> Hi,
>
> To get an idea of what would be involved, do a Google
> for the Philips SAA3500 chip-set. This my second reply as
> the first seems to have disappeared into a newsgroup black
> hole.

The truly hardcore would want to implement Eureka-147
themselves. Who needs those silly chipsets anyway? :-)

We have a mostly-functional DAB setup in Canada, using
Eureka-147 (same as you Europeans) on frequencies around
1.45 GHz (not at all like you Europeans). It works
if you live close enough to the transmitter (I bought
one of the little Perstel radios for the hell of it),
but is highly unadvertised.

Laura Halliday VE7LDH "Que les nuages soient notre
Grid: CN89mg pied a terre..."
ICBM: 49 16.05 N 122 56.92 W - Hospital/Shafte

3597. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 17:28:15 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <0e8i90pr3qsn5gjs0mdcllapvnssl8u2p6@4ax.com>
Source record: 26204
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On 5 May 2004 09:34:17 -0700, k7itm@aol.com (Tom Bruhns) wrote:

Okay, thanks all and keep it comin'. I had no idea there were power
FETs capable of UHF. I'll follow any links given and investigate.

>Do you want a linear amp (per the subject line) or a class C amp?
>They're not the same critter.

Technically you're right, of course. I want to make an amp that
operates in Class C - yeah, I know that mode's the antithesis of
linear but over here in Britain, these bolt-on after market boosters -
though running in Class C., are knowns as "linears." I don't
understand it either.
Class C RF amps are basically switching on and off at high speed, so
it seemed like a job better suited to a power FET since power RF BJTs
are pretty expensive. Of course, I can now gather than the same
situation pertains with FETs as well.

>There was an article in QEX just one issue ago about a P-P power
>MOSFET amplifier for 7MHz.

It'd be fun to see just how fast you can force current in and out of
an ordinary, GP power MOS FET gate to get it switching as fast as
possible, I reckon, before pressing ahead with the dedicated devices.
--

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3598. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 17:37:52 UTC
From: Joerg <notthisjoergsch@removethispacbell.net>
Message-ID: <40992782.67F44307@removethispacbell.net>
Source record: 26205
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Hi Paul,

Is cost an issue or do you just want to see if it can be done with MOSFETs? About 25 years ago I did a small amp (25 watts or so) above 100MHz with FETs. But I found that cost was much higher as if I'd done it bipolar. When I looked at 100W my then pretty puny budget made the decision for me to go bipolar.

Personally I haven't seen much happening in cost/performance and I'd probably start out bipolar. Another cost saver is if you leave the supply voltage level a wildcard even if this is for a mobile app. It's no big deal these days to create whatever voltage the transistors like best from whatever is there as a supply.

I am still a big fan of tubes, as long as they are popular enough and thus cheap. Transistors are rather fickle and a tiny glitch in the load connection can send them to the greener grass in a millisecond. Tubes brush this off in stride.

For rock bottom bill of materials budget it has always paid off to check what TV manufacturers use in the horizontal deflection finals. That's as low cost as it gets. But I guess with the advent of big plasma screens that may fizzle over the next 10 years.

Regards, Joerg
http://www.analogconsultants.com

3599. Re: AL Magnet Wire?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 18:13:02 UTC
From: pbreed@netburner.com
Message-ID: <tibi90dc9sgemn5hrv7j6f6mvqdrses9jq@4ax.com>
Source record: 26310

I'ts a power converter for my Solar RC plane.
The inductors and the wires carying the current to the motor are a
significant part of the power system weight.

Paul

On Wed, 05 May 2004 10:21:14 -0700, Tim Wescott <tim@wescottnospamdesign.com> wrote:

>pbreed@netburner.com wrote:
>> Anyone know where I can find/ purchase a small qualtity
>> (Or any quantity) of Aluminum Magnet Wire?
>>
>> Looking for 12 or 14 Ga AL magnet wire, square would be better, round is acceptable.
>>
>> Paul (Kl7JG)
>
>Why? It's way less conductive than copper, so unless you're making an
>air-wound coil that needs to save a few ounces I can't see how you'd
>save anything using Al over Copper.
>
>But I'm willing to be educated.

3600. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 18:23:42 UTC
From: Tam/WB2TT <t-tammaru@c0mca$t.net>
Message-ID: <-qWdnW3QFLK2rATdRVn_iw@comcast.com>
Source record: 26206
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Paul,

Check out the Advanced Power Technology web site. They have some ap notes on using some more or less regular power FETs for RF. Nice thing is that the higher voltage ones will run off straight 170 V rectified AC.

Tam
"Paul Burridge" <pb@notthisbit.osiris1.co.uk> wrote in message news:mjeh9093ioe56ucglp5ubcbeqa1l945usl@4ax.com...
> Hi all,
>
> I was thinking about having a go at contriving (I won't say
> "designing" for obvious reasons) a class 'C' RF amp using MOSFETs
> instead of the usual BJTs/toobz. They seem - on the face of it at
> least - ideally suited to the task. I'm just a bit concerned about
> whether even the fastest ones would be fast enough, even given
> adequate gate drive. I'd be surprised if they weren't good for at
> least a few Mhz., but am quite frankly clueless as to MUF. Anyone
> know?
>
> Thanks,
>
> p.
> --
>
> The BBC: licenced at public expense to spread lies.

3601. Selecting oscillator harmonic on multi-mode line for ultra-wideband VCO?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 18:28:41 UTC
From: Scott Stephens <scottxs@comcast.net>
Message-ID: <tnamc.36397$0H1.3120575@attbi_s54>
Source record: 26207
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

If I have a waveguide, coax, or even lumped varactor tuned LC tank, could I simply select which harmonic I want it to oscillate at, by tunning a negative resistance?

Perhaps with the use of a "register key", such as is on flutes and clarinets? I suppose that functions as a high-pass filter on the line, when the hole is unplugged.

I'm interested in a multi-decade VCO, tuned with one control voltage and just a few switches.

No, I don't want to heterodyne or synthesize, because I'm interested in the regenerative/super-regenerative capabilities.

Any applicable app notes or articles? Dream on?

--
Scott

****

DIY Piezo-Gyro, PCB Drill Bot & More Soon!

http://home.comcast.net/~scottxs/

****

3602. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 18:45:36 UTC
From: john_c@tpg.com.au
Message-ID: <409923b9.3242398@News.individual.net>
Source record: 26311
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 05 May 2004 15:28:23 +0100, Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote:

>>
>>Tell us. Were the readings close to 50, 75 ohms or what?
>
>70-100 ohms depending on the positions of the coarse and fine
>attenuator knobs, but not nice and smoothly; jumping around a lot (I
>guess noisy pots that just want a squirt of contact lube. Does that
>sound right to you? I'd have expected a much greater range...
>

From an attenuator a large range is undesirable. The opposite
is what you want.
Lets just call the RF output Z for this unit 75 ohms Nominal. :-)
And you have crappy pots to put up with. Not good.

This unit is a bit cheap in the attenuator department.
Pots for both course and fine controls. I don't like that idea.
I prefer a switched attenuator for course and a pot for fine.
I'd much prefer a switch for fine also but that would be
too expensive.

Do a simple leakage test to see if this particular AVO
sig gen is worth keeping. On the bench beside the signal
generator place a radio and see if you can pick up the
signal from the generator. If a signal roars into the radio
then it is next to useless for serious or even hobby radio
work. Shield the RF output connector or short it.
(attenuator set to minimum output)
If it leaks RF and the frequency drifts a lot then you
might as well forget it.

A friend of mine did have a good use for a few old
crappy signal generators. He was into restoring really
old radio sets, record players with big horns and pianolas,
those pianos that play by themselves.
He was giving a demonstration of his gear at his house.
In another room he had the old signal generators being
externally modulated by modern tape recorders playing
old 1920's and 30s type music. The visitors were amused
and confused to hear the old style music coming from
the old style radios as they could tune into the local stations
also. The bullshit flew from those in the know. :-)

Regards,
John Crighton
Sydney

3603. Re: AL Magnet Wire?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 20:05:05 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <109ii73kn5a3t09@corp.supernews.com>
Source record: 26312

pbreed@netburner.com wrote:

> I'ts a power converter for my Solar RC plane.
> The inductors and the wires carying the current to the motor are a
> significant part of the power system weight.
>
> Paul
>
>
>
> On Wed, 05 May 2004 10:21:14 -0700, Tim Wescott <tim@wescottnospamdesign.com> wrote:
>
>
>>pbreed@netburner.com wrote:
>>
>>>Anyone know where I can find/ purchase a small qualtity
>>>(Or any quantity) of Aluminum Magnet Wire?
>>>
>>>Looking for 12 or 14 Ga AL magnet wire, square would be better, round is acceptable.
>>>
>>>Paul (Kl7JG)
>>
>>Why? It's way less conductive than copper, so unless you're making an
>>air-wound coil that needs to save a few ounces I can't see how you'd
>>save anything using Al over Copper.
>>
>>But I'm willing to be educated.
>
>

I suspect that you have a choice between (a) losing more power to
resistive losses because of the lower conductivity of aluminum or (b)
increasing the weight of your power converter because you've increased
the core size to save on resistive losses. You may be able to do better
with _silver_ wire and a smaller core, for all I know.

This doesn't mean that you shouldn't make the attempt, I'm just
wondering if you've taken all the variables into account.

Have you already pushed the switcher frequency up to insane levels?
Looked into resonant topologies, all that stuff?

--

Tim Wescott
Wescott Design Services

http://www.wescottdesign.com

3604. Re: AL Magnet Wire?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 20:15:38 UTC
From: pbreed@netburner.com
Message-ID: <mfii909vknilaabi7o0gfejsoujum2p8af@4ax.com>
Source record: 26313

Aluminum is the lowest weight conductor.
Copper, Silver and Gold have lower drop per unit area, but

Al is the lightest.

12Ga suqare Al has 2.260 ohms per K ft.
Weighs 7.28 lbs per K ft.

14 Ga Cu has 2.239 ohms per Kft
1Kft weighs 14.99lbs

6% more resistance at half the weight.

From the same chart
11 Ga Al has 1,755 ohms and a wt of 9.237

See:

http://www.mwswire.com/square.htm

I can buy wire from these guys' but they have a $100.00 minimum per line item.

Paul

On Wed, 05 May 2004 13:05:05 -0700, Tim Wescott <tim@wescottnospamdesign.com> wrote:

>pbreed@netburner.com wrote:
>
>> I'ts a power converter for my Solar RC plane.
>> The inductors and the wires carying the current to the motor are a
>> significant part of the power system weight.
>>
>> Paul
>>
>>
>>
>> On Wed, 05 May 2004 10:21:14 -0700, Tim Wescott <tim@wescottnospamdesign.com> wrote:
>>
>>
>>>pbreed@netburner.com wrote:
>>>
>>>>Anyone know where I can find/ purchase a small qualtity
>>>>(Or any quantity) of Aluminum Magnet Wire?
>>>>
>>>>Looking for 12 or 14 Ga AL magnet wire, square would be better, round is acceptable.
>>>>
>>>>Paul (Kl7JG)
>>>

>>>Why? It's way less conductive than copper, so unless you're making an
>>>air-wound coil that needs to save a few ounces I can't see how you'd
>>>save anything using Al over Copper.
>>>
>>>But I'm willing to be educated.
>>
>>
>
>I suspect that you have a choice between (a) losing more power to
>resistive losses because of the lower conductivity of aluminum or (b)
>_increasing_ the weight of your power converter because you've increased
>the core size to save on resistive losses. You may be able to do better
>with _silver_ wire and a smaller core, for all I know.
>
>This doesn't mean that you shouldn't make the attempt, I'm just
>wondering if you've taken all the variables into account.
>
>Have you already pushed the switcher frequency up to insane levels?
>Looked into resonant topologies, all that stuff?

3605. Re: AL Magnet Wire?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 21:47:14 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <109io6mmkk4jv37@corp.supernews.com>
Source record: 26314

pbreed@netburner.com wrote:

> Aluminum is the lowest weight conductor.
> Copper, Silver and Gold have lower drop per unit area, but
>
> Al is the lightest.
>
>
> 12Ga suqare Al has 2.260 ohms per K ft.
> Weighs 7.28 lbs per K ft.
>
> 14 Ga Cu has 2.239 ohms per Kft
> 1Kft weighs 14.99lbs
>
>
> 6% more resistance at half the weight.
>
> From the same chart
> 11 Ga Al has 1,755 ohms and a wt of 9.237
>
> See:
>
> http://www.mwswire.com/square.htm
>
> I can buy wire from these guys' but they have a $100.00 minimum per line item.
>
> Paul
>
>
-- snip --

Right. Aluminum has better conductivity per gram than copper. I
understood that even before you original post.

I also know that aluminum also has much _worse_ conductivity per unit
volume. And that the core that you're going to put it on can probably
accept a finite volume of wire. Since 12 gauge wire has about 50% more
area that means that you're only going to be able to put on 2/3 as many
turns, meaning your inductance is going to be about half of what you'd
get with copper wire. Even with a toroidal core you're still left with
about 2/3 your inductance.

That means that you need to go to a bigger core to get your inductance
up. Not only does this mean that you'll be adding a lot of mass, but a
bigger core will require more wire, so when you're done you won't be

getting a 2x savings in wire mass, and you'll more than likely have an inductor that is actually heavier than the copper alternative.

So, to repeat, have you run _all_ the numbers and verified that you'll achieve a savings?

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

3606. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 22:21:02 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <huoi901gbplk1v0vbti0vfbhf3uro4ksch@4ax.com>
Source record: 26315
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 05 May 2004 18:45:36 GMT, john_c@tpg.com.au (John Crighton)
wrote:

>From an attenuator a large range is undesirable. The opposite
>is what you want.

Oh, is that because the attenuator's maybe in parallel with the output
signal and earth?

>Lets just call the RF output Z for this unit 75 ohms Nominal. :-)
>And you have crappy pots to put up with. Not good.

Not good but not serious! I can always just replace the pots with ones
of equal values to the old ones - and better quality too.

>This unit is a bit cheap in the attenuator department.
>Pots for both course and fine controls. I don't like that idea.
>I prefer a switched attenuator for course and a pot for fine.
>I'd much prefer a switch for fine also but that would be
>too expensive.

My Marconi uses two rotary-switched attenuator controls, actually.
What's the problem with pots? Switches can go noisy too...

>Do a simple leakage test to see if this particular AVO
>sig gen is worth keeping. On the bench beside the signal
>generator place a radio and see if you can pick up the
>signal from the generator. If a signal roars into the radio
>then it is next to useless for serious or even hobby radio
>work. Shield the RF output connector or short it.
>(attenuator set to minimum output)
>If it leaks RF and the frequency drifts a lot then you
>might as well forget it.

Er, I *do* have a scope. Might that not be better or are you looking
for something a scope wouldn't show up?

Regards,

p.
--

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3607. Re: AL Magnet Wire?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 22:31:07 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <LWdmc.22947$Ut1.673952@bgtnsc05-news.ops.worldnet.att.net>
Source record: 26316

<pbreed@netburner.com> wrote in message
news:mfii909vknilaabi7o0gfejsoujum2p8af@4ax.com...
> http://www.mwswire.com/square.htm
>
> I can buy wire from these guys' but they have a $100.00 minimum per line
item.

Time to make some letterhead and see if you can get an engineering sample.
Tell them you're planning to publish the circuit or whatever it takes. Put a
phone number in the letter and advise others who may answer the phone to
expect a call from their sales dept inquiring about future quantities. I
don't recommend people do this simply to avoid buying a 2N2222, but it looks
as though you have a legitimate purpose in mind. All you have to lose is a
stamp. Good luck.

73,

"PM"

3608. Another unusual waveshape...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 22:39:08 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <3nqi901pv39v8n0cp26oc1hjqs0ms6rac8@4ax.com>
Source record: 26208
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Hi,

I'll avoid posting a screen shot of this one since so many people seem to have difficulty finding them on abse or can't get the group at all from their servers.

Imagine a two-state, high/low (on/off) wave form; i.e., negligible rise/fall times. Amplitude 5V. A bit like a square wave, in fact, except that the on and off period appears *different* between one cycle and the next and the next and so on. There's quite a bit of variation (anything from one whole time division to up to seven divs and all times between the two). There does appear to be an eventual series repetition, but it's only noticeable after about 30 cycles. I'm not sure how I've ended up with this, but would it be rich in odd and even order harmonics and suitable for generating them for frequency multiplication purposes, d'you think?

Thanks,
P.
--

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3609. Re: Another unusual waveshape...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 23:03:49 UTC
From: Joerg <notthisjoergsch@removethispacbell.net>
Message-ID: <409973EE.6F258FB8@removethispacbell.net>
Source record: 26209
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Hi Paul,

Seems like a huge amount of frequency modulation. Or a pulse width modulator? Where did it come from?

abse should be accessible from most servers. But one technique that is easier for people is to upload it to a "scratch pad section" on you web site, a sub domain which most hosting companies let you create. Then you can use a fast FTP tool such as WISE-FTP and zoom it up there, and delete it within seconds once you think it's no longer of interest. This allows you to paste a link right here in your post. Just avoid doing it the cheap way, via one of those "free" web space deals that swamp people with pop-ups.

Regards, Joerg
http://www.analogconsultants.com

3610. Re: audio filter and the MAX295

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 23:34:38 UTC
From: John Moriarity <k6qq@hdo.net>
Message-ID: <109iugfl8eli1c4@corp.supernews.com>
Source record: 26317

> I want to build the "continuously variable audio filter" that's been in
the
> Handbook recently but it seems the main chip, the Maxim MAX295 is out of
> production.
> Does anybody know of a source for these or an easy substitution? Thanks.
> Andy W1AWB
>

Andy,

Try the following URL. It lists a lot of
places to try.

http://www.repairfaq.org/REPAIR/F_Obsol_IC.html

73, John - K6QQ

3611. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 23:41:11 UTC
From: k7itm@aol.com
Message-ID: <3200347.0405051541.54cc1d11@posting.google.com>
Source record: 26210
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Paul Burridge <pb@notthisbit.osiris1.co.uk> wrote in message
news:<0e8i90pr3qsn5gjs0mdcllapvnssl8u2p6@4ax.com>...
...
> It'd be fun to see just how fast you can force current in and out of
> an ordinary, GP power MOS FET gate to get it switching as fast as
> possible, I reckon, before pressing ahead with the dedicated devices.

Back when hexfets first came out (1981 or so), I was having trouble
with them self-destructing. Back then, at least, if you read far
enough in the fine print, you'd find a maximum drain dv/dt rating. I
was seeing close to 100V in about 5nsec just before the
self-destruction as I recall. And the Siliconix V-mos transistors
were good for RF power back in that era.

If you're thinking driving it "digitally", that's probably the wrong
answer. Resonate the input and output capacitances, and life will be
much easier. Charging and discharging capacitance through a resistive
source is quite inefficient. Remember, too, that tuned triode valve
amplifiers are generally neutralized. Be VERY careful to not exceed
the gate-source voltage rating! Have fun playing, but expect some
"surprises."

Cheers,
Tom

3612. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-05 23:56:18 UTC
From: John Larkin <jjlarkin@highSNIPlandTHIStechPLEASEnology.com>
Message-ID: <mkvi90lglctjoe1k5lu0ng58c57j2dk6op@4ax.com>
Source record: 26211
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On 5 May 2004 16:41:11 -0700, k7itm@aol.com (Tom Bruhns) wrote:

>Back when hexfets first came out (1981 or so), I was having trouble
>with them self-destructing. Back then, at least, if you read far
>enough in the fine print, you'd find a maximum drain dv/dt rating.

And the substrate diode made a nice step-recovery diode, making it
possible to generate lethal dv/dt's in totally non-obvious ways!

John

3613. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 00:13:01 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <Uifmc.82520$oN1.50977@bignews5.bellsouth.net>
Source record: 26212
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Paul Burridge wrote:
> On Wed, 05 May 2004 13:25:52 +0200, Rene Tschaggelar <none@none.net>
> wrote:
>
>
>>Paul Burridge wrote:
>>
>>>Hi all,
>>>
>>>I was thinking about having a go at contriving (I won't say
>>>"designing" for obvious reasons) a class 'C' RF amp using MOSFETs
>>>instead of the usual BJTs/toobz. They seem - on the face of it at
>>>least - ideally suited to the task. I'm just a bit concerned about
>>>whether even the fastest ones would be fast enough, even given
>>>adequate gate drive. I'd be surprised if they weren't good for at
>>>least a few Mhz., but am quite frankly clueless as to MUF. Anyone
>>>know?
>>
>>
>>Paul,
>>what is the frequency range and the amplitude ?
>>I assume a 50 Ohm system.
>
>
> Yeah, 50 in; 50-75 out say. As for frequency, that's what I'm trying
> to establish: the highest useable frequency device for say 50W-100W
> out. Amplitude's subservient to power. What kind of frequency upper
> limit might be achievable? Say with the best gate driver arrangement
> conceivable?
Mosfets in the MRF5xx series (511, 521 for example) have been used
up to the 10 meter band with good results. A pair of them can give
at least 50w pep output. Depending on the input/output circuitry
used and the transistor they require 12-28v power supply. Layout
is somewhat critical.

3614. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 00:21:45 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <0vfmc.132937$Yw5.49234@bignews4.bellsouth.net>
Source record: 26213
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Joerg wrote:
> For rock bottom bill of materials budget it has always paid off to
> check what TV manufacturers use in the horizontal deflection finals.
> That's as low cost as it gets. But I guess with the advent of big
> plasma screens that may fizzle over the next 10 years.
>
Horizontal deflection transistors generally have an FT way too low
to be usefull much higher in frequency than the 160 or 80 meter ham
bands. Sweep tubes are now rare and expensive bottles costing more
than 'common' 6146 types. Surplus 1625 tubes used to be only a few
bucks each, can be found for about $5-10 each at hamfests and fleabay
(Still cheaper than 6146's though). 807's cost a little more.
The best bargin in price vs power might be the 811A, or the 813.

BTW I have a bunch of 813's I'd be willing to sell. Someone make me
a good offer on a lot of 5 of them. (Used, but don't look too bad).

3615. Re: audio filter and the MAX295

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 00:25:07 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <9yfmc.132952$Yw5.39120@bignews4.bellsouth.net>
Source record: 26318

John Moriarity wrote:
>>I want to build the "continuously variable audio filter" that's been in
>
> the
>
>>Handbook recently but it seems the main chip, the Maxim MAX295 is out of
>>production.
>>Does anybody know of a source for these or an easy substitution? Thanks.
>> Andy W1AWB
>>
>
>
> Andy,
>
> Try the following URL. It lists a lot of
> places to try.
>
> http://www.repairfaq.org/REPAIR/F_Obsol_IC.html
>
> 73, John - K6QQ
>
>
Isn't that chip currently used in the K2 transceiver? Where is
Electcraft getting them?

3616. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 01:00:28 UTC
From: Joerg <notthisjoergsch@removethispacbell.net>
Message-ID: <40998F43.8E39706B@removethispacbell.net>
Source record: 26214
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Hi Ken,

It depends on the TV but all this has been 20+ years ago. In those days I found a few transistors that made great shortwave amps. I believe their part numbers pretty much all started with BU. When one type fell out of favor with the TV manufacturers they showed up on markets by the carton. Usually at dump shops or discounters.

The other types that worked even better were the video transistors that drove the CRT. You had to secure a cheap source, no scavenging out of TVs because each set only had three. But they were low power so that required a soldering marathon and it only made sense when you could buy them a dime a dozen. We used to do some crazy things such as running them oil cooled because these weren't easy to mount on a heat sink.

Except for the CRT drivers the data sheets mostly didn't spec FT, just switching times. But that used to be the same with small signal types such as the BSS123 that I have used heavily in front ends.

Regards, Joerg
http://www.analogconsultants.com

3617. Re: Another unusual waveshape...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 01:14:53 UTC
From: Walter Harley <walterh@cafewalterNOSPAM.com>
Message-ID: <c7c3id$r3t$0@216.39.172.65>
Source record: 26215
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"Paul Burridge" <pb@notthisbit.osiris1.co.uk> wrote in message
news:3nqi901pv39v8n0cp26oc1hjqs0ms6rac8@4ax.com...
> I'm
> not sure how I've ended up with this, but would it be rich in odd and
> even order harmonics and suitable for generating them for frequency
> multiplication purposes, d'you think?

Seems to me that if you're not sure how you ended up with it, then it's not suitable for anything, because you don't know when it'll change to something else nor how to make it happen reliably.

One way to end up with a waveform like that is to pass random noise into a comparator. Another is to use a shift register to create a pseudorandom sequence generator, and then look at one bit of it.

3618. Re: audio filter and the MAX295

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 01:55:06 UTC
From: Andy Bullington <a7bull@hotmail.com>
Message-ID: <ZVgmc.37136$0H1.3319837@attbi_s54>
Source record: 26319

I built a K2 and I'm not finding the MAX295 in the manual or in the parts
list for the optional audio filter.
There is a MAX534 but that's a totally different chip.
If they DO use it in something I could just get a pair from them.
> Isn't that chip currently used in the K2 transceiver? Where is
> Electcraft getting them?

3619. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 04:12:58 UTC
From: john_c@tpg.com.au
Message-ID: <409988c6.1412012@News.individual.net>
Source record: 26320
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Wed, 05 May 2004 23:21:02 +0100, Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote:

>On Wed, 05 May 2004 18:45:36 GMT, john_c@tpg.com.au (John Crighton)
>wrote:
>
>>From an attenuator a large range is undesirable. The opposite
>>is what you want.
>
>Oh, is that because the attenuator's maybe in parallel with the output
>signal and earth?

You are not following me here, I am talking about accuracy here.
Stick your ohm meter on your Marconi generators RF output
connector and click through the ranges. You will see a nearly
constant resistance reading. A small variation in resistance
reading is acceptable. No variation is prefection. A large variation
in resistance reading, such as short circuit or open circuit in any
attenuator switch position means it is stuffed. Just for interest
tell us what you measure.

Someone may have transmitted into the generator or connected
it to a large DC voltage (wihout a DC blocking capacitor) when
testing a radio. That sort of thing happens all the time.

In one place I worked at there was an HP 8640B sig gen.
It had reverse RF protection and DC protection. You could
hear a distinctive loud click when the protection circuit
operated. The guy using the HP8640B would then look
sheepish and embarrassed because everyone in the work
shop, boss and all, knew he had shoved RF or DC up the
brand new (at that time) signal generator. All the other
signal generators were being silently zapped in that Racal
two-way radio factory. The man fixing the many signal
generators in that factory got the shits after a while. He
insisted that an external pad be used. Meaning, all he
had to do was open up a tiny external box and replace
the burnt out resistors and not open up the sig gen.

The point I am making is all attenuators are suspect
because they are so easily damaged, I have done
it my self. Pushed some stuff on the bench to one
side and the mic button on a transciever connected
to the sig gen got pressed.

>
>>Lets just call the RF output Z for this unit 75 ohms Nominal. :-)
>>And you have crappy pots to put up with. Not good.
>
>Not good but not serious! I can always just replace the pots with ones
>of equal values to the old ones - and better quality too.
>
Fine. But why would you bother when you might be able to
pick up a ten times better sig gen for 25 quid. The Marconi
TF144H on ebay, near you, in your country, 2 hours away.
http://cgi.ebay.co.uk/ws/eBayISAPI.dll?ViewItem&category=40004&item=3094746090&rd=1
Still 0 bids.

>>This unit is a bit cheap in the attenuator department.
>>Pots for both course and fine controls. I don't like that idea.
>>I prefer a switched attenuator for course and a pot for fine.
>>I'd much prefer a switch for fine also but that would be
>>too expensive.
>
>My Marconi uses two rotary-switched attenuator controls, actually.
>What's the problem with pots? Switches can go noisy too...

We are talking RF here!
If you examine your marconi attenuator you will see it is probably
a beautifully made cast aluminium assembly with a switch built
into it. It will be a top quality switch with beautifull silver
contacts. Each little resistor will have its own little compartment
in that beautifully machined solid block of aluminium. SHIELDING!
We are talking about shielding! A pot just can't compete
with an attenuator like that shielding wise.

>
>>Do a simple leakage test to see if this particular AVO
>>sig gen is worth keeping. On the bench beside the signal
>>generator place a radio and see if you can pick up the
>>signal from the generator. If a signal roars into the radio
>>then it is next to useless for serious or even hobby radio
>>work. Shield the RF output connector or short it.
>>(attenuator set to minimum output)
>>If it leaks RF and the frequency drifts a lot then you
>>might as well forget it.
>
>Er, I *do* have a scope. Might that not be better or are you looking
>for something a scope wouldn't show up?

We are talking microvolts here. Your scope, whatever it is,
will have a maximum sensitivity in millivolts. If you see millivolts
of RF by waving your scope probe near your sig gen then
your sig gen is useless. All you will see is a noisy 50 Hz
waveform.
The RF signal should come out of the signal generator
via the attenuator and RF connector and no where else.

Two way radios, work down to one microvolt or less.
General purpose scopes don't.
If a radio can hear the signal generator and it is not
even connected to it on the desired channel frequency
or any of the IF frequencies. It means an RF signal is
leaking from the case of the generator. The attenuator,
should be the controller of all RF leaving the sig gen.
A leaky signal generator as a service instument for
measuring receiver sensitivity is useless.

So before spending any money on the AVO sig gen,
check to see if it leaks RF. If it leaks forget it.

I only mentioned the Marconi 144H on ebay because it
is easy to repair by hobbyists, performs well, is cheap,
has industry standard 50 ohms output Z. circuit is available,
the unit is for sale just up the M1 high speed motorway
near you. I thought I would be helping a beginner who is
struggling with filters and may need a second good sig gen.
I'll get out your hair now. :-)

Regards,
John Crighton
Sydney

3620. Wanted: Manual for WaveTek 3000-200 Signal Generator + Deviation Meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 05:24:08 UTC
From: James McMann <jmcmann@pacbell.net>
Message-ID: <YZjmc.60798$5W4.16918@newssvr25.news.prodigy.com>
Source record: 26321
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.equipment,sci.electronics.misc,sci.electronics.repair

I am having great trouble locating the operations and service manual for the Wavetek 3000-200 Signal Generator with Option 200 Deviation Meter. If you have one I would like to buy it or a copy, digital or photocopy.

Reply to jmcmann{+A+T+}pacbell.net. You can figure out that you need to remove the stuff between and including the { } and insert the @ sign. Sorry for the trouble but you know how the spam is these days...

Thanks,

Jim McMann KF6WOR
San Jose, CA.

3621. Re: Another unusual waveshape...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 07:25:17 UTC
From: Robert Baer <robertbaer@earthlink.net>
Message-ID: <4099E82E.B18565E0@earthlink.net>
Source record: 26216
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Paul Burridge wrote:
>
> Hi,
>
> I'll avoid posting a screen shot of this one since so many people seem
> to have difficulty finding them on abse or can't get the group at all
> from their servers.
>
> Imagine a two-state, high/low (on/off) wave form; i.e., negligible
> rise/fall times. Amplitude 5V. A bit like a square wave, in fact,
> except that the on and off period appears *different* between one
> cycle and the next and the next and so on. There's quite a bit of
> variation (anything from one whole time division to up to seven divs
> and all times between the two). There does appear to be an eventual
> series repetition, but it's only noticeable after about 30 cycles. I'm
> not sure how I've ended up with this, but would it be rich in odd and
> even order harmonics and suitable for generating them for frequency
> multiplication purposes, d'you think?
>
> Thanks,
> P.
> --
>
> The BBC: licenced at public expense to spread lies.

Randumb duty cycle modulation would only alter the lower harmonic
spectrum; the rise anf fall times are the major source of frequency
multiples.

3622. Re: Another unusual waveshape...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 11:40:09 UTC
From: bigcat@meeow.co.uk
Message-ID: <a7076635.0405060340.714a18f8@posting.google.com>
Source record: 26217
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Paul Burridge <pb@notthisbit.osiris1.co.uk> wrote in message
news:<3nqi901pv39v8n0cp26oc1hjqs0ms6rac8@4ax.com>...

> Hi,
>
> I'll avoid posting a screen shot of this one since so many people seem
> to have difficulty finding them on abse or can't get the group at all
> from their servers.
>
> Imagine a two-state, high/low (on/off) wave form; i.e., negligible
> rise/fall times. Amplitude 5V. A bit like a square wave, in fact,
> except that the on and off period appears *different* between one
> cycle and the next and the next and so on. There's quite a bit of
> variation (anything from one whole time division to up to seven divs
> and all times between the two). There does appear to be an eventual
> series repetition, but it's only noticeable after about 30 cycles. I'm
> not sure how I've ended up with this, but would it be rich in odd and
> even order harmonics and suitable for generating them for frequency
> multiplication purposes, d'you think?
>
> Thanks,
> P.

Think about it this way: say it has at least one 3f half cycle per 30
cycles. Therefore if you feed it to a high Q filter that rings at 3f,
it will duly give you 3f.

But only if the 3f is present in the original wave. To ring at 3f off
one half cycle per 30 cycles it needs to be reasonably high q, and a
high q filter is not going to work off 2.7f, so a fixed pattern is
going to be better than a random pattern that might not contain the
right f at times.

I wouldnt be surprised if someone critiques this 'visual' analysis
though, I wait and see.

Regards, NT

3623. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 13:29:13 UTC
From: skavanagh72nospam@yahoo.ca
Message-ID: <5249fb3f.0405060529.57bfa453@posting.google.com>
Source record: 26218
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Paul:

There is an interesting two part article in QST May & June 1997 describing 300 W and 500 W output Class E (more efficient, non-linear) amplifiers using a single IRFP440 (300 W) or IRFP450(500 W) at 7 MHz. Since you are in the UK, there is a brief mention in Radcom (Technical Topics) August 1997.

Ordinary garden-variety power FETs can also be used for HF linear amplification using appropriate bias settings - though exactly how linear they can be in practice I don't know.

Steve VE3SMA

3624. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 13:46:59 UTC
From: Highland Ham <xygm0csz.wvkn6wh@ntlworld.com>
Message-ID: <ZGtmc.103$VR4.20@newsfe1-win>
Source record: 26225
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

> I was thinking about having a go at contriving (I won't say
> "designing" for obvious reasons) a class 'C' RF amp using MOSFETs
> instead of the usual BJTs/toobz. They seem - on the face of it at
> least - ideally suited to the task. I'm just a bit concerned about
> whether even the fastest ones would be fast enough, even given
> adequate gate drive. I'd be surprised if they weren't good for at
> least a few Mhz., but am quite frankly clueless as to MUF. Anyone
> know?
==========
MOSFETS can be used for RF applications provided the input and output
capacitance is sufficiently low.
I recently bought a power module from a surplus store with 48 pcs HUF76143P3
Hi-speed MOSFET in a TO220 package ,all for Euro 4.00 (just under US$5.-)
The relevant spec sheet says Input cap.= 3900pf , Output cap.=1600pF
,useful up to 1 MHz.

Most MOSFET studded RF power amps circuits I have come across are equipped
with IRFxxx range of devices.

Frank GM0CSZ / KN6WH

3625. Re: AL Magnet Wire?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 15:41:11 UTC
From: kyle <kyle@nospam.net>
Message-ID: <409A5C93.3A878E17@nospam.net>
Source record: 26322

ok,

Can you tell us how long will the wire be that you are winding on your coil ?

I agree that the smaller ga copper or silver could be the better way to go.

What is total weight of the coil using the al wire compared to cu or ag ?

kyle

pbreed@netburner.com wrote:

> Aluminum is the lowest weight conductor.
> Copper, Silver and Gold have lower drop per unit area, but
>
> Al is the lightest.
>
> 12Ga suqare Al has 2.260 ohms per K ft.
> Weighs 7.28 lbs per K ft.
>
> 14 Ga Cu has 2.239 ohms per Kft
> 1Kft weighs 14.99lbs
>
> 6% more resistance at half the weight.
>
> From the same chart
> 11 Ga Al has 1,755 ohms and a wt of 9.237
>
> See:
>
> http://www.mwswire.com/square.htm
>
> I can buy wire from these guys' but they have a $100.00 minimum per line item.
>
> Paul
>
> On Wed, 05 May 2004 13:05:05 -0700, Tim Wescott <tim@wescottnospamdesign.com> wrote:
>
> >pbreed@netburner.com wrote:
> >
> >> I'ts a power converter for my Solar RC plane.
> >> The inductors and the wires carying the current to the motor are a
> >> significant part of the power system weight.
> >>
> >> Paul
> >>

> >>
> >>
> >> On Wed, 05 May 2004 10:21:14 -0700, Tim Wescott <tim@wescottnospamdesign.com> wrote:
> >>
> >>
> >>>pbreed@netburner.com wrote:
> >>>
> >>>>Anyone know where I can find/ purchase a small qualtity
> >>>>(Or any quantity) of Aluminum Magnet Wire?
> >>>>
> >>>>Looking for 12 or 14 Ga AL magnet wire, square would be better, round is acceptable.
> >>>>
> >>>>Paul (Kl7JG)
> >>>
> >>>Why? It's way less conductive than copper, so unless you're making an
> >>>air-wound coil that needs to save a few ounces I can't see how you'd
> >>>save anything using Al over Copper.
> >>>
> >>>But I'm willing to be educated.
> >>
> >>
> > >I suspect that you have a choice between (a) losing more power to
> > >resistive losses because of the lower conductivity of aluminum or (b)
> > >_increasing_ the weight of your power converter because you've increased
> > >the core size to save on resistive losses. You may be able to do better
> > >with _silver_ wire and a smaller core, for all I know.
> > >
> > >This doesn't mean that you shouldn't make the attempt, I'm just
> > >wondering if you've taken all the variables into account.
> > >
> > >Have you already pushed the switcher frequency up to insane levels?
> > >Looked into resonant topologies, all that stuff?

3626. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 15:43:10 UTC
From: Fred Bartoli <fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo>
Message-ID: <409a5d0e$0$17912$626a14ce@news.free.fr>
Source record: 26219
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"John Larkin" <jjlarkin@highSNIPlandTHIStechPLEASEnology.com> a crit dans
le message news: mkvi90lglctjoe1k5lu0ng58c57j2dk6op@4ax.com...
> On 5 May 2004 16:41:11 -0700, k7itm@aol.com (Tom Bruhns) wrote:
>
>
> >Back when hexfets first came out (1981 or so), I was having trouble
> >with them self-destructing. Back then, at least, if you read far
> >enough in the fine print, you'd find a maximum drain dv/dt rating.
>
> And the substrate diode made a nice step-recovery diode, making it
> possible to generate lethal dv/dt's in totally non-obvious ways!
>

If the drain load is resonated and you want some control over the resonant
frequency (i.e. you have external to the mosfet tuning Cs) I don't see much
discontinuities in inductors current. Of course when all the stuff is well
"wired" and that's an entirely different matter, isn't it Paul ? ;-)

John, can you suggest some refs that nicely snap ?

Thanks,
Fred.

3627. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 16:21:45 UTC
From: k7itm@aol.com
Message-ID: <3200347.0405060821.117b3427@posting.google.com>
Source record: 26220
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Paul Burridge <pb@notthisbit.osiris1.co.uk> wrote in message
news:<0e8i90pr3qsn5gjs0mdcllapvnssl8u2p6@4ax.com>...

> Okay, thanks all and keep it comin'. I had no idea there were power
> FETs capable of UHF. I'll follow any links given and investigate.

Check out www.polyfet.com; SR706: 300 watts at 225MHz. SR705: 200
watts at 400MHz. LX401: 60W at 1000MHz. Also some very terse "ap
notes" and some somewhat less terse but very to the point technical
papers.

3628. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 16:27:52 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <31jk901ub186b9lof22plaamaj6ltbl75t@4ax.com>
Source record: 26323
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Thu, 06 May 2004 04:12:58 GMT, john_c@tpg.com.au (John Crighton)
wrote:

>You are not following me here, I am talking about accuracy here.
>Stick your ohm meter on your Marconi generators RF output
>connector and click through the ranges. You will see a nearly
>constant resistance reading. A small variation in resistance
>reading is acceptable. No variation is prefection. A large variation
>in resistance reading, such as short circuit or open circuit in any
>attenuator switch position means it is stuffed. Just for interest
>tell us what you measure.

Okay, well the vast majority of the positions are bang on 50 ohms.
About 7 are 51 ohms and after that point, the very end of the range
goes one ohm at a time up to 56 ohms as the worst instance. I guess
that's acceptable?

[cautionary tale snipped]

>Fine. But why would you bother when you might be able to
>pick up a ten times better sig gen for 25 quid. The Marconi
>TF144H on ebay, near you, in your country, 2 hours away.
>http://cgi.ebay.co.uk/ws/eBayISAPI.dll?ViewItem&category=40004&item=3094746090&rd=1
>Still 0 bids.

How the hell do you find this stuff?
Don't tell me, that was a rhetorical question. :-)
The thing is, John, I rather like the *look* of my AVO. What's
stopping me from just hooking up an external, switched attenuator?
And you say the use of pots is cheapo, but this is an ex-military
piece of kit withe MOD record stamped on the front. The military don't
buy junk - well, apart from Nimrod, that is.

>We are talking RF here!

Oh yeah. I'd forgotten about that. Plus the AVO goes up to 250Mhz,
too, so it's even more important. Not bad for its day, though!

>If you examine your marconi attenuator you will see it is probably
>a beautifully made cast aluminium assembly with a switch built
>into it. It will be a top quality switch with beautifull silver
>contacts. Each little resistor will have its own little compartment
>in that beautifully machined solid block of aluminium. SHIELDING!
>We are talking about shielding! A pot just can't compete
>with an attenuator like that shielding wise.

Okay, okay.

>>Er, I *do* have a scope. Might that not be better or are you looking
>>for something a scope wouldn't show up?
>
>We are talking microvolts here. Your scope, whatever it is,
>will have a maximum sensitivity in millivolts. If you see millivolts
>of RF by waving your scope probe near your sig gen then
>your sig gen is useless. All you will see is a noisy 50 Hz
>waveform.
>The RF signal should come out of the signal generator
>via the attenuator and RF connector and no where else.

It does. There's no leakage whatsoever from the case. Nonetheless, the attenuator appears to be shot to bits. I either get full output or nowt but jitter. But I can't bear to junk it so I'm going to (in due time) try to replace the pots. You can't really blame me, can you? It'd be a sin to chuck one of these onto the trash heap. It would also make a very nice looking ornament for the mantlepiece; looks a lot nicer in real life than that photo I took.

>Two way radios, work down to one microvolt or less.
>General purpose scopes don't.
>If a radio can hear the signal generator and it is not
>even connected to it on the desired channel frequency
>or any of the IF frequencies. It means an RF signal is
>leaking from the case of the generator. The attenuator,
>should be the controller of all RF leaving the sig gen.
>A leaky signal generator as a service instument for
>measuring receiver sensitivity is useless.

It's not leaking one iota.

>So before spending any money on the AVO sig gen,
>check to see if it leaks RF. If it leaks forget it.

Er, it doesn't. See above.
>
>I only mentioned the Marconi 144H on ebay because it
>is easy to repair by hobbyists, performs well, is cheap,
>has industry standard 50 ohms output Z. circuit is available,
>the unit is for sale just up the M1 high speed motorway
>near you.

Hey, "near you" in Australian terms, sure. But this is a very overcrowded little island indeed! The M1 ain't no "high speed motorway" except maybe at 3am. And to get on it in the first place I'd have to circumnavigate the London orbital M25 "The Road to Hell" in the Chris Rea record (and if you want to know why, just listen to the intro to part 1 of the record). The only alternative is attempting to drive straight across London, which would be even worse still.
Yeah, it's a great deal, but the guy won't deliver or post, so he might as well be on the dark side of the moon as in Bedfordshire, I'm

afraid, notwithstanding it's less than 150 miles away. :-(

>I thought I would be helping a beginner who is
>struggling with filters and may need a second good sig gen.
>I'll get out your hair now. :-)

I was a "beginner" 35 years ago. Obviously I'm not making much
progress. Thanks for the advice, anyway, it's always valued.

p.
--

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3629. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 16:27:54 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <ptlk90hihl79ebmj3ai0vsqn9ouu7007rs@4ax.com>
Source record: 26221
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Wed, 05 May 2004 20:13:01 -0400, Ken Scharf
<wa2mzeNOTTHIS@bellsouth.net> wrote:

>Mosfets in the MRF5xx series (511, 521 for example) have been used
>up to the 10 meter band with good results. A pair of them can give
>at least 50w pep output. Depending on the input/output circuitry
>used and the transistor they require 12-28v power supply. Layout
>is somewhat critical.

THanks, very interesting. I wonder if anyone's tried paralleling up
half a dozen of 'em for more power?

--

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3630. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 16:27:55 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <memk90tujekjolqqauv0i86vfec56oqort@4ax.com>
Source record: 26222
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Wed, 05 May 2004 20:21:45 -0400, Ken Scharf
<wa2mzeNOTTHIS@bellsouth.net> wrote:

>BTW I have a bunch of 813's I'd be willing to sell. Someone make me
>a good offer on a lot of 5 of them. (Used, but don't look too bad).

Nice. Got any KT88s?
--

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3631. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 16:27:55 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <srmk909t04lq3hiatu732tk912k5sers11@4ax.com>
Source record: 26223
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On 6 May 2004 06:29:13 -0700, skavanagh72nospam@yahoo.ca (Steve
Kavanagh) wrote:

>Paul:
>
>There is an interesting two part article in QST May & June 1997
>describing 300 W and 500 W output Class E (more efficient, non-linear)
>amplifiers using a single IRFP440 (300 W) or IRFP450(500 W) at 7 MHz.
>Since you are in the UK, there is a brief mention in Radcom (Technical
>Topics) August 1997.
>
>Ordinary garden-variety power FETs can also be used for HF linear
>amplification using appropriate bias settings - though exactly how
>linear they can be in practice I don't know.

Thanks, Steve. It's obviously doable. I haven't checked a Power FET
data sheet yet, but what's the betting they don't quote output
admittances for these devices? :-(
--

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3632. Re: Another unusual waveshape...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 16:27:56 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <18nk90t2qebtio77ra242nicich8p95db1@4ax.com>
Source record: 26224
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On 6 May 2004 01:14:53 GMT, "Walter Harley"
<walterh@cafewalterNOSPAM.com> wrote:

>Seems to me that if you're not sure how you ended up with it, then it's not
>suitable for anything, because you don't know when it'll change to something
>else nor how to make it happen reliably.
>
>One way to end up with a waveform like that is to pass random noise into a
>comparator. Another is to use a shift register to create a pseudorandom
>sequence generator, and then look at one bit of it.

That gives me an idea, Walter... How about I amplify the white noise
from a suitably noisy diode and feed it through a Schmidt or something
similar? What sort of harmonic richness would that give me?

--

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3633. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 16:49:45 UTC
From: John Larkin <jjlarkin@highSNIPlandTHIStechPLEASEnology.com>
Message-ID: <lhqk90t4nns27usprndt10df34i3gg4df1@4ax.com>
Source record: 26226
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Thu, 6 May 2004 17:43:10 +0200, "Fred Bartoli"
<fred._canxxxel_this_bartoli@RemoveThatAlso_free.fr_AndThisToo> wrote:

>
>"John Larkin" <jjlarkin@highSNIPlandTHIStechPLEASEnology.com> a ï¿½crit dans
>le message news: mkvi90lglctjoe1k5lu0ng58c57j2dk6op@4ax.com...
>> On 5 May 2004 16:41:11 -0700, k7itm@aol.com (Tom Bruhns) wrote:
>>
>>
>> >Back when hexfets first came out (1981 or so), I was having trouble
>> >with them self-destructing. Back then, at least, if you read far
>> >enough in the fine print, you'd find a maximum drain dv/dt rating.
>>
>> And the substrate diode made a nice step-recovery diode, making it
>> possible to generate lethal dv/dt's in totally non-obvious ways!
>>
>
>If the drain load is resonated and you want some control over the resonant
>frequency (i.e. you have external to the mosfet tuning Cs) I don't see much
>discontinuities in inductors current. Of course when all the stuff is well
>"wired" and that's an entirely different matter, isn't it Paul ? ;-)
>
>John, can you suggest some refs that nicely snap ?
>

I think that most mosfet substrate diodes are now designed to have
soft recovery, so that they won't snap and make a horrible dv/dt. I
blew up a lot of early Motorola mosfets in an h-bridge motor driver...
had to switch to darlingtons, and only figured it out later.

Anything with a p-i-n structure has a chance of being a snap diode. I
think it needs a hyperbolic doping profile or something to work well.
1N4005-7 types work, but usually only after a brief forward bias, not
DC. Somebody told me that many varicaps snap, but I haven't verified
that. Specifically-designed PIN diodes (the kind used in RF switches
and attenuators) don't snap, as they are doped to have very long
recovery times.

We tested over 60 different TO-220 power diodes to find the best
high-voltage drift step-recovery part. Then we found something else,
much better and more repeatable, but that's still a secret.

John

3634. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 16:56:06 UTC
From: Highland Ham <xygm0csz.wvkn6wh@spamisbad.com>
Message-ID: <C9umc.110$Zh5.42@newsfe1-win>
Source record: 26227
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

> THanks, very interesting. I wonder if anyone's tried paralleling up
> half a dozen of 'em for more power?
==========
Mind in-&output capacitances ,which add-on when parallelling.

Frank GM0CSZ / KN6WH

3635. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 17:05:44 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <109ks37lhabsd10@corp.supernews.com>
Source record: 26228
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Highland Ham wrote:
>>THanks, very interesting. I wonder if anyone's tried paralleling up
>>half a dozen of 'em for more power?
>
> ==========
> Mind in-&output capacitances ,which add-on when parallelling.
>
> Frank GM0CSZ / KN6WH
>
>
>

Not to mention that "critical layout".

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

3636. Re: Radio control transmitter - interference problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 18:32:22 UTC
From: pvenkman@hotmail.com
Message-ID: <791aa995.0405061032.25721a06@posting.google.com>
Source record: 26324

In case anyone cares I have an update on this. I was able to get a crystal controlled RF module for the transmitter and that took care of the problem. It's definitely the synth RF module that's experiencing the interference.

I'm still interested in findind a way to deal with this aside from just not using the synth module at that site. Now that I've more or less isolated the problem, is there anything I can try? I did make an attempt at sheilding just the RF module with no luck, but are there other options?

Thanks.

3637. Re: Wanted: Manual for WaveTek 3000-200 Signal Generator + Deviation Meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 19:06:50 UTC
From: Mike Berger <berger@shout.net>
Message-ID: <409A8CCA.5AF0FE95@shout.net>
Source record: 26325
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.equipment,sci.electronics.misc,sci.electronics.repair

Have you tried Wavetek? They still have manuals for old equipment, even
for things that were made by companies they merged with.

James McMann wrote:

> I am having great trouble locating the operations and service manual for the
> Wavetek 3000-200 Signal Generator with Option 200 Deviation Meter. If you
> have one I would like to buy it or a copy, digital or photocopy.
>
> Reply to jmcmann{+A+T+}pacbell.net. You can figure out that you need to
> remove the stuff between and including the { } and insert the @ sign. Sorry
> for the trouble but you know how the spam is these days...
>
> Thanks,
>
> Jim McMann KF6WOR
> San Jose, CA.

3638. Re: Radio control transmitter - interference problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 19:15:34 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <q9wmc.26039$Ut1.757447@bgtnsc05-news.ops.worldnet.att.net>
Source record: 26326

"P. Venkman" <pvenkman@hotmail.com> wrote in message
news:791aa995.0405061032.25721a06@posting.google.com...

> I'm still interested in findind a way to deal with this aside from
> just not using the synth module at that site. Now that I've more or
> less isolated the problem, is there anything I can try? I did make an
> attempt at sheilding just the RF module with no luck, but are there
> other options?

As long as it's at the transmitter, you could try a bandpass filter. Chances are the interference is coming from outside the RC band. There are programs available for free that will give you the numbers you need. I use one called AADE Filter Design from AADE.com . Ask if you need info on making the inductors etc.

"PM"

3639. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 20:34:05 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <848l9019008p65hqjj97ta61a9r9q6g8bi@4ax.com>
Source record: 26229
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Thu, 6 May 2004 17:56:06 +0100, "Highland Ham"
<xygm0csz.wvkn6wh@spamisbad.com> wrote:

>> THanks, very interesting. I wonder if anyone's tried paralleling up
>> half a dozen of 'em for more power?
>==================================
>Mind in-&output capacitances ,which add-on when parallelling.

Indeed, but there must be some current-pumping circuit that might
assist here?
--

The BBC: licenced at public expense to spread lies.

3640. most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 21:03:54 UTC
From: alanh_27@yahoo.com
Message-ID: <1e3670a7.0405061303.3f608231@posting.google.com>
Source record: 26379
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

ET onboard a ship. Have decided after time to have own tools. Got
them packed into one of those larger wheel-around, pull-the-handle-out
check-in hard-shell Samsonites. Ends up being a bit heavy, cause of
tool junkie genetic coding.

Works great..... except when have to go up or down ladderwells
("stairs", to you land pukes)

Better approach?

3641. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 21:09:35 UTC
From: nauga <nauga@brick.net>
Message-ID: <jQxmc.9901$Hs1.8671@newsread2.news.pas.earthlink.net>
Source record: 26380
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

Alan Horowitz wrote:

> Works great..... except when have to go up or down ladderwells
> ("stairs", to you land pukes)
>
> Better approach?

A complete set on each deck? :-)

Dave 'never enough' Hyde
nauga@brick.net

3642. Re: Another unusual waveshape...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 21:11:59 UTC
From: Walter Harley <walterh@cafewalterNOSPAM.com>
Message-ID: <c7e9mv$59v$0@216.39.172.65>
Source record: 26230
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"Paul Burridge" <pb@notthisbit.osiris1.co.uk> wrote in message
news:18nk90t2qebtio77ra242nicich8p95db1@4ax.com...
> That gives me an idea, Walter... How about I amplify the white noise
> from a suitably noisy diode and feed it through a Schmidt or something
> similar? What sort of harmonic richness would that give me?

I'm sorry, but I've not been keeping track of what kind of problem you're trying to solve. It sure sounds like you're trying to reinvent some sort of wheel here, though.

If you are trying to start with a noise source in order to generate a signal at a specific, adjustable frequency, then surely you must consider that the way to do that is to filter the noise source; and that the task of making a good tuneable filter is no different than the task of making a good tuneable oscillator. And starting with broadband noise is not generally a good approach to getting something quiet.

3643. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 21:13:57 UTC
From: Walter Harley <walterh@cafewalterNOSPAM.com>
Message-ID: <c7e9ql$661$0@216.39.172.65>
Source record: 26231
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"Paul Burridge" <pb@notthisbit.osiris1.co.uk> wrote in message
news:ptlk90hihl79ebmj3ai0vsqn9ouu7007rs@4ax.com...
> On Wed, 05 May 2004 20:13:01 -0400, Ken Scharf
> <wa2mzeNOTTHIS@bellsouth.net> wrote:
>
> >Mosfets in the MRF5xx series (511, 521 for example) have been used
> >up to the 10 meter band with good results. A pair of them can give
> >at least 50w pep output. Depending on the input/output circuitry
> >used and the transistor they require 12-28v power supply. Layout
> >is somewhat critical.
>
> THanks, very interesting. I wonder if anyone's tried paralleling up
> half a dozen of 'em for more power?

Modern commercial radio transmitters (including FM band, 88-108MHz) by,
e.g., Harris use MOSFETs. So clearly it is possible to get up to 25kW. I
believe they also use them in 100kW AM band transmitters. A bit of
meandering on Harris' web page will tell you more.

3644. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 21:15:55 UTC
From: R J Carpenter <rcarpen@erols.com>
Message-ID: <409ab918$0$3041$61fed72c@news.rcn.com>
Source record: 26242
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"Walter Harley" <walterh@cafewalterNOSPAM.com> wrote in message
news:c7e9ql$661$0@216.39.172.65...
>
> Modern commercial radio transmitters (including FM band, 88-108MHz) by,
> e.g., Harris use MOSFETs. So clearly it is possible to get up to 25kW.
> I believe they also use them in 100kW AM band transmitters. A bit of
> meandering on Harris' web page will tell you more.

I rather doubt that there are any tube-type 50 kW AM broadcast band transmitters sold these days. The 50 kW solid state Harris unit seems to be extremely widely used. Such transmitters use lots of hot-swappable modules - and can operate quite well with a few modules removed. At least some of these high-power AM rigs are essentially huge D-to-A converters. Look in the IEEE Transactions on Broadcasting for some ideas.

The 88-108 MHz units are conventional amplifiers, made of a number of modules and combiners.

The trick in the near future is adding IBOC digital to these rigs without non-linearities and unacceptable mixing products. Although "digital", the RF is of course analog in nature. I gather that solid state rigs accommodating IBOC were at the NAB show a couple of weeks ago.

When WTOP was running IBOC tests on 1500 kHz I don't know whether they were using their main solid state 50 kW Harris rig or the tube Continental 50 kW backup.

3645. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 21:17:54 UTC
From: Bruce Chang <bechang@swspambegonebell.net>
Message-ID: <6Yxmc.24748$Vh.11142@newssvr22.news.prodigy.com>
Source record: 26381
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

"Alan Horowitz" <alanh_27@yahoo.com> wrote in message
news:1e3670a7.0405061303.3f608231@posting.google.com...
> ET onboard a ship. Have decided after time to have own tools. Got
> them packed into one of those larger wheel-around, pull-the-handle-out
> check-in hard-shell Samsonites. Ends up being a bit heavy, cause of
> tool junkie genetic coding.
>
> Works great..... except when have to go up or down ladderwells
> ("stairs", to you land pukes)
>
> Better approach?
>

Use the escalator? =oD

Maybe separate your tools into two groups and get two Samsonites. I have a ton of tools at home but when I go to work on a friend's car, I can leave most all my tools at home and bring application specific tools that are light enough to carry in a backpack. I can't even imagine how long it'd take me to get all my tools from my rollaway into my car, much less just trying to lift my top chest without removing any tools from it first. =o)

Good luck,

-Bruce

3646. Re: Searching a transverter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 21:19:10 UTC
From: AM200 <gt@am200.net>
Message-ID: <MYxmc.149$wA1.147@newsfe2-gui.server.ntli.net>
Source record: 26327

Hello,

CTE International used to make them, but I think the output was 6.6MHz. The
people that make CB radio equipment.

"F4ASK" <nospamf4ask@wanadoo.fr> wrote in message
news:XnF94E0A93323786GilbertF4ASK@193.252.19.141...
> Hi Old Men
>
> I am looking for a 27 Mhz (in) to 7 Mhz (out) transverter, mostly a kit to
> transmit in 40 m when I'll be allowed by the french administration.
>
> I don't want to use a multi band trx, just an old CB rig and a transverter
in
> my car from my home to my job place and return back home (one hour a day).
>
> If anybody knows an adress, thanks in advance for the reply.
>
>
>
> --
> Gilbert RATS
> Station amateur F4ASK
> LE HAVRE
> FRANCE

3647. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 21:42:18 UTC
From: Richard Lamb <n6228l@earthlink.net>
Message-ID: <409AB2A8.E8CF7AB6@earthlink.net>
Source record: 26236
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

nauga wrote:
>
> Alan Horowitz wrote:
>
> > Works great..... except when have to go up or down ladderwells
> > ("stairs", to you land pukes)
> >
> > Better approach?
>
> A complete set on each deck? :-)
>
> Dave 'never enough' Hyde
> nauga@brick.net

Nah, go find a snipe and get your own block and tackle rig.

Richard

3648. Info on Toyo Crystal filter needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 22:40:02 UTC
From: Jeff <jeff_164@hotmail.com>
Message-ID: <a9zmc.1275$XI4.63649@news.xtra.co.nz>
Source record: 26232
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair

Hi, Im looking for info on a Toyo TQF-2849 (10.7MHz) crystal filter.
Need to know the bandwidth and termination impedances. Any help appreciated.
Toyo in Japan were no help.
regards,
JEFF
ZL3TNV

3649. Re: Selecting oscillator harmonic on multi-mode line for ultra-wideband VCO?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 22:43:39 UTC
From: k7itm@aol.com
Message-ID: <3200347.0405061443.7c7b4e99@posting.google.com>
Source record: 26233

Scott Stephens <scottxs@comcast.net> wrote in message
news:<tnamc.36397$0H1.3120575@attbi_s54>...
> If I have a waveguide, coax, or even lumped varactor tuned LC tank,
> could I simply select which harmonic I want it to oscillate at, by
> tunning a negative resistance?

A coaxial resonator will resonate on (or near) odd harmonics of the
lowest resonance, but you'll probably have trouble getting an LC tank
to have significant response at harmonics. Then the tuning will be
problematic, I think: you need to cover 3:1 for the lowest resonance,
and only 5:3 for the second, 7:5 for the third, etc., but capacitive
tuning would need a capacitance for the lowest resonance which is
awkward for the higher ones. Maybe you could only use the resonator,
say, at and above the 7th harmonic of the lowest resonance, and forget
about the 1st, 3rd and 5th.
>
> Perhaps with the use of a "register key", such as is on flutes and
> clarinets? I suppose that functions as a high-pass filter on the line,
> when the hole is unplugged.

Just as an overtone crystal oscillator selects the overtone, you
should be able to do similarly with a coaxial resonator oscillator.
There's likely a practical limit. (The coupling will change with
which resonance is selected, no?)
>
> I'm interested in a multi-decade VCO, tuned with one control voltage and
> just a few switches.

You can switch both the C and the L of an LC tank and cover a wide
range...but it's often easier to just build separate oscillators and
switch among them.
>
> No, I don't want to heterodyne or synthesize, because I'm interested in
> the regenerative/super-regenerative capabilities.
>
> Any applicable app notes or articles? Dream on?

I predict there will be a whole lot to learn on your way to your
goal...but remember the old regen radios that used plug-in coils for
different bands? Some of them could cover quite a range. You may be
able to accomplish something similar with diode switching.

Cheers,
Tom

3650. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 22:52:54 UTC
From: jakdedert <jdedert@bellsouth.net>
Message-ID: <jbzmc.31560$UG2.30725@bignews2.bellsouth.net>
Source record: 26237
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

"Alan Horowitz" <alanh_27@yahoo.com> wrote in message
news:1e3670a7.0405061303.3f608231@posting.google.com...
> ET onboard a ship. Have decided after time to have own tools. Got
> them packed into one of those larger wheel-around, pull-the-handle-out
> check-in hard-shell Samsonites. Ends up being a bit heavy, cause of
> tool junkie genetic coding.
>
> Works great..... except when have to go up or down ladderwells
> ("stairs", to you land pukes)
>
> Better approach?

Pukes? I guess you're applying that term 'affectionately' since we're the ones you're asking for help. I can't add much to the answers already given, unless there is something like a lift or elevator on board. Some of those cases are modular, with a series of stacking boxes. Perhaps, like others have suggested, you could divide your stash into several piles, and only move the ones you actually expect to need at a time.

jak

3651. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 23:43:08 UTC
From: Dick C <foo.dickcr@comcast.net>
Message-ID: <Xns94E1AA0851D13dickcrcomcastnet@216.196.97.136>
Source record: 26238
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

Alan Horowitz wrote in rec.autos.tech

> ET onboard a ship. Have decided after time to have own tools. Got
> them packed into one of those larger wheel-around, pull-the-handle-out
> check-in hard-shell Samsonites. Ends up being a bit heavy, cause of
> tool junkie genetic coding.

What do you need that many tools for anyway? Kind of like the golfer who takes a bag full of golf clubs to play a par 3 course. Take only what you need in a smaller case, and leave the rest in your workshop. Seriously, I have worked in industrial plants where I had a over a hundred pounds of tools in the shop, but usually carried a collection of tools that would allow me to do 90 percent of all jobs I had to do. A lot of the jobs I would just grab a pair of longnose pliers, a couple of screwdrivers, and my meter.

--
Dick #1349
Damn it . . . Don't you dare ask God to help me.
To her housekeeper, who had begun to pray aloud.
~~ Joan Crawford, actress, d. May 10, 1977
Home Page: dickcr.iwarp.com
email: dickcr@comcast.net

3652. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-06 23:44:58 UTC
From: john_c@tpg.com.au
Message-ID: <409aba8b.2634829@News.individual.net>
Source record: 26234
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Thu, 06 May 2004 17:27:52 +0100, Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote:

>On Thu, 06 May 2004 04:12:58 GMT, john_c@tpg.com.au (John Crighton)
>wrote:
>
>>You are not following me here, I am talking about accuracy here.
>>Stick your ohm meter on your Marconi generators RF output
>>connector and click through the ranges. You will see a nearly
>>constant resistance reading. A small variation in resistance
>>reading is acceptable. No variation is prefection. A large variation
>>in resistance reading, such as short circuit or open circuit in any
>>attenuator switch position means it is stuffed. Just for interest
>>tell us what you measure.
>
>Okay, well the vast majority of the positions are bang on 50 ohms.
>About 7 are 51 ohms and after that point, the very end of the range
>goes one ohm at a time up to 56 ohms as the worst instance. I guess
>that's acceptable?

Yes, that is fine. You are laughing with that unit. Great! :-)

>The thing is, John, I rather like the *look* of my AVO. What's
>stopping me from just hooking up an external, switched attenuator?

Nothing! That is an excellent idea.

>And you say the use of pots is cheapo, but this is an ex-military
>piece of kit withe MOD record stamped on the front. The military don't
>buy junk - well, apart from Nimrod, that is.

Heh heh heh, I can see where you are coming from. Military
buying junk is a whole topic on its own.

>It does. There's no leakage whatsoever from the case. Nonetheless, the
>attenuator appears to be shot to bits. I either get full output or
>nowt but jitter. But I can't bear to junk it so I'm going to (in due
>time) try to replace the pots. You can't really blame me, can you?

I like to see old stuff preserved and working too.

>It'd be a sin to chuck one of these onto the trash heap. It would also
>make a very nice looking ornament for the mantlepiece; looks a lot
>nicer in real life than that photo I took.

Yes it would be a sin to chuck it. Just don't expect a lot from it.

>
>>I thought I would be helping a beginner who is
>>struggling with filters and may need a second good sig gen.
>>I'll get out your hair now. :-)
>
>I was a "beginner" 35 years ago. Obviously I'm not making much
>progress. Thanks for the advice, anyway, it's always valued.

I should have said helping a fellow beginner and hobbyist. I am
in the same boat as you, continually struggling. So I know what
it is like being in the dark and feeling my way. :-)

Getting back to your external attenuator idea.
I often buy dud damaged boat anchor sig gens, for a few dollars
at ham meetings/trash and treasure buy and sells, in the hope of
finding a nice attenuator. I have humped a few monsters home
only to find rubbish inside. I have been lucky a couple of times.
There are plenty of ready made attenuator units for sale
usually for big dollars from a hobbyists point of view.

Have a look at this one.
http://cgi.ebay.co.uk/ws/eBayISAPI.dll?ViewItem&category=40004&item=3812959880&rd=1
How far is Farnam from you? Postage is 4 quid.
No information as to the maximum frequency but if you can
pick it up for a tenner it might be a good buy even if you use
it for low frequncies for something else. I am sure you spend
more that that at your local. Take a chance! Bid 10 max. :-)

Regards,
John Crighton
Sydney

3653. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 00:49:04 UTC
From: Tam/WB2TT <t-tammaru@c0mca$t.net>
Message-ID: <SaGdnar0LrOcQAfdRVn-ig@comcast.com>
Source record: 26243
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"Walter Harley" <walterh@cafewalterNOSPAM.com> wrote in message
news:c7e9ql$661$0@216.39.172.65...
> "Paul Burridge" <pb@notthisbit.osiris1.co.uk> wrote in message
> news:ptlk90hihl79ebmj3ai0vsqn9ouu7007rs@4ax.com...
> > On Wed, 05 May 2004 20:13:01 -0400, Ken Scharf
> > <wa2mzeNOTTHIS@bellsouth.net> wrote:
> >
> > >Mosfets in the MRF5xx series (511, 521 for example) have been used
> > >up to the 10 meter band with good results. A pair of them can give
> > >at least 50w pep output. Depending on the input/output circuitry
> > >used and the transistor they require 12-28v power supply. Layout
> > >is somewhat critical.
> >
> > THanks, very interesting. I wonder if anyone's tried paralleling up
> > half a dozen of 'em for more power?
>
> Modern commercial radio transmitters (including FM band, 88-108MHz) by,
> e.g., Harris use MOSFETs. So clearly it is possible to get up to 25kW. I
> believe they also use them in 100kW AM band transmitters. A bit of
> meandering on Harris' web page will tell you more.
>
>
Their AM transmitter combines the outputs of 60 some modules to get the
instantanous PEP they need. All modules are fed the same square wave signal,
and modules run class E (I think). They don't say what the sampling rate is,
but I would guess ~20 KHz. There is a WLW related web site that has more
info than the Harris site. If I run across it again, I will post it.

Tam

3654. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 01:38:41 UTC
From: Sparks <nospam@nospam.com>
Message-ID: <BMBmc.48618$Xj6.824149@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26239
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

Alan Horowitz <alanh_27@yahoo.com> wrote in message
news:1e3670a7.0405061303.3f608231@posting.google.com...
> ET onboard a ship. Have decided after time to have own tools. Got
> them packed into one of those larger wheel-around, pull-the-handle-out
> check-in hard-shell Samsonites. Ends up being a bit heavy, cause of
> tool junkie genetic coding.
>
> Works great..... except when have to go up or down ladderwells
> ("stairs", to you land pukes)
>
> Better approach?

If you need all those tools for a job you probably don't know what are you
doing anyway!

Best regards,
Radio Electronics Officer

3655. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 02:44:00 UTC
From: turnkey4099@hotmail.com
Message-ID: <751f8d35.0405061844.54f40239@posting.google.com>
Source record: 26240
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

"nauga" <nauga@brick.net> wrote in message
news:<jQxmc.9901$Hs1.8671@newsread2.news.pas.earthlink.net>...
> Alan Horowitz wrote:
>
> > Works great..... except when have to go up or down ladderwells
> > ("stairs", to you land pukes)
> >
> > Better approach?
>
> A complete set on each deck? :-)
>
> Dave 'never enough' Hyde
> nauga@brick.net

Only go up when in the southern hemisphere and down in the northern? ;)

Harry K

3656. Re: Another unusual waveshape...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 03:27:43 UTC
From: YD <yd.techHAT@techie.com>
Message-ID: <8mdl9016u9o4ib57ble6hkqfu7k3cnv1qn@4ax.com>
Source record: 26244
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Wed, 05 May 2004 23:39:08 +0100, Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote:

>Hi,
>
>I'll avoid posting a screen shot of this one since so many people seem
>to have difficulty finding them on abse or can't get the group at all
>from their servers.
>
>Imagine a two-state, high/low (on/off) wave form; i.e., negligible
>rise/fall times. Amplitude 5V. A bit like a square wave, in fact,
>except that the on and off period appears *different* between one
>cycle and the next and the next and so on. There's quite a bit of
>variation (anything from one whole time division to up to seven divs
>and all times between the two). There does appear to be an eventual
>series repetition, but it's only noticeable after about 30 cycles. I'm
>not sure how I've ended up with this, but would it be rich in odd and
>even order harmonics and suitable for generating them for frequency
>multiplication purposes, d'you think?
>
>Thanks,
>P.

What's the circuit supposed to do? What's the frequency? What is it
made of? What's on the inputs?

You probably screwed up as usual and need your betters to bail you
out.

- YD.

--
Remove HAT if replying by mail.

3657. Re: Iambic keyer with MSP430 chip??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 03:36:28 UTC
From: chris@amos.yipyap.com
Message-ID: <slrnc9m11s.rn3.chris@amos.yipyap.com>
Source record: 26235

On Wed, 5 May 2004 08:35:48 +0200, Sverre Holm <la3za.0junk4me@qsl.net> wrote:
>> I've seen a number of implementations of iambic
>> morse code keyers using the PIC chips.
>>
>> Has anyone done it yet using the MSP430?
>
>KD1JV has done that in his new AT Sprint II 4-band miniaturerig, see manual
>on http://www.qsl.net/kd1jv/ats2.HTM
>
>

I don't see any sign of source code. Do you?
Maybe I'll contact him.

3658. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 03:52:57 UTC
From: Stu & Kathy Fields <sfkf@iwvisp.com>
Message-ID: <GuGdnSqU-4CulAbdRVn-sw@iwvisp.com>
Source record: 26241
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

Quickly move into management. Pencils and cell phone are light.

S. Fields
"Alan Horowitz" <alanh_27@yahoo.com> wrote in message
news:1e3670a7.0405061303.3f608231@posting.google.com...
> ET onboard a ship. Have decided after time to have own tools. Got
> them packed into one of those larger wheel-around, pull-the-handle-out
> check-in hard-shell Samsonites. Ends up being a bit heavy, cause of
> tool junkie genetic coding.
>
> Works great..... except when have to go up or down ladderwells
> ("stairs", to you land pukes)
>
> Better approach?

3659. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 04:26:57 UTC
From: Paul Anton <NC2273H@hotmail.com>
Message-ID: <Ec-dnYUOztGOjQbd4p2dnA@comcast.com>
Source record: 26245
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

Leave it unlocked--it will get lighter real quick

> check-in hard-shell Samsonites. Ends up being a bit heavy, cause of
> tool junkie genetic coding.
>
> Works great..... except when have to go up or down ladderwells
> ("stairs", to you land pukes)
>
> Better approach?

3660. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 05:30:39 UTC
From: ablight@alphalink.com.au
Message-ID: <1fc7b362.0405062130.26ac0e25@posting.google.com>
Source record: 26246
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

alanh_27@yahoo.com (Alan Horowitz) wrote in message
news:<1e3670a7.0405061303.3f608231@posting.google.com>...
> ET onboard a ship. Have decided after time to have own tools. Got
> them packed into one of those larger wheel-around, pull-the-handle-out
> check-in hard-shell Samsonites. Ends up being a bit heavy, cause of
> tool junkie genetic coding.
>
> Works great..... except when have to go up or down ladderwells
> ("stairs", to you land pukes)
>
> Better approach?

Do what everyone else with more intelligence than a housebrick does -
clean out your toolbox and only cart around what you need. If you
havent figured out that you only need a small box for 90% of jobs,
then you havent been doing this all that long.....
73 de VK3BFA Andrew

3661. Re: Info on Toyo Crystal filter needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 06:23:28 UTC
From: casab <maisot@POISTA.kolumbus.fi>
Message-ID: <c7fa0s$pg7$1@phys-news1.kolumbus.fi>
Source record: 26108
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair

Pass band 3 dB: +-3.75kHz, Stop band 70 dB: +-8.75 kHz, Insertion
Loss: 4.5 dB, Terminating Impedance: 470 ohm// 25pF

- casab

"Jeff" <jeff_164@hotmail.com> kirjoitti viestissï¿½
news:a9zmc.1275$XI4.63649@news.xtra.co.nz...
> Hi, Im looking for info on a Toyo TQF-2849 (10.7MHz) crystal filter.
> Need to know the bandwidth and termination impedances. Any help
appreciated.
> Toyo in Japan were no help.
> regards,
> JEFF
> ZL3TNV
>
>

3662. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 06:47:34 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <2t9m90h46p0ugsqegind1si800s4tt2a86@4ax.com>
Source record: 26109
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On 6 May 2004 21:13:57 GMT, "Walter Harley"
<walterh@cafewalterNOSPAM.com> wrote:

>> THanks, very interesting. I wonder if anyone's tried paralleling up
>> half a dozen of 'em for more power?

Directly parallelling the semiconductors have several drawbacks. First
of all, the capacitances are in parallel thus limiting the frequency
response. Also load sharing between the semiconductors can be hard to
achieve.

>Modern commercial radio transmitters (including FM band, 88-108MHz) by,
>e.g., Harris use MOSFETs. So clearly it is possible to get up to 25kW. I
>believe they also use them in 100kW AM band transmitters. A bit of
>meandering on Harris' web page will tell you more.

They are complete amplifier modules with well specified output
impedances that are combined. If e.g. Wilkinson dividers/combiners are
used, these have a limited bandwidth, but this is usually not a big
issue in broadcasting, in which the frequency remains the same and if
changes are needed, the relative frequency range is limited.

However, Wilkinson dividers and combiners would not be suitable for
1.8-50 MHz amateur linear amplifier due to the huge relative frequency
range.

Paul OH3LWR

3663. VCO noise - update

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 06:55:14 UTC
From: Alex Collins <me@privacy.net>
Message-ID: <2g0q48F34vb6U1@uni-berlin.de>
Source record: 26100

Thanks to everyone who replied. I've now discovered the reason for the disastrous noise on the Mini-Circuits VCO: Obviously I was using *extremely* good RF PCB design techniques/layout, but these devices need even better than the very best. They are abnormally sensitive - not so much to noise on Vtune (20V tuning devices are less sensitive than the 5V wideband types) - but to earthing - much more than normal - and much more than Mini-Circuits own suggested PCB layout for the device suggests. And despite the fact that the tiny metal can is mostly directly bonded earth pins. It's not feasible how bad the results can be, even on a very good RF board! Apparently, the quoted -75dBc phase noise figure is almost unattainable, except using Mini-Circuits own metal block test jig.

I've spent a week questioning myself and my Analyzer, so I hope this might help others to get acceptable results using this device. Use vias everywhere, solder the can all round, really go over-the-top on everything, in addition to all the normal RF grounding/decoupling practices, and then you might just get barely acceptable results.

Al.

3664. Re: Iambic keyer with MSP430 chip??

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 07:03:55 UTC
From: Sverre Holm <la3za.0junk4me@qsl.net>
Message-ID: <c7fc7dlbh1@maud.ifi.uio.no>
Source record: 26101

> >KD1JV has done that in his new AT Sprint II 4-band miniature rig, see
manual
> >on http://www.qsl.net/kd1jv/ats2.HTM
>
> I don't see any sign of source code. Do you?
> Maybe I'll contact him.

Neither do I, but then you just asked whether it has been done. And, yes it
has been done ;)

--
Sverre
----
www.qsl.net/la3za

3665. Re: Measuring RF output impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 09:30:04 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <1nkm905lhiap72kuftb62ocbqd63qddajf@4ax.com>
Source record: 26102
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Thu, 06 May 2004 23:44:58 GMT, john_c@tpg.com.au (John Crighton)
wrote:

>I should have said helping a fellow beginner and hobbyist. I am
>in the same boat as you, continually struggling. So I know what
>it is like being in the dark and feeling my way. :-)

You could have fooled me. Still I guess everyone continues to learn at
some level or other, no matter how much they know.

>Getting back to your external attenuator idea.
>I often buy dud damaged boat anchor sig gens, for a few dollars
>at ham meetings/trash and treasure buy and sells, in the hope of
>finding a nice attenuator. I have humped a few monsters home
>only to find rubbish inside. I have been lucky a couple of times.
>There are plenty of ready made attenuator units for sale
>usually for big dollars from a hobbyists point of view.
>
>Have a look at this one.
>http://cgi.ebay.co.uk/ws/eBayISAPI.dll?ViewItem&category=40004&item=3812959880&rd=1
>How far is Farnam from you? Postage is 4 quid.
>No information as to the maximum frequency but if you can
>pick it up for a tenner it might be a good buy even if you use
>it for low frequncies for something else. I am sure you spend
>more that that at your local. Take a chance! Bid 10 max. :-)

Amazing! I don't know how you find this stuff, John. It seems like an
excellent buy, but there's just one small problem: the Zout of my AVO
appears to be 75 ohms. I know that's 'getaroundable' but it takes the
shine off it. I'll try changing the pots first, then I'll borrow a VNA
and see what gives.

Regards,

Paul
--

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3666. Re: Another unusual waveshape...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 09:30:06 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <76lm90dfnngl6rrb3ekd3btecf0l2b24tu@4ax.com>
Source record: 26110
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On 6 May 2004 21:11:59 GMT, "Walter Harley"
<walterh@cafewalterNOSPAM.com> wrote:

>"Paul Burridge" <pb@notthisbit.osiris1.co.uk> wrote in message
>news:18nk90t2qebtio77ra242nicich8p95db1@4ax.com...
>> That gives me an idea, Walter... How about I amplify the white noise
>> from a suitably noisy diode and feed it through a Schmidt or something
>> similar? What sort of harmonic richness would that give me?
>
>I'm sorry, but I've not been keeping track of what kind of problem you're
>trying to solve. It sure sounds like you're trying to reinvent some sort of
>wheel here, though.
>
>If you are trying to start with a noise source in order to generate a signal
>at a specific, adjustable frequency, then surely you must consider that the
>way to do that is to filter the noise source; and that the task of making a
>good tuneable filter is no different than the task of making a good tuneable
>oscillator. And starting with broadband noise is not generally a good
>approach to getting something quiet.

I know. This is purely hypothetical. What sort of spectral range would
one get from this idea?
--

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3667. Re: Another unusual waveshape...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 09:30:07 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <09lm90hrs8tm6s226tb2cbl5pa77ej782o@4ax.com>
Source record: 26111
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Fri, 07 May 2004 00:27:43 -0300, YD <yd.techHAT@techie.com> wrote:

>What's the circuit supposed to do? What's the frequency? What is it
>made of? What's on the inputs?
>
>You probably screwed up as usual and need your betters to bail you
>out.

Damn! Forgot to tick the 'global' option in the Usenet filters list...

<Plonk!>
(again)
--

The BBC: licenced at public expense to spread lies.

3668. Dayton items:Scott,Westinghouse++

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 13:01:19 UTC
From: Heytubeguy <heytubeguy@worldnet.att.net>
Message-ID: <zMLmc.51524$Xj6.869982@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26103

Will have several pieces of 'heavy metal' items-ie xfmrs, chokes... , as well as Westinghouse RA/DA, Scott all Wave 15 + ext amp.+12" spkr+ cabinet. Drop by spaces 3128-3129. Might consider trade for SX-42 working +$ on either. A few tubes too, heytubeguy.

3669. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 13:32:21 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.0000002d.001f9299@btinternet.com>
Source record: 26097
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

Swiss Army Knife ?

3670. Re: VCO noise - update

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 13:32:36 UTC
From: TOM <noname@noprovider.nodomain>
Message-ID: <UdMmc.94121$G_.41677@nwrddc02.gnilink.net>
Source record: 26104

The problem is the tuning voltage, and how sensitive it is. This applies to all wide-range VCO's.
I can't find the original message, but here's an example...

Assume VCO tunes 1GHz to 2 GHZ with 20 volts of tuning voltage. While the tuning voltage
is not linear, simply to linear assumption. Then the sensitivity of the tuning line is 1 GHz / 20 volts,
this is the same as 1 KHz / 20 microvolts. It's really hard to get noise levels that low! Practically,
the entire VCO as well as the circuit that drives the tuning line and all the componenets therein
have to be inside a well shielded enclosure. Further, extraordinary care has to be taken in grounding.
This means figuring out all the noise sources, ground return paths, etc. You cannot just hook everything
to a groundplane, that's nowhere near good enough. It's necessary to group 'vias' to the ground plane
based on which return currents they share, and then wire each ground connection or group of
connections to the exact specific via needed. One cm of groundplane can have millivolts of potential
difference across it.

-- Tom

"Alex Collins" <me@privacy.net> wrote in message
news:2g0q48F34vb6U1@uni-berlin.de...
> Thanks to everyone who replied. I've now discovered the reason for the
> disastrous noise on the Mini-Circuits VCO: Obviously I was using
extremely
> good RF PCB design techniques/layout, but these devices need even better
> than the very best. They are abnormally sensitive - not so much to noise
on
> Vtune (20V tuning devices are less sensitive than the 5V wideband types) -
> but to earthing - much more than normal - and much more than Mini-Circuits
> own suggested PCB layout for the device suggests. And despite the fact
that
> the tiny metal can is mostly directly bonded earth pins. It's not feasible
> how bad the results can be, even on a very good RF board! Apparently, the
> quoted -75dBc phase noise figure is almost unattainable, except using
> Mini-Circuits own metal block test jig.
>
> I've spent a week questioning myself and my Analyzer, so I hope this might
> help others to get acceptable results using this device. Use vias

> everywhere, solder the can all round, really go over-the-top on
everything,
> in addition to all the normal RF grounding/decoupling practices, and then
> you might just get barely acceptable results.
>
> Al.
> ---
>
>
>

3671. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 14:01:14 UTC
From: Alex Rodriguez <adr5@columbia.edu>
Message-ID: <c7g4rb$9tn$6@newsmaster.cc.columbia.edu>
Source record: 26098
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

In article <1e3670a7.0405061303.3f608231@posting.google.com>,
alanh_27@yahoo.com says...
>
>
>ET onboard a ship. Have decided after time to have own tools. Got
>them packed into one of those larger wheel-around, pull-the-handle-out
>check-in hard-shell Samsonites. Ends up being a bit heavy, cause of
>tool junkie genetic coding.
>
>Works great..... except when have to go up or down ladderwells
>("stairs", to you land pukes)
>
>Better approach?

Two cases and make two trips.

Alex

3672. Re: Wanted: Manual for WaveTek 3000-200 Signal Generator + Deviation Meter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 15:32:40 UTC
From: Larry Gagnon <lagagnon@fakeuniserve.com>
Message-ID: <9van9051ulmch0aqrm0l1hcd37qkfiems0@4ax.com>
Source record: 26105
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.equipment,sci.electronics.misc,sci.electronics.repair

On Thu, 06 May 2004 05:24:08 GMT, "James McMann" <jmcmann@pacbell.net>
wrote:

>I am having great trouble locating the operations and service manual for the
>Wavetek 3000-200 Signal Generator with Option 200 Deviation Meter. If you
>have one I would like to buy it or a copy, digital or photocopy.
>
>Reply to jmcmann{+A+T+}pacbell.net. You can figure out that you need to
>remove the stuff between and including the { } and insert the @ sign. Sorry
>for the trouble but you know how the spam is these days...
>
>Thanks,
>
>Jim McMann KF6WOR
>San Jose, CA.
>

Jim: you can rent a manual from WJ Ford enterprises, copy it and
return it. They have the Wavetek 3000 manual.

http://www.testequipmentcanada.com/manuals.html

Larry Gagnon VE7EA
****
remove "fake" from email address

3673. Re: VCO noise - update

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 16:16:09 UTC
From: John Miles <jmiles@pop.removethistomailme.net>
Message-ID: <MPG.1b0556253433e6f29896b3@news-central.giganews.com>
Source record: 26106

In article <2g0q48F34vb6U1@uni-berlin.de>, me@privacy.net says...
> Thanks to everyone who replied. I've now discovered the reason for the
> disastrous noise on the Mini-Circuits VCO: Obviously I was using *extremely*
> good RF PCB design techniques/layout, but these devices need even better
> than the very best. They are abnormally sensitive - not so much to noise on
> Vtune (20V tuning devices are less sensitive than the 5V wideband types) -
> but to earthing - much more than normal - and much more than Mini-Circuits
> own suggested PCB layout for the device suggests. And despite the fact that
> the tiny metal can is mostly directly bonded earth pins. It's not feasible
> how bad the results can be, even on a very good RF board! Apparently, the
> quoted -75dBc phase noise figure is almost unattainable, except using
> Mini-Circuits own metal block test jig.

Did you read my post about phase-locking it at a low loop bandwidth
before trying to measure PN?

> I've spent a week questioning myself and my Analyzer, so I hope this might
> help others to get acceptable results using this device. Use vias
> everywhere, solder the can all round, really go over-the-top on everything,
> in addition to all the normal RF grounding/decoupling practices, and then
> you might just get barely acceptable results.

I don't think measuring -75 dBc/Hz at 1 kHz requires superhuman effort.
It does require an understanding of the measurement process and the
nature of the device being characterized, though.

-- jm

---
http://www.qsl.net/ke5fx
Note: My E-mail address has been altered to avoid spam

3674. FYI: Linear Amplifier Projects

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 16:56:54 UTC
From: deje a lector guardarse <dlg@pero.net>
Message-ID: <qdPmc.16816$k24.13594@fed1read01>
Source record: 26107

At URL:
http://ac6v.com/homebrew.htm#AMP

--
el lector se guarda

Amateur Radio is the best back-up
communications system in the world,
and that's the way it is. Walter Cronkite

3675. Re: Another unusual waveshape...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 17:11:36 UTC
From: Walter Harley <walterh@cafewalterNOSPAM.com>
Message-ID: <c7gg08$v89$0@216.39.172.65>
Source record: 26112
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"Paul Burridge" <pb@notthisbit.osiris1.co.uk> wrote in message
news:76lm90dfnngl6rrb3ekd3btecf0l2b24tu@4ax.com...
> On 6 May 2004 21:11:59 GMT, "Walter Harley"
> <walterh@cafewalterNOSPAM.com> wrote:
>
> >"Paul Burridge" <pb@notthisbit.osiris1.co.uk> wrote in message
> >news:18nk90t2qebtio77ra242nicich8p95db1@4ax.com...
> >> That gives me an idea, Walter... How about I amplify the white noise
> >> from a suitably noisy diode and feed it through a Schmidt or something
> >> similar? What sort of harmonic richness would that give me?
> [...]
>
> I know. This is purely hypothetical. What sort of spectral range would
> one get from this idea?

Presumably that depends on how "suitably noisy" your diode is, and how fast
your Schmitt trigger is.

Here's a project for you: how can you describe the behavior of a
(real-world) Schmitt trigger in the frequency domain, that is, in terms of
how it affects a signal's frequency spectrum?

3676. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 19:04:26 UTC
From: Ernest Christley <echristley@nc.rr.com>
Message-ID: <_4Rmc.18189$jU.1164350@twister.southeast.rr.com>
Source record: 26099
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

Alex Rodriguez wrote:
> In article <1e3670a7.0405061303.3f608231@posting.google.com>,
> alanh_27@yahoo.com says...
>
>>
>>ET onboard a ship. Have decided after time to have own tools. Got
>>them packed into one of those larger wheel-around, pull-the-handle-out
>>check-in hard-shell Samsonites. Ends up being a bit heavy, cause of
>>tool junkie genetic coding.
>>
>>Works great..... except when have to go up or down ladderwells
>>("stairs", to you land pukes)
>>
>>Better approach?
>
>
> Two cases and make two trips.
> ---------
> Alex
>

COME-ON, guys! He came to rec.AVIATION.HOMEBUILT asking this question.
What he wants to know is:

A) whether to use a laminar or turbulent airfoil, and what's the proper
wing loading for a toolbox?
B) would a certified or auto-conversion engine be more appropriate?
C) composite, aluminum, or tube and rag?
E) electric or manual trim?
F) circuit breakers or fuses?

Now. Could somebody help the guy out, please!

8*)

--
http://www.ernest.isa-geek.org/
"Ignorance is mankinds normal state,
alleviated by information and experience."
Veeduber

3677. Re: Radio control transmitter - interference problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 20:22:13 UTC
From: pvenkman@hotmail.com
Message-ID: <791aa995.0405071222.56f69081@posting.google.com>
Source record: 26114

"Paul_Morphy" <nopaul_morphy2@coolgoose.com> wrote in message
news:<q9wmc.26039$Ut1.757447@bgtnsc05-news.ops.worldnet.att.net>...
> "P. Venkman" <pvenkman@hotmail.com> wrote in message
> news:791aa995.0405061032.25721a06@posting.google.com...
>
> > I'm still interested in findind a way to deal with this aside from
> > just not using the synth module at that site. Now that I've more or
> > less isolated the problem, is there anything I can try? I did make an
> > attempt at sheilding just the RF module with no luck, but are there
> > other options?
>
> As long as it's at the transmitter, you could try a bandpass filter. Chances
> are the interference is coming from outside the RC band. There are programs
> available for free that will give you the numbers you need. I use one called
> AADE Filter Design from AADE.com . Ask if you need info on making the
> inductors etc.
>
> "PM"

That's very useful, thanks! I downloaded the program and think I
understand it well enough to plug in the numbers. I do have one big
question though. How do I measure the impedance? I've got a basic
VOM but that's it as far as test equipment, and my knowledge of things
electronic is pretty basic.

3678. Re: Another unusual waveshape...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 20:24:06 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <jmrn90t7auh7l050ulhbgra0ob5vofnf1v@4ax.com>
Source record: 26138
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On 7 May 2004 17:11:36 GMT, "Walter Harley"
<walterh@cafewalterNOSPAM.com> wrote:

>"Paul Burridge" <pb@notthisbit.osiris1.co.uk> wrote in message
>news:76lm90dfnngl6rrb3ekd3btecf0l2b24tu@4ax.com...
>> On 6 May 2004 21:11:59 GMT, "Walter Harley"
>> <walterh@cafewalterNOSPAM.com> wrote:
>>
>> >"Paul Burridge" <pb@notthisbit.osiris1.co.uk> wrote in message
>> >news:18nk90t2qebtio77ra242nicich8p95db1@4ax.com...
>> >> That gives me an idea, Walter... How about I amplify the white noise
>> >> from a suitably noisy diode and feed it through a Schmidt or something
>> >> similar? What sort of harmonic richness would that give me?
>> [...]
>>
>> I know. This is purely hypothetical. What sort of spectral range would
>> one get from this idea?
>
>
>Presumably that depends on how "suitably noisy" your diode is, and how fast
>your Schmitt trigger is.
>
>Here's a project for you: how can you describe the behavior of a
>(real-world) Schmitt trigger in the frequency domain, that is, in terms of
>how it affects a signal's frequency spectrum?

To put it technically, "they generate loads of harmonics" - a perfect
one presumably an infinite comb of harmonics? Am I near the mark?
--

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3679. Re: VCO noise - update

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 21:18:17 UTC
From: maxfoo <maxfooHeadFromButt@punkass.com>
Message-ID: <psun9050a58ssdokhipd6j09u73n3j98do@4ax.com>
Source record: 26115

On Fri, 7 May 2004 07:55:14 +0100, "Alex Collins" <me@privacy.net> wrote:

>Thanks to everyone who replied. I've now discovered the reason for the
>disastrous noise on the Mini-Circuits VCO: Obviously I was using *extremely*
>good RF PCB design techniques/layout, but these devices need even better
>than the very best. They are abnormally sensitive - not so much to noise on
>Vtune (20V tuning devices are less sensitive than the 5V wideband types) -
>but to earthing - much more than normal - and much more than Mini-Circuits
>own suggested PCB layout for the device suggests. And despite the fact that
>the tiny metal can is mostly directly bonded earth pins. It's not feasible
>how bad the results can be, even on a very good RF board! Apparently, the
>quoted -75dBc phase noise figure is almost unattainable, except using
>Mini-Circuits own metal block test jig.
>
>I've spent a week questioning myself and my Analyzer, so I hope this might
>help others to get acceptable results using this device. Use vias
>everywhere, solder the can all round, really go over-the-top on everything,
>in addition to all the normal RF grounding/decoupling practices, and then
>you might just get barely acceptable results.
>
>Al.
>---
>
>

Could be the analyzer is noisey...

Try measuring additive phase noise with two VCOs at the same time using a phase shifter to calculate the detector constant. subtract 3dB from your measurement.

Remove "HeadFromButt", before replying by email.

3680. surface mount transistor identification..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 21:44:48 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1083966287.773833@smtp-1.griffin.com>
Source record: 26116

hello..

is it possible to id sm transistors by their markings?
ie might be marked up 27f2 or f2a etc..
if so does anyone know where i might find the"codes"..

simon g0zen

3681. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 21:52:55 UTC
From: eatitcold <not@here.net>
Message-ID: <o21o90dmgmlnu3qgug7jc66opc4qtqkge2@4ax.com>
Source record: 26139
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Wed, 05 May 2004 11:39:56 +0100, Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote:

>Hi all,
>
>I was thinking about having a go at contriving (I won't say
>"designing" for obvious reasons) a class 'C' RF amp using MOSFETs
>instead of the usual BJTs/toobz. They seem - on the face of it at
>least - ideally suited to the task. I'm just a bit concerned about
>whether even the fastest ones would be fast enough, even given
>adequate gate drive. I'd be surprised if they weren't good for at
>least a few Mhz., but am quite frankly clueless as to MUF. Anyone
>know?
>
mosfet amp stuff;
http://www.qsl.net/ab4oj/icom/ic7800/7800txdev.html
http://www.icomamerica.com/amateur/amps/default.asp

3682. Re: VCO noise - update

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 22:02:42 UTC
From: eatitcold <not@here.net>
Message-ID: <ng1o90tbq0h005sgnob79414vcp5u20cn2@4ax.com>
Source record: 26117

On Fri, 7 May 2004 07:55:14 +0100, "Alex Collins" <me@privacy.net>
wrote:

>Thanks to everyone who replied. I've now discovered the reason for the
>disastrous noise on the Mini-Circuits VCO: Obviously I was using *extremely*
>good RF PCB design techniques/layout, but these devices need even better
>than the very best. They are abnormally sensitive - not so much to noise on
>Vtune (20V tuning devices are less sensitive than the 5V wideband types) -
>but to earthing - much more than normal - and much more than Mini-Circuits
>own suggested PCB layout for the device suggests. And despite the fact that
>the tiny metal can is mostly directly bonded earth pins. It's not feasible
>how bad the results can be, even on a very good RF board! Apparently, the
>quoted -75dBc phase noise figure is almost unattainable, except using
>Mini-Circuits own metal block test jig.
>
A place I worked at years ago had nightmare probs with VCO phase
noise.
It depended on which freqs we were using though (Z-Comm), some were
ok, others..yeesh!
Always had to have them in a can with soldered tops & undersides,
shielding everywhere, & filters , filters, filters :-)

3683. crystal ladder filters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 22:37:55 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <e7Umc.88295$Uz1.54234@bignews3.bellsouth.net>
Source record: 26118

Just got the lot of 400+ crystals I won on ebay.
Turns out they are NOT HC49/u rocks, but HC6/U!
Isn't it ture that the larger crystals are better
for use in filters than the smaller one's (higher
Q, less loss, etc?)

Looks like some fun ahead experimenting with
this and maybe a homebrew spectrum analyzer in the
works to scan around 8.3866mhz (in my test oscillator
I'm getting 8.389855mhz, better let the oscillator and
the frequency counter warm up for a while).

Time to smash some surplus 9pin tube sockets up for
crystal socket pins ....

3684. Re: crystal ladder filters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 23:18:53 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <xPUmc.47670$0H1.4479181@attbi_s54>
Source record: 26119

"Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:e7Umc.88295$Uz1.54234@bignews3.bellsouth.net...
> Just got the lot of 400+ crystals I won on ebay.
> Turns out they are NOT HC49/u rocks, but HC6/U!
> Isn't it ture that the larger crystals are better
> for use in filters than the smaller one's (higher
> Q, less loss, etc?)

While Q comes with cubic feet (of space around inductors and capacitors) it isn't the only factor when it comes to crystals. There, it's mostly surface finish, cut and the amount of plateback used to place them on frequency. You can have Q of several hundred K in the small HC-49, and less than 50K in the larger holders. (Crystal itself may be larger or smaller, doesn't HAVE to go with the can).

Have to measure a representative sample to determine the average, I haven't seen a crystal made in recent years with really high Q. Quality control folks have learned how to take all the quality out and make them cheaper.

After WW2, some manufacturers bought up all the FT-243 crystals they could find. Chopped the wafers into tiny pieces and made really good crystals for many years.

W4ZCB
>

3685. Re: Radio control transmitter - interference problem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 23:45:54 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <ScVmc.30316$Ut1.867618@bgtnsc05-news.ops.worldnet.att.net>
Source record: 26120

"P. Venkman" <pvenkman@hotmail.com> wrote in message
news:791aa995.0405071222.56f69081@posting.google.com...

> That's very useful, thanks! I downloaded the program and think I
> understand it well enough to plug in the numbers. I do have one big
> question though. How do I measure the impedance? I've got a basic
> VOM but that's it as far as test equipment, and my knowledge of things
> electronic is pretty basic.

Oh, yeah, I didn't consider that your antenna is not 50-ohms. How long is the antenna, and what frequency band are you using? 72 MHz? When it comes to calculating what your antenna looks like impedance-wise, there are others here more knowledgeable than me and I hope they jump in! I wonder how well shielded the transmitter is, also. If not well shielded the interference could just get in directly and the BP filter wouldn't help. There are devices that allow you to measure an antenna's impedance, but they cost about what your transmitter cost.

"PM"

3686. Re: crystal ladder filters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-07 23:45:55 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <TcVmc.30317$Ut1.868157@bgtnsc05-news.ops.worldnet.att.net>
Source record: 26121

"Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:e7Umc.88295$Uz1.54234@bignews3.bellsouth.net...

> Looks like some fun ahead experimenting with
> this and maybe a homebrew spectrum analyzer in the
> works to scan around 8.3866mhz (in my test oscillator
> I'm getting 8.389855mhz, better let the oscillator and
> the frequency counter warm up for a while).

Maybe they're designed for a circuit with parallel C, not series type..

You're probably intending to make a sweep generator and view the bandpass on
a scope, right? This site has a suitable sweep generator
http://www.intio.or.jp/jf10zl/

> Time to smash some surplus 9pin tube sockets up for
> crystal socket pins ....

But you're going to solder the xtals directly to boards for the actual
filters, right? You could make a board pretty easily, all the xtals having
the same pin separation. Lotta drilling.

Inspired by you I bought a bunch of HC-49s on eBay. They will plug into a
DIP socket, which is what I'm using in my measurement jig. Buffered
oscillator running off 9 V, no pulling when I hook up the counter.
http://tinyurl.com/3dpdn

73,

"PM"

3687. Re: VCO noise - update

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-08 00:41:43 UTC
From: maxfoo <maxfooHeadFromButt@punkass.com>
Message-ID: <82bo90di55s4lrtiu1v1ngleh3ak5jec4b@4ax.com>
Source record: 26122

On Fri, 07 May 2004 22:02:42 GMT, eatitcold <not@here.net> wrote:

>On Fri, 7 May 2004 07:55:14 +0100, "Alex Collins" <me@privacy.net>
>wrote:
>
>>Thanks to everyone who replied. I've now discovered the reason for the
>>disastrous noise on the Mini-Circuits VCO: Obviously I was using *extremely*
>>good RF PCB design techniques/layout, but these devices need even better
>>than the very best. They are abnormally sensitive - not so much to noise on
>>Vtune (20V tuning devices are less sensitive than the 5V wideband types) -
>>but to earthing - much more than normal - and much more than Mini-Circuits
>>own suggested PCB layout for the device suggests. And despite the fact that
>>the tiny metal can is mostly directly bonded earth pins. It's not feasible
>>how bad the results can be, even on a very good RF board! Apparently, the
>>quoted -75dBc phase noise figure is almost unattainable, except using
>>Mini-Circuits own metal block test jig.
>>
>A place I worked at years ago had nightmare probs with VCO phase
>noise.
>It depended on which freqs we were using though (Z-Comm), some were
>ok, others..yeesh!
>Always had to have them in a can with soldered tops & undersides,
>shielding everywhere, & filters , filters, filters :-)

newbies...

Improving VCO Phase Noise Performance Through Enhanced Characterization

http://www.highfrequencyelectronics.com/Archives/Jan04/HFE0104_Vye.pdf

Remove "HeadFromButt", before replying by email.

3688. Re: VCO noise - update

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-08 02:12:11 UTC
From: bovine <not@here.net>
Message-ID: <acgo90p881k2upgi50epd8gid9u2ognm2p@4ax.com>
Source record: 26123

On Sat, 08 May 2004 00:41:43 GMT, maxfoo
<maxfooHeadFromButt@punkass.com> wrote:

>newbies...
>
Theory is always perfect,... try real world in a production
environment.
Seen many a fresh engineer trying to find the difference between
their ass & a hole in the ground.
{ie: could you show me how to use this network analyser?}

3689. Re: crystal ladder filters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-08 02:36:36 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c7hh3kbma1@freenet9.carleton.ca>
Source record: 26124

Ken Scharf (wa2mzeNOTTHIS@bellsouth.net) writes:
> Just got the lot of 400+ crystals I won on ebay.
> Turns out they are NOT HC49/u rocks, but HC6/U!
> Isn't it ture that the larger crystals are better
> for use in filters than the smaller one's (higher
> Q, less loss, etc?)
>
I have no idea. But remember other factors come into play.
Traditionally, only a handful of crystals were comodity items.
You could buy surplus, or you could get crystals for a handful
of frequencies that were premade, but generally you had to have them
specifically made for the application. I imagine (but don't know)
that such crystals tended to be better quality than a commodity crystal
from today. If nothing else, you were paying more for them.

And HC-6 holders tend to suggest something older, and hence maybe
dating from a day when more effort was put into making the crystals.
But that impression is not about the size of the holder, but about
the era of the crystal.

Of course, I've come across mass produced HC6 crystals so even then
it may be no indicator at all.

Michael VE2BVW

> Looks like some fun ahead experimenting with
> this and maybe a homebrew spectrum analyzer in the
> works to scan around 8.3866mhz (in my test oscillator
> I'm getting 8.389855mhz, better let the oscillator and
> the frequency counter warm up for a while).
>
> Time to smash some surplus 9pin tube sockets up for
> crystal socket pins ....

3690. Spice Toroid Model

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-08 04:06:55 UTC
From: greg-brenda-nelson@cox.net
Message-ID: <fd1add4f.0405072006.406174e6@posting.google.com>
Source record: 26125

#1.) I recently built a basic Hartley VCO and made measurments on it
with a scope.

#2.) I thought that I would make a model of it with Micro-Cap and see
how well the simulation matched the real thing.

#3.) I used 2 inductors to model the torroid(probably a mistake).
When I simulated the VCO it worked. However voltage measurments of
the top part of the inductor and the lower part(tap) were in phase.
This did not match my scope measurements of the real thing.

#4.) Is there a model available in Micro-Cap for a toroid?

#5.) I also have access to Micro-Sim Pspice. Is this a better
package? Is there a model for this package?

Thanks!

Greg

3691. Re: surface mount transistor identification..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-08 08:21:25 UTC
From: Tull <finnostervig@hotmail.com>
Message-ID: <409c9815$0$185$edfadb0f@dread11.news.tele.dk>
Source record: 26127

"zindazenda" <zen@lineisp.co.uk> skrev i en meddelelse
news:1083966287.773833@smtp-1.griffin.com...
> hello..
>
> is it possible to id sm transistors by their markings?
> ie might be marked up 27f2 or f2a etc..
> if so does anyone know where i might find the"codes"..
>
> simon g0zen
>

Try this link : http://www.tkb-4u.com/code/smdcode/indexsmdcode.php

73 OZ2FOE

3692. Re: Spice Toroid Model

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-08 15:57:58 UTC
From: k7itm@aol.com
Message-ID: <3200347.0405080757.2fa4b4e6@posting.google.com>
Source record: 26128

So long as you are not driving the toroid to the point of
nonlinearity, a model with two standard inductors in series should
work fine for a tapped toroid winding. If the mu of the core material
is high, the coefficient of coupling between the coils will be quite
high; it will be somewhat less if the core mu is low (like one of the
high-frequency powdered iron mixes). The one time when I got really
serious about using a toroid-core transformer model in Spice, a linear
one worked just fine, but I did take the time to characterize the
physical transformer's parasitic capacitance, leakage inductance and
effective resistance. In fact, I was amazed at how accurately the
Spice output matched the overall circuit performance in that case.
(3.5MHz switching power supply, using a LAN transformer -- the ringing
and damping of that ringing of the parasitics up near 100MHz matched
what I measured in the circuit almost exactly.)

Cheers,
Tom

greg-brenda-nelson@cox.net (Greg Nelson) wrote in message
news:<fd1add4f.0405072006.406174e6@posting.google.com>...
> #1.) I recently built a basic Hartley VCO and made measurments on it
> with a scope.
>
> #2.) I thought that I would make a model of it with Micro-Cap and see
> how well the simulation matched the real thing.
>
> #3.) I used 2 inductors to model the torroid(probably a mistake).
> When I simulated the VCO it worked. However voltage measurments of
> the top part of the inductor and the lower part(tap) were in phase.
> This did not match my scope measurements of the real thing.
>
> #4.) Is there a model available in Micro-Cap for a toroid?
>
> #5.) I also have access to Micro-Sim Pspice. Is this a better
> package? Is there a model for this package?
>
>
>
> Thanks!
>
> Greg

3693. Wanted Info Antennas by Smithe 15m Broomstick

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-08 16:13:37 UTC
From: Randy and Cara Randall <crrandal@earthlink.net>
Message-ID: <RG7nc.9377$8S1.1495@newsread2.news.atl.earthlink.net>
Source record: 26113
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.swap

Hello. Anyone have any info or a copy of the instructions on a 15 meter broomstick antenna made by "Antennas by Smithe"? It is a model # 9BR15 approx 5' tall. Thanks, Randy AB9GO. crrandal@earthlink.net

3694. Re: crystal ladder filters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-08 17:34:53 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <YM8nc.89134$Uz1.39663@bignews3.bellsouth.net>
Source record: 26129

Paul_Morphy wrote:
> "Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
> news:e7Umc.88295$Uz1.54234@bignews3.bellsouth.net...
>
>
>>Looks like some fun ahead experimenting with
>>this and maybe a homebrew spectrum analyzer in the
>>works to scan around 8.3866mhz (in my test oscillator
>>I'm getting 8.389855mhz, better let the oscillator and
>>the frequency counter warm up for a while).
>
>
> Maybe they're designed for a circuit with parallel C, not series type..
>
> You're probably intending to make a sweep generator and view the bandpass on
> a scope, right? This site has a suitable sweep generator
> http://www.intio.or.jp/jf10zl/
>
>
>>Time to smash some surplus 9pin tube sockets up for
>>crystal socket pins ....
>
>
> But you're going to solder the xtals directly to boards for the actual
> filters, right? You could make a board pretty easily, all the xtals having
> the same pin separation. Lotta drilling.
>
> Inspired by you I bought a bunch of HC-49s on eBay. They will plug into a
> DIP socket, which is what I'm using in my measurement jig. Buffered
> oscillator running off 9 V, no pulling when I hook up the counter.
> http://tinyurl.com/3dpdn
>
> 73,
>
> "PM"
>
>
Yes I built a similar oscillator, a bit cruder though
I clipped my scope probe to the output and connected the
probe to the counter. I noticed that the frequency drifts somewhat
when the crystal is first plugged into the test oscillator. I
guess I need to let the frequency counter warm up for about a
half hour before taking any measurements, the oscillator may
also need a warmup period, and perhaps even the crystal.

If you handle the crystal while inserting it into the socket
the heat from your hands probably affects the crystal, though
I noticed that if I continue to hold the crystal with
two fingers things stablize more quickly (is my hand acting
as a crystal oven?) Total drift is under 250hz.

3695. Re: crystal ladder filters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-08 18:12:59 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <Lq9nc.53142$kh4.3067690@attbi_s52>
Source record: 26130

> Yes I built a similar oscillator, a bit cruder though
> I clipped my scope probe to the output and connected the
> probe to the counter. I noticed that the frequency drifts somewhat
> when the crystal is first plugged into the test oscillator.

Highly recommended reading;

"High-Performance crystal filter design" by Bill Carver, Communications Quarterly, Winter 1993.

Addresses the same problem and lots more, and unless you plan on permanently attaching your fingers to your filter, you'd better pay attention.

W4ZCB

3696. Capacitor Series question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-08 18:22:45 UTC
From: Clinton <news2004@_nospam_telus.net>
Message-ID: <Vz9nc.31559$U75.19304@edtnps89>
Source record: 26131

I was just looking through the Digikey catalog for a 200Vdc, 220uf, radial lead capacitor. No problem I thought, until I got looking.. Can anyone tell me, or point me to a web site, that explains all the different series of capacitors?
They vary in price from around $2 up to $8.
Thans

Remove _nospam_ to reply via email.
VE7KNL

3697. Re: crystal ladder filters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-08 18:40:54 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <WQ9nc.33140$Ut1.950465@bgtnsc05-news.ops.worldnet.att.net>
Source record: 26132

"Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:YM8nc.89134$Uz1.39663@bignews3.bellsouth.net...
> Yes I built a similar oscillator, a bit cruder though
> I clipped my scope probe to the output and connected the
> probe to the counter. I noticed that the frequency drifts somewhat
> when the crystal is first plugged into the test oscillator. I
> guess I need to let the frequency counter warm up for about a
> half hour before taking any measurements, the oscillator may
> also need a warmup period, and perhaps even the crystal.
> If you handle the crystal while inserting it into the socket
> the heat from your hands probably affects the crystal, though
> I noticed that if I continue to hold the crystal with
> two fingers things stablize more quickly (is my hand acting
> as a crystal oven?) Total drift is under 250hz.

I used an untuned buffer. Listening on a receiver when I connect the
counter, I hear no pulling. Sounds like your counter needs an oven! Based on
what you're saying about hand temperature moving the frequency, I am
expecting to see an article on passband tuning using a lightbulb driven by a
variable regulator, mounted next to the filter and BFO xtal. "Passband
Tuning Via Thermally Induced Piezoelectric Deformation."

73,

"PM"

3698. Re: crystal ladder filters

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-08 19:30:19 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c7jcgb$3r2$1@freenet9.carleton.ca>
Source record: 26133

"Paul_Morphy" (nopaul_morphy2@coolgoose.com) writes:
> "Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
> news:YM8nc.89134$Uz1.39663@bignews3.bellsouth.net...
>> Yes I built a similar oscillator, a bit cruder though
>> I clipped my scope probe to the output and connected the
>> probe to the counter. I noticed that the frequency drifts somewhat
>> when the crystal is first plugged into the test oscillator. I
>> guess I need to let the frequency counter warm up for about a
>> half hour before taking any measurements, the oscillator may
>> also need a warmup period, and perhaps even the crystal.
>> If you handle the crystal while inserting it into the socket
>> the heat from your hands probably affects the crystal, though
>> I noticed that if I continue to hold the crystal with
>> two fingers things stablize more quickly (is my hand acting
>> as a crystal oven?) Total drift is under 250hz.
>
> I used an untuned buffer. Listening on a receiver when I connect the
> counter, I hear no pulling. Sounds like your counter needs an oven! Based on
> what you're saying about hand temperature moving the frequency, I am
> expecting to see an article on passband tuning using a lightbulb driven by a
> variable regulator, mounted next to the filter and BFO xtal. "Passband
> Tuning Via Thermally Induced Piezoelectric Deformation."
>
> 73,
>
> "PM"
>
>
But is it temperature, or finger capacitance.

Look at any circuit board, and the crystals will have the case grounded.
Look in any old two-way radio, and there is a grounding clip at the crystal
socket. Now, maybe this is for temperature stability (connected a larger
mass to the case stabilizes it) but I think it's due to the case coming
into play.

Michael VE2BVW

3699. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-08 20:44:09 UTC
From: alanh_27@yahoo.com
Message-ID: <1e3670a7.0405081244.40690834@posting.google.com>
Source record: 26140
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

> havent figured out that you only need a small box for 90% of jobs,

You _can_ do 90% of what is to be done with what I carry on my
belt.

With my little toolbag, you can do 99%.

But just because one can skin and tan a deer with teeth alone, doesn't
mean one _enjoys_ doing it that way......

3700. Re: Capacitor Series question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-08 21:55:17 UTC
From: Brian <brianCUT@iquestHERE.net>
Message-ID: <9Hcnc.12637$V97.8600@newsread1.news.pas.earthlink.net>
Source record: 26134

Here is a great tutorial site:

http://www.ffldusoe.edu/Faculty/Denenberg/Topics/Electronics/Alex_Pounds/

Also try:

http://www.oldradioz.com/id46.htm

And last but not least:

http://home.woh.rr.com/n8ie/tbook.htm

"Clinton" <news2004@_nospam_telus.net> wrote in message
news:Vz9nc.31559$U75.19304@edtnps89...
> I was just looking through the Digikey catalog for a 200Vdc, 220uf, radial
> lead capacitor. No problem I thought, until I got looking.. Can anyone
> tell me, or point me to a web site, that explains all the different series
> of capacitors?
> They vary in price from around $2 up to $8.
> Thans
> ---
> Remove _nospam_ to reply via email.
> VE7KNL
>
>
>

3701. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-08 22:53:18 UTC
From: jgboyles@aol.com
Message-ID: <20040508185318.22456.00000150@mb-m29.aol.com>
Source record: 26135

>And the reserve price hasn't been met! Silly hams.

Whatever floats your boat. I have seen many give thousands for a restored car that cost very little new. Different people have different interests, doesn't necessarily mean they are silly.
I bought an AC-1 in 1962 for about $19. I built it and when I finally got it working, I had the tubes in the wrong sockets, I had the most fun I have had in 40 years of ham radio.
Would I give $300 for a restored AC-1, no, nor would I give $25,000 for a restored '66 Mustang. There are many that would. Are coin, stamp, or fill in the blank collectors silly?
73 Gary N4AST

3702. Re: Capacitor Series question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-08 23:07:36 UTC
From: k7itm@aol.com
Message-ID: <3200347.0405081507.709858e2@posting.google.com>
Source record: 26136

The DigiKey catalog itself has info about the salient features of the
various series. Perhaps you want to know specifically what to look
for, what matters. Key variables are the ability to handle ripple
current and maximum operating temperature. Also, some are rated for
high-frequency use...best to not use a low-frequency one in a critical
point in a switching power supply, where it would have a high ripple
current at the switching frequency.

You can also go to the manufacturers' web sites and find info on the
various series, and occasionally even find application notes.

Cheers,
Tom

"Clinton" <news2004@_nospam_telus.net> wrote in message
news:<Vz9nc.31559$U75.19304@edtnps89>...
> I was just looking through the Digikey catalog for a 200Vdc, 220uf, radial
> lead capacitor. No problem I thought, until I got looking.. Can anyone
> tell me, or point me to a web site, that explains all the different series
> of capacitors?
> They vary in price from around $2 up to $8.
> Thans
> ---
> Remove _nospam_ to reply via email.
> VE7KNL

3703. Re: Ameco AC-1 revived

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-09 00:00:30 UTC
From: RadioGuy <nospam@nospam.com>
Message-ID: <ywenc.33951$Ut1.974644@bgtnsc05-news.ops.worldnet.att.net>
Source record: 26137

Final eBay bid on AC-1; $238.49 and reserve not met!

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4675&item=3094489496&
rd=1

JGBOYLES <jgboyles@aol.com> wrote in message
news:20040508185318.22456.00000150@mb-m29.aol.com...
> >And the reserve price hasn't been met! Silly hams.
>
> Whatever floats your boat. I have seen many give thousands for a
restored car
> that cost very little new. Different people have different interests,
doesn't
> necessarily mean they are silly.
> I bought an AC-1 in 1962 for about $19. I built it and when I finally
got it
> working, I had the tubes in the wrong sockets, I had the most fun I have
had in
> 40 years of ham radio.
> Would I give $300 for a restored AC-1, no, nor would I give $25,000 for
a
> restored '66 Mustang. There are many that would. Are coin, stamp, or
fill in
> the blank collectors silly?
> 73 Gary N4AST

3704. Thanks! Re: FYI: Linear Amplifier Projects

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-09 01:29:02 UTC
From: rmonagha@engr.smu.edu
Message-ID: <c7k1gu$f4k$1@blaze.seas.smu.edu>
Source record: 26092

Thanks very much for providing this resource and links! I'm going to go
thru these and keep learning ;-)

regards bob monaghan
--
****
* Robert Monaghan POB 752182 Southern Methodist Univ. Dallas Tx 75275 *
**********Standard Disclaimers Apply**********

3705. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-09 04:27:54 UTC
From: Z <post@imaris.demon.co.uk>
Message-ID: <h3wkyxuKNbnAFwUG@imaris.demon.co.uk>
Source record: 26141
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

In article <1e3670a7.0405061303.3f608231@posting.google.com>, Alan
Horowitz <alanh_27@yahoo.com> writes
>ET onboard a ship. Have decided after time to have own tools. Got
>them packed into one of those larger wheel-around, pull-the-handle-out
>check-in hard-shell Samsonites. Ends up being a bit heavy, cause of
>tool junkie genetic coding.
>
>Works great..... except when have to go up or down ladderwells
>("stairs", to you land pukes)
>
>Better approach?

Get the bosun to carry your tools or help you carry your tools.
Webbing strop and ships winch.
Check out each job before starting and take less tools in a smaller
case.
Keep your own tools at home if the shipping company supplies tools and
use your own tools for homers when off tour.
See about your addiction. :-)

I managed a whole week once with a pinching driver!
I am a professed tool junkie as well but my van has no organisation aids
in it so there are tools and materials stuffed in the back of it so much
I can't find the tools I need.

--
Z
Remove all Zeds in e-mail address to reply.

3706. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-09 08:47:49 UTC
From: ablight@alphalink.com.au
Message-ID: <1fc7b362.0405090047.c5c9aa@posting.google.com>
Source record: 26142
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

alanh_27@yahoo.com (Alan Horowitz) wrote in message
news:<1e3670a7.0405081244.40690834@posting.google.com>...
> > havent figured out that you only need a small box for 90% of jobs,
>
>
> You _can_ do 90% of what is to be done with what I carry on my
> belt.
>
>
> With my little toolbag, you can do 99%.
>
>
> But just because one can skin and tan a deer with teeth alone, doesn't
> mean one _enjoys_ doing it that way......

Point taken - and if you were going into the woods to catch a deer,
(or a bunny rabbit) you would at least have a skinning knife with you
and then take the skin back home to tan - the same with repairs, I
have a swiss army knife on my belt and I can do a huge number of
repairs with that. And if you are on a "boat" then you wont have to
drive 15 miles to get the right tool, would you. So, if you want to
lug a 20Kg toolbox up and down "stairs" then feel free to do so - dont
expect to do it any other way, because there isnt one.

Oh, and BTW - on a "boat" you are unlikely to find that a new piece of
equipment needing an unusual tool has miraculously(sp) appeared
overnight - wish I had it that easy!.....

Andrew

3707. Ham Software ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-09 12:03:30 UTC
From: Bob <nubob5001@yahoo.com>
Message-ID: <36pnc.4542$_o1.788124@read2.cgocable.net>
Source record: 26144

Hi

What is the software hams use to identify contacts, record and log them? Is it freeware? Do you need to be logged onto the net for its updates to its directories? Any advice always appreciated, links or info,,,,,

Thank you

Bob

3708. Re: Ham Software ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-09 15:12:13 UTC
From: Bill Turner <noway@nohow.com>
Message-ID: <3bis905dqf3j38uekn8gp714nf83dqugt4@4ax.com>
Source record: 26145

On Sun, 9 May 2004 08:03:30 -0400, "Bob" <nubob5001@yahoo.com> wrote:

>Hi
>
>What is the software hams use to identify contacts, record and log them? Is
>it freeware? Do you need to be logged onto the net for its updates to its
>directories? Any advice always appreciated, links or info,,,,,
>
>Thank you
>
>Bob
>

There are perhaps a dozen or so available. My favorite is the DXLabs
suite of applications, which is freeware and available at

http://www.qsl.net/dxlab/

The individual programs can be run alone, but the real power of the
suite comes from the way they interconnect with each other. This may be
more power than you need, but it will do anything you are likely to ever
require. It's completely free and contains no advertising. I wouldn't
be without it.

--
Bill, W6WRT
QSLs via LoTW

3709. Re: Ham Software ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-09 17:12:50 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <2ytnc.90432$Uz1.27699@bignews3.bellsouth.net>
Source record: 26146

Bill Turner wrote:
> On Sun, 9 May 2004 08:03:30 -0400, "Bob" <nubob5001@yahoo.com> wrote:
>
>
>>Hi
>>
>>What is the software hams use to identify contacts, record and log them? Is
>>it freeware? Do you need to be logged onto the net for its updates to its
>>directories? Any advice always appreciated, links or info,,,,,
>>
>>Thank you
>>
>>Bob
>>
>
>
> ____
>
> There are perhaps a dozen or so available. My favorite is the DXLabs
> suite of applications, which is freeware and available at
>
> http://www.qsl.net/dxlab/
>
> The individual programs can be run alone, but the real power of the
> suite comes from the way they interconnect with each other. This may be
> more power than you need, but it will do anything you are likely to ever
> require. It's completely free and contains no advertising. I wouldn't
> be without it.
>
> --
> Bill, W6WRT
> QSLs via LoTW
>
What about for linux?

3710. Re: Ham Software ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-09 18:18:09 UTC
From: Uwe <outhouse@midcoast.com>
Message-ID: <BCC3EE25.624C%outhouse@midcoast.com>
Source record: 26147

in article 2ytnc.90432$Uz1.27699@bignews3.bellsouth.net, Ken Scharf at wa2mzeNOTTHIS@bellsouth.net wrote on 5/9/04 1:12 PM:

> Bill Turner wrote:
>> On Sun, 9 May 2004 08:03:30 -0400, "Bob" <nubob5001@yahoo.com> wrote:
>>
>>
>>> Hi
>>>
>>> What is the software hams use to identify contacts, record and log them? Is
>>> it freeware? Do you need to be logged onto the net for its updates to its
>>> directories? Any advice always appreciated, links or info,,,,,
>>>
>>> Thank you
>>>
>>> Bob
>>>
>>
>>
>> --
>>
>> There are perhaps a dozen or so available. My favorite is the DXLabs
>> suite of applications, which is freeware and available at
>>
>> http://www.qsl.net/dxlab/
>>
>> The individual programs can be run alone, but the real power of the
>> suite comes from the way they interconnect with each other. This may be
>> more power than you need, but it will do anything you are likely to ever
>> require. It's completely free and contains no advertising. I wouldn't
>> be without it.
>>
>> --
>> Bill, W6WRT
>> QSLs via LoTW
>>
> What about for linux?

What about Macs?

3711. Re: Ham Software Logging Linux and Mac

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-09 18:48:38 UTC
From: el lector se guarda <dlg@pero.net>
Message-ID: <a2vnc.17324$k24.1654@fed1read01>
Source record: 26148

You will find linux and mac logging at URL:
http://ac6v.com/logging.htm

Use CNTRL F search for linux and mac

--
el lector se guarda

Amateur Radio is the best back-up
communications system in the world,
and that's the way it is. Walter Cronkite

"Uwe" <outhouse@midcoast.com> wrote in message
news:BCC3EE25.624C%outhouse@midcoast.com...
> in article 2ytnc.90432$Uz1.27699@bignews3.bellsouth.net, Ken Scharf at
> wa2mzeNOTTHIS@bellsouth.net wrote on 5/9/04 1:12 PM:
>
> > Bill Turner wrote:
> >> On Sun, 9 May 2004 08:03:30 -0400, "Bob" <nubob5001@yahoo.com> wrote:
> >>
> >>
> >>> Hi
> >>>
> >>> What is the software hams use to identify contacts, record and log
them? Is
> >>> it freeware? Do you need to be logged onto the net for its updates to
its
> >>> directories? Any advice always appreciated, links or info,,,,,
> >>>
> >>> Thank you
> >>>
> >>> Bob
> >>>
> >>
> >>
> >> ____
> >>
> >> There are perhaps a dozen or so available. My favorite is the DXLabs
> >> suite of applications, which is freeware and available at
> >>
> >> http://www.qsl.net/dxlab/
> >>
> >> The individual programs can be run alone, but the real power of the
> >> suite comes from the way they interconnect with each other. This may
be

> >> more power than you need, but it will do anything you are likely to
ever
> >> require. It's completely free and contains no advertising. I wouldn't
> >> be without it.
> >>
> >> --
> >> Bill, W6WRT
> >> QSLs via LoTW
> >>
> > What about for linux?
>
> What about Macs?
>

3712. FS: Homebrew Radio Goodies

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-09 20:06:52 UTC
From: Marv_E_Ads@juno.com
Message-ID: <d6222070.0405091206.6c33b319@posting.google.com>
Source record: 26149

*** Homebrew Radio things ***

Many hams build things with a large investment in time & parts that are
worth far less... later. Here are some items from the estate stuff I've
been selling that fit that description -- priced accordingly.

Unless noted, most of the items below are built on PCB material and most
of the enclosures are made by soldering pieces of PCB material into a box
-- not all sides may be present! Batteries not included! A few of
these devices come with schematics, mostly not. The wiring is all open
enough that you can generally see what is going on.

Battery drainer -- LM317K (TO-3) plus a pot wired as a current sink to
drain batteries -- 4" x 3" x 1.5" -- $1

PL Tone generator -- Wein Bridge Oscillator powered by two 9 volt
batteries (not included). - $2

Touch Tone Encoder -- Western Electric Touch Tone Dial mounted in a
4"x4"x2" metal enclosure with power switch. Has a 4 pin DIN connector
plus matching cable terminated in a 1/8" mini plug. $3

Some kind of test oscillator with a NE556, two pots with anodized gold
(colored) knobs, pwr. sw.. LED,. & Banana jack outputs -- $3

HF Harmonic Filter built in a 5" x 2.25" x 2.25" LMB Aluminum box. UHF
connectors. Probably good for 100W. $5

Digital Clock insides -- National MA-1001A demo board with MM5385N IC
plus 5 digit LED readout connected to another small PCB with a
3.579MHz clock circuit & MM5369N 60 Hz diveder. $5

60dB Sampling Tap -- HN female connectors for the main line and a BNC for
the tap. 1KW in the line puts 1mW to the tap. -- $10

435 MHz power splitter with (3) N connectors. This is made out of brass
sheet stock and is about 15" long by 1" square. $10

Varactor multiplier (unfinished) -- looks like it's designed for 144 to

432. Built in a 3.5" x 2" x 7/8" extruded aluminum case -- top plate missing. Silver plated coils, Johnson 189-6-4 caps. It think it is complete execpt for the input and output leads. $10

Some kind of VHF thing just started. Pomona 4"x2.5"x1.5" cast box with a
couple 160-104 capacitors, BNC connectors, a miniature 50K bourns pot., 6
capacitors mounted to gold plated terminals with a very pretty gold flashed internal shield structure. Nothing is soldered -- this was just
started. $10

Antenna Noise bridge? -- Pot & Cap plus 4 transistor circuit mounted in a
5" x 4" x 2" enclosure. BNC connectors marked ANT & RX. Pwr SW. & Led
Powered by a single 9 volt battery. - $10

Two Meter to 24-28 MHz receiving converter (I think!) -- 5" x 4" x 1.75"
-- $10

All of the above plus shipping, if necessary, naturally.

Contact: Marv WC6W 310 649 3111 (reasonable hours Pacific Time please)

or via: Marv_E_Ads@Juno.com

*

3713. Re: Ham Software ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-09 21:52:58 UTC
From: Doug Smith W9WI <w9wi@invalid.invalid>
Message-ID: <409EA82A.3060507@invalid.invalid>
Source record: 26150

Bob wrote:
> What is the software hams use to identify contacts, record and log them? Is
> it freeware? Do you need to be logged onto the net for its updates to its
> directories? Any advice always appreciated, links or info,,,,,

There are as many answers to this question as there are hams<grin>...
Seriously, there must be dozens if not hundreds of logging programs out
there. The ac6v.com link posted elsewhere in this thread is a good
place to start looking.

I'm not entirely sure I know what you mean by "identify contacts".
Usually that's done by copying the other guy's callsign over the air.
(arguably, you don't have a contact if you didn't copy the other guy's
call over the radio!) Or do you mean to find more information about a
station once you've copied the callsign?

There are databases that will cross-reference callsigns to names &
addresses; www.qrz.com is a popular one, I think they also still sell
their database on CD so you can use it even if you aren't logged onto
the 'Net. There are simpler databases that will cross-reference a
callsign to that station's country. In some logging programs, this
lookup function is part of the program; in others, a separate program is
used. (often, just a web browser)

As for my own station, I have a homemade program running as Perl CGI
scripts on a computer in the den; QSOs are logged in a MySQL database,
and the Windows computer in the hamshack attaches to the webserver in
the den to log(/search) QSOs. Works pretty well, though I don't have
any of the address lookup functions. (guess I should add that someday)
--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com

3714. Re: Info on Toyo Crystal filter needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-09 22:22:35 UTC
From: Jeff <jeff_164@hotmail.com>
Message-ID: <Maync.2633$XI4.102050@news.xtra.co.nz>
Source record: 26143
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,sci.electronics.components,sci.electronics.repair

Thanks very much for the information, thats exactly what I needed.
regards from New Zealand,
JEFF

"casab" <maisot@POISTA.kolumbus.fi> wrote in message
news:c7fa0s$pg7$1@phys-news1.kolumbus.fi...
> Pass band 3 dB: +-3.75kHz, Stop band 70 dB: +-8.75 kHz, Insertion
> Loss: 4.5 dB, Terminating Impedance: 470 ohm// 25pF
>
> - casab
>
> "Jeff" <jeff_164@hotmail.com> kirjoitti viestiss&#65533;
> news:a9zmc.1275$XI4.63649@news.xtra.co.nz...
> > Hi, Im looking for info on a Toyo TQF-2849 (10.7MHz) crystal filter.
> > Need to know the bandwidth and termination impedances. Any help
> appreciated.
> > Toyo in Japan were no help.
> > regards,
> > JEFF
> > ZL3TNV
> >
> >
>

3715. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-10 02:11:23 UTC
From: jakdedert <jdedert@bellsouth.net>
Message-ID: <zpBnc.85416$cb.16046@bignews1.bellsouth.net>
Source record: 26151
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

"Andrew VK3BFA" <ablight@alphalink.com.au> wrote in message
news:1fc7b362.0405090047.c5c9aa@posting.google.com...
> alanh_27@yahoo.com (Alan Horowitz) wrote in message
news:<1e3670a7.0405081244.40690834@posting.google.com>...
> > > havent figured out that you only need a small box for 90% of jobs,
> > >
> > >
> > > You _can_ do 90% of what is to be done with what I carry on my
> > > belt.
> > >
> > >
> > > With my little toolbag, you can do 99%.
> > >
> > >
> > > But just because one can skin and tan a deer with teeth alone, doesn't
> > > mean one _enjoys_ doing it that way......
> >
> > Point taken - and if you were going into the woods to catch a deer,
> > (or a bunny rabbit) you would at least have a skinning knife with you
> > and then take the skin back home to tan - the same with repairs, I
> > have a swiss army knife on my belt and I can do a huge number of
> > repairs with that. And if you are on a "boat" then you wont have to
> > drive 15 miles to get the right tool, would you. So, if you want to
> > lug a 20Kg toolbox up and down "stairs" then feel free to do so - dont
> > expect to do it any other way, because there isnt one.
> >
Perhaps the OP could spend more time at the gym? ;-)

I, too, find that my little Gerber Tool solves well over 90% of my
'occasional' tool needs. While there's hardly a tool on it that I would use
for a particular job if I had the 'real' tool at hand; the utility of having
all those tools on my belt--all of the time--is liberating.

jak

> Oh, and BTW - on a "boat" you are unlikely to find that a new piece of
> equipment needing an unusual tool has miraculously(sp) appeared
> overnight - wish I had it that easy!.....
> >
> Andrew

3716. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-10 02:42:38 UTC
From: "Rich S." <capn27@TRAPyahooSPAM.com.sg>
Message-ID: <CN-dnVId37K8cQPdRVn-hw@harbornet.com>
Source record: 26152
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

"jakdedert" <jdedert@bellsouth.net> wrote in message
news:zpBnc.85416$cb.16046@bignews1.bellsouth.net...
>
>
> I, too, find that my little Gerber Tool solves well over 90% of my
> 'occasional' tool needs. While there's hardly a tool on it that I would
use
> for a particular job if I had the 'real' tool at hand; the utility of
having
> all those tools on my belt--all of the time--is liberating.

I wonder how many of those the TSA owns, now?

Rich "Honest, I forgot it was on my belt" S.

3717. HP 141A spectrum analyzer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-10 02:51:50 UTC
From: Gary Schafer <gaschafer@comcast.net>
Message-ID: <ngrt90lr9jmc0706p8skv3jvk44oag6e8c@4ax.com>
Source record: 26153

I have an old HP 141A spectrum analyzer. Similar to the 141T.
Can someone tell me if I can plug in an 8553B RF unit?

How about an 8555A RF unit? I know it is to be used with the 141T but
will it work in the 141A also?

Thanks for any help.
Gary K4FMX

3718. Re: surface mount soldering..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-10 06:39:24 UTC
From: John Smith <someone@microsoft.com>
Message-ID: <c7n7v1$5tr$1@newstree.wise.edt.ericsson.se>
Source record: 26154

> > 2. How can we either store it so it stays fresh; or re-constitute it
> > after it's gorn orf?
>
> It keeps much better if it is kept in a fridge.

Try the freezer - lasts MUCH longer. That's where I keep mine. It only takes a few minutes to defrost (good conductor) and keeps for years, even with the occasional defrosting.

BR H

3719. Re: surface mount soldering..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-10 08:36:15 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <pbU2r8J$7znAFAmw@ifwtech.co.uk>
Source record: 26155

John Smith wrote:
>> > 2. How can we either store it so it stays fresh; or re-constitute it
>> > after it's gorn orf?
>>
>> It keeps much better if it is kept in a fridge.
>
>Try the freezer - lasts MUCH longer. That's where I keep mine. It only
>takes a few minutes to defrost (good conductor) and keeps for years,
>even with the occasional defrosting.
>

Ah... thank you, that's the answer I was hoping for.

(Warnings about avoiding cross-contamination to food also noted.)

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)

http://www.ifwtech.co.uk/g3sek

3720. Re: surface mount soldering..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-10 12:38:49 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <fkqu90h7pcr2cqnhd7h5mdtbvre7u5quao@4ax.com>
Source record: 26156

On Mon, 10 May 2004 09:36:15 +0100, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> wrote:

>John Smith wrote:
>>> > 2. How can we either store it so it stays fresh; or re-constitute it
>>> > after it's gorn orf?
>>>
>>> It keeps much better if it is kept in a fridge.
>>
>>Try the freezer - lasts MUCH longer. That's where I keep mine. It only
>>takes a few minutes to defrost (good conductor) and keeps for years,
>>even with the occasional defrosting.
>>
>
>Ah... thank you, that's the answer I was hoping for.

Enjoy your holiday, Ian?
--

"What is now proved was once only imagin'd." - William Blake, 1793.

3721. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-10 13:31:00 UTC
From: ablight@alphalink.com.au
Message-ID: <1fc7b362.0405100531.55960e@posting.google.com>
Source record: 26157
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

Z <post@imaris.demon.co.uk> wrote in message news:<h3wkyxuKNbnAFwUG@imaris.demon.co.uk>...
> In article <1e3670a7.0405061303.3f608231@posting.google.com>, Alan
> Horowitz <alanh_27@yahoo.com> writes
> >ET onboard a ship. Have decided after time to have own tools. Got
> >them packed into one of those larger wheel-around, pull-the-handle-out
> >check-in hard-shell Samsonites. Ends up being a bit heavy, cause of
> >tool junkie genetic coding.
> >
> >Works great..... except when have to go up or down ladderwells
> >("stairs", to you land pukes)
> >
> >Better approach?
>
> Get the bosun to carry your tools or help you carry your tools.
> Webbing strop and ships winch.
> Check out each job before starting and take less tools in a smaller
> case.
> Keep your own tools at home if the shipping company supplies tools and
> use your own tools for homers when off tour.
> See about your addiction. :-)
>
>
> I managed a whole week once with a pinching driver!
> I am a professed tool junkie as well but my van has no organisation aids
> in it so there are tools and materials stuffed in the back of it so much
> I can't find the tools I need.

Yep, I am a tool junkie as well - but I only carry the bare minimum in
the van, paranoid about them being stolen, and commercial insurance is
just toooo much. Lets face it, he who dies with the most tools/test
equipment wins......(not sure what you win, I just know that you do).

BTW - whats the most obscure specialised tool you own - you know,
something that was acquired in a moment of madness and never got used
- (this specifically exludes power tools, they are in a special
"sacred objects" category)...and where can I get a micro lathe cheap
for turning up capacitor shafts....

de VK3BFA Andrew

3722. Re: Ham Software ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-10 14:41:10 UTC
From: Bill Turner <noway@nohow.com>
Message-ID: <g15v909q7s9l64vg0bai2jj6lbq9nuaphk@4ax.com>
Source record: 26158

On Sun, 09 May 2004 13:12:50 -0400, Ken Scharf
<wa2mzeNOTTHIS@bellsouth.net> wrote:

>What about for linux?

The author of DXLabs, AA6YQ, has been asked that question and has
decided not to try to make it run under Linux.

--
Bill, W6WRT
QSLs via LoTW

3723. Ultiboard 7.0 -- anyone using it?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-10 15:03:11 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <1rCdnRc5mJVFBQLdRVn-tw@comcast.com>
Source record: 26159

i received the demo disk a couple months ago -- has anyone comments on the new version.

jack

3724. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-10 15:10:34 UTC
From: gyromike@yahoo.com
Message-ID: <58e64b78.0405100710.5fc57d14@posting.google.com>
Source record: 26160
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

"Rich S." <capn27@TRAPyahooSPAM.com.sg> wrote in message
news:<CN-dnVId37K8cQPdRVn-hw@harbornet.com>...
> "jakdedert" <jdedert@bellsouth.net> wrote in message
> news:zpBnc.85416$cb.16046@bignews1.bellsouth.net...
> >
> >
> > I, too, find that my little Gerber Tool solves well over 90% of my
> > 'occasional' tool needs. While there's hardly a tool on it that I would
> use
> > for a particular job if I had the 'real' tool at hand; the utility of
> having
> > all those tools on my belt--all of the time--is liberating.
>
> I wonder how many of those the TSA owns, now?
>
> Rich "Honest, I forgot it was on my belt" S.

I almost forgot mine on my belt at the airport once. Luckily I
remembered in time and was able to run back and stick it in my checked
baggage. I was almost sick at the thought of having to turn it over to
Security.

I would rather leave my wallet at home than my Gerber. It's saved my
bacon more times than I can remember. Best $40 I ever spent.

Mike

3725. N8WWM will not feed his kids

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-10 15:11:23 UTC
From: Bada Bing <BadaBing@implant.com>
Message-ID: <0ab18f87c10fcb8c7f5f71acde219b2e@news.teranews.com>
Source record: 26161
Cross-posted to: rec.radio.amateur.policy,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy,rec.radio.cb,rec.radio.swap

What a piece of human trash doud adair tuned out to be.

LUCAS COUNTY COURT OF COMMON PLEAS
J. BERNIE QUILTER, CLERK
700 ADAMS STREET
TOLEDO, OHIO TIME: 11:06:34 AM
DATE: 5/10/2004

CASE: G -4801 -CR -199606161
TITLE: S/O V DOUGLAS W ADAIR
JUDGE: JAMES D. JENSEN
FILING DATE: 6/12/1996 CASE TYPE: CR CRIMINAL

MONETARY AMOUNT: DOCKET/PAGE:
ORIGINAL COURT: TAX TYPE:
PREVIOUS CASE NUMBER: STATE OF OHIO NUMBER:

Party Counsel Prosecutor
Defendant 1:
ADAIR DOUGLAS W
5319 SECOR RD.
TOLEDO , OH 43623 MARY S. SWANSON
4199365120
411 N MICHIGAN
TOLEDO , OH 436241606

COUNT PARTY DESCRIPTION ABBREV.
1 (D -1)ADAIR DOUGLAS W NONSUPPORT OF DEPENDENTS F4

DATE SEQ EVENT
6/12/1996 1 Title : JRE:CASE ACTIVATION IN FACTS
PARTY : -
5/31/2000 1 Title : WAR:CAPIAS ORDERED PER LCAPD
803-00499 issued by PJ (CAPIAS REQUEST GRANTED)
Pursuant to the request of probation a capias is ordered
issued. Bond is set at $5,000.00 no 10%.

JUDGE JAMES D. JENSEN
PARTY : D1 - ADAIR DOUGLAS W
6/1/2000 1 Title : EVT:ORDER FILED & JOURNALIZED
CAPIAS C-174-842
PARTY : D1 - ADAIR DOUGLAS W
6/1/2000 2 Title : EVT:ORDER FILED & JOURNALIZED
CAPIAS C-174-843
PARTY : D1 - ADAIR DOUGLAS W
6/1/2000 3 Title : WAR:CAPIAS ISSUED BY CLERK
C01-02080 issued by 163 (8931) WAR:CAPIAS ISSUED BY CLERK
PARTY : D1 - ADAIR DOUGLAS W
11/13/2000 1 Title : WAR:DEFD'T ARREST WARR/CAPIAS
PARTY : D1 - ADAIR DOUGLAS W
11/13/2000 2 Title : WAR:CAPIAS SERVED ON DEFENDANT
PARTY : D1 - ADAIR DOUGLAS W
11/13/2000 3 Title : HRG:PV HEARING SET
November 17, 2000 at 8:30 a.m.
PARTY : D1 - ADAIR DOUGLAS W
11/13/2000 4 Title : WAR:CAPIAS RETURN FILED
SERVED ON 11/13/00
PARTY : D1 - ADAIR DOUGLAS W
11/13/2000 5 Title : WAR:CAPIAS RETURN FILED
SERVED ON 11/12/00
PARTY : D1 - ADAIR DOUGLAS W
11/17/2000 1 Title : BND:SUPERVISED OR BOND ISSUED
PARTY : D1 - ADAIR DOUGLAS W
11/17/2000 2 Title : MIS:CASE CONT AT DEF REQUEST
772-28458 issued by JTS (GENERAL CONTINUANCE FOR CRIMINAL CA
Dated November 15, 2000. Court Reporter SANDRA CORPE
ordered. State of Ohio: ANNE KIRKHOPE. Defendant, DOUGLAS
ADAIR present in court. Indigency Hearing held. MARY S.
SWANSON appointed as counsel.
Matter called for Probation Violation Hearing. Pursuant to
the request of Defendant, matter rescheduled for Probation
Violation Hearing on Friday, December 1, 2000 at 8:30 a.m.
Bond is reset at Supervised Own Recognizance.
JUDGE JAMES D. JENSEN
PARTY : D1 - ADAIR DOUGLAS W
11/22/2000 1 Title : ORD:ATTORNEY APPOINTED
Sue Swanson
PARTY : D1 - ADAIR DOUGLAS W
11/27/2000 1 Title : EVT:ORD FILE/JOUR$ THRU9/23/03
RESCHEDULED PV HEARING C-183-1483
PARTY : D1 - ADAIR DOUGLAS W
11/29/2000 1 Title : MIS:REC'D PSI/PV/CCV REPORT
PARTY : D1 - ADAIR DOUGLAS W
12/1/2000 1 Title : ORD: PV/PROBATION CONTINUED
671-01526 issued by JTS (PROBATION VIOL - PROBATION CONTINUE
Dated December 1, 2000. Court Reporter SANDRA CORPE
ordered. State of Ohio: ANNE KIRKHOPE. MARY S. SWANSON

present on behalf of the defendant. Defendant, DOUGLAS
ADAIR present in court.
Defendant having admitted to a probation violation, and
having waived oral hearing, defendant is found in violation
of probation.
Defendant having been convicted of the offense of Nonsupport
of Dependents, in violation of Revised Code Section
2919.21(A)(2), a felony of the 4TH degree.
Probation as ordered by this Court on April 11, 1997 is
ordered continued with the following added conditions: 1)
Seek and maintain gainful employment; 2) Defendant to seek
mental health counseling; 3) Execute wage withholding
agreement.
Defendant ordered to pay the costs of prosecution including
any fees associated with the appointment of counsel. It is
further ordered that the defendant pay any supervision fees
associated with being granted probation. Payment of
financial obligations shall be prioritized as restitution,
supervision fees, court costs, fines, and assigned counsel
fees.
JUDGE JAMES D. JENSEN
PARTY : D1 - ADAIR DOUGLAS W
12/5/2000 1 Title : EVT:JE FILE/JOUR $ THRU9/23/03
SENTENCE C-184-502
PARTY : D1 - ADAIR DOUGLAS W
3/15/2002 1 Title : COMMUNITY CONTROL TERMINATED
terminated unsuccesfully
PARTY : D1 - ADAIR DOUGLAS W

Just one look says it all.

http://us.share.geocities.com/picsrfun2003/upclosenfugly-dogie2.bmp

3726. Re: N8WWM will not feed his kids

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-10 15:34:53 UTC
From: Steveo <moparholic@hotmail-nospam.com>
Message-ID: <20040510113453.796$VV@newsreader.com>
Source record: 26162
Cross-posted to: rec.radio.amateur.policy,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy,rec.radio.cb,rec.radio.swap

"Bada Bing" <BadaBing@implant.com> wrote:
> What a piece of human trash doud adair tuned out to be.
>
> LUCAS COUNTY COURT OF COMMON PLEAS
> J. BERNIE QUILTER, CLERK
> 700 ADAMS STREET
> TOLEDO, OHIO TIME: 11:06:34 AM
> DATE: 5/10/2004
>
> CASE: G -4801 -CR -199606161
> TITLE: S/O V DOUGLAS W ADAIR
> JUDGE: JAMES D. JENSEN
> FILING DATE: 6/12/1996 CASE TYPE: CR CRIMINAL
>
> ---
> --- ----
> MONETARY AMOUNT: DOCKET/PAGE:
> ORIGINAL COURT: TAX TYPE:
> PREVIOUS CASE NUMBER: STATE OF OHIO NUMBER:
>
> ---
> --- ----
> Party Counsel Prosecutor
> Defendant 1:
> ADAIR DOUGLAS W
> 5319 SECOR RD.
> TOLEDO , OH 43623 MARY S. SWANSON
> 4199365120
> 411 N MICHIGAN
> TOLEDO , OH 436241606
>
> ---
> --- ----
> COUNT PARTY DESCRIPTION ABBREV.
> 1 (D -1)ADAIR DOUGLAS W NONSUPPORT OF DEPENDENTS F4
>
> ---
> --- ----
> DATE SEQ EVENT
> 6/12/1996 1 Title : JRE:CASE ACTIVATION IN FACTS
> PARTY : -
> 5/31/2000 1 Title : WAR:CAPIAS ORDERED PER LCAPD

> 803-00499 issued by PJ (CAPIAS REQUEST GRANTED)
> Pursuant to the request of probation a capias is ordered
> issued. Bond is set at $5,000.00 no 10%.
> JUDGE JAMES D. JENSEN
> PARTY : D1 - ADAIR DOUGLAS W
> 6/1/2000 1 Title : EVT:ORDER FILED & JOURNALIZED
> CAPIAS C-174-842
> PARTY : D1 - ADAIR DOUGLAS W
> 6/1/2000 2 Title : EVT:ORDER FILED & JOURNALIZED
> CAPIAS C-174-843
> PARTY : D1 - ADAIR DOUGLAS W
> 6/1/2000 3 Title : WAR:CAPIAS ISSUED BY CLERK
> C01-02080 issued by 163 (8931) WAR:CAPIAS ISSUED BY CLERK
> PARTY : D1 - ADAIR DOUGLAS W
> 11/13/2000 1 Title : WAR:DEFD'T ARREST WARR/CAPIAS
> PARTY : D1 - ADAIR DOUGLAS W
> 11/13/2000 2 Title : WAR:CAPIAS SERVED ON DEFENDANT
> PARTY : D1 - ADAIR DOUGLAS W
> 11/13/2000 3 Title : HRG:PV HEARING SET
> November 17, 2000 at 8:30 a.m.
> PARTY : D1 - ADAIR DOUGLAS W
> 11/13/2000 4 Title : WAR:CAPIAS RETURN FILED
> SERVED ON 11/13/00
> PARTY : D1 - ADAIR DOUGLAS W
> 11/13/2000 5 Title : WAR:CAPIAS RETURN FILED
> SERVED ON 11/12/00
> PARTY : D1 - ADAIR DOUGLAS W
> 11/17/2000 1 Title : BND:SUPERVISED OR BOND ISSUED
> PARTY : D1 - ADAIR DOUGLAS W
> 11/17/2000 2 Title : MIS:CASE CONT AT DEF REQUEST
> 772-28458 issued by JTS (GENERAL CONTINUANCE FOR CRIMINAL CA
> Dated November 15, 2000. Court Reporter SANDRA CORPE
> ordered. State of Ohio: ANNE KIRKHOPE. Defendant, DOUGLAS
> ADAIR present in court. Indigency Hearing held. MARY S.
> SWANSON appointed as counsel.
> Matter called for Probation Violation Hearing. Pursuant to
> the request of Defendant, matter rescheduled for Probation
> Violation Hearing on Friday, December 1, 2000 at 8:30 a.m.
> Bond is reset at Supervised Own Recognizance.
> JUDGE JAMES D. JENSEN
> PARTY : D1 - ADAIR DOUGLAS W
> 11/22/2000 1 Title : ORD:ATTORNEY APPOINTED
> Sue Swanson
> PARTY : D1 - ADAIR DOUGLAS W
> 11/27/2000 1 Title : EVT:ORD FILE/JOUR$ THRU9/23/03
> RESCHEDULED PV HEARING C-183-1483
> PARTY : D1 - ADAIR DOUGLAS W
> 11/29/2000 1 Title : MIS:REC'D PSI/PV/CCV REPORT
> PARTY : D1 - ADAIR DOUGLAS W
> 12/1/2000 1 Title : ORD: PV/PROBATION CONTINUED

> 671-01526 issued by JTS (PROBATION VIOL - PROBATION CONTINUE
> Dated December 1, 2000. Court Reporter SANDRA CORPE
> ordered. State of Ohio: ANNE KIRKHOPE. MARY S. SWANSON
> present on behalf of the defendant. Defendant, DOUGLAS
> ADAIR present in court.
> Defendant having admitted to a probation violation, and
> having waived oral hearing, defendant is found in violation
> of probation.
> Defendant having been convicted of the offense of Nonsupport
> of Dependents, in violation of Revised Code Section
> 2919.21(A)(2), a felony of the 4TH degree.
> Probation as ordered by this Court on April 11, 1997 is
> ordered continued with the following added conditions: 1)
> Seek and maintain gainful employment; 2) Defendant to seek
> mental health counseling; 3) Execute wage withholding
> agreement.
> Defendant ordered to pay the costs of prosecution including
> any fees associated with the appointment of counsel. It is
> further ordered that the defendant pay any supervision fees
> associated with being granted probation. Payment of
> financial obligations shall be prioritized as restitution,
> supervision fees, court costs, fines, and assigned counsel
> fees.
> JUDGE JAMES D. JENSEN
> PARTY : D1 - ADAIR DOUGLAS W
> 12/5/2000 1 Title : EVT:JE FILE/JOUR $ THRU9/23/03
> SENTENCE C-184-502
> PARTY : D1 - ADAIR DOUGLAS W
> 3/15/2002 1 Title : COMMUNITY CONTROL TERMINATED
> terminated unsuccesfully
> PARTY : D1 - ADAIR DOUGLAS W
> --
> Just one look says it all.
>
> http://us.share.geocities.com/picsrfun2003/upclosenfugly-dogie2.bmp
>
Hey, he's gotta feed crisco kathy first, she eats anything
you throw on the floor.

--
I won't retire, but I might retread.

3727. Re: N8WWM will not feed his kids

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-10 17:13:01 UTC
From: Walt Davidson <g3nyy@despammed.com>
Message-ID: <mldv90d4pi40lsuc4df6j20cm224djeanj@4ax.com>
Source record: 26163
Cross-posted to: rec.radio.amateur.policy,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy,rec.radio.cb,rec.radio.swap

On 10 May 2004 15:34:53 GMT, Steveo <moparholic@hotmail-nospam.com>
wrote:

>Hey, he's gotta feed crisco kathy first, she eats anything
>you throw on the floor.

I don't know the person whom this refers to, but if he is mentally ill
he deserves sympathy and help ... not abuse.

73 de G3NYY

--
Walt Davidson Email: g3nyy @despammed.com

3728. Re: N8WWM will not feed his kids

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-10 17:32:25 UTC
From: Steveo <moparholic@hotmail-nospam.com>
Message-ID: <20040510133225.145$Fa@newsreader.com>
Source record: 26164
Cross-posted to: rec.radio.amateur.policy,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy,rec.radio.cb,rec.radio.swap

Walt Davidson <g3nyy@despammed.com> wrote:
> On 10 May 2004 15:34:53 GMT, Steveo <moparholic@hotmail-nospam.com>
> wrote:
>
> >Hey, he's gotta feed crisco kathy first, she eats anything
> >you throw on the floor.
>
> I don't know the person whom this refers to, but if he is mentally ill
> he deserves sympathy and help ... not abuse.
>
> 73 de G3NYY
>
One might try to help him, if he wasn't such a lost cause. Check
him out.

http://groups.google.com/groups?q=n8wwm

--
I won't retire, but I might retread.

3729. Re: Capacitor Series question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-10 22:23:55 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c7ovhp$qe7$1@newshost.mot.com>
Source record: 26167

Ramsey doesn't seem to have much, but I didn't dig too deep.

http://www.ramseyelectronics.com/support/default.asp?page=kbg&pagenum=1

--
Steve N, K,9;d, c. i My email has no u's.

"Brian" <brianCUT@iquestHERE.net> wrote in message
news:9Hcnc.12637$V97.8600@newsread1.news.pas.earthlink.net...
> Here is a great tutorial site:
>
> http://www.ffldusoe.edu/Faculty/Denenberg/Topics/Electronics/Alex_Pounds/
>
> Also try:
>
> http://www.oldradioz.com/id46.htm
>
> And last but not least:
>
> http://home.woh.rr.com/n8ie/tbook.htm
>
>
>
>
> "Clinton" <news2004@_nospam_telus.net> wrote in message
> news:Vz9nc.31559$U75.19304@edtnps89...
> > I was just looking through the Digikey catalog for a 200Vdc, 220uf,
radial
> > lead capacitor. No problem I thought, until I got looking.. Can anyone
> > tell me, or point me to a web site, that explains all the different
series
> > of capacitors?
> > They vary in price from around $2 up to $8.
> > Thans
> > ---
> > Remove _nospam_ to reply via email.
> > VE7KNL
> >
> >
> >
>
>

3730. Re: Capacitor Series question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-10 22:52:16 UTC
From: Clinton <news2004@_nospam_telus.net>
Message-ID: <AITnc.12951$uN4.5588@clgrps12>
Source record: 26165

Thanks, I'll check them out.

--

Remove _nospam_ to reply via email.

"Brian" <brianCUT@iquestHERE.net> wrote in message
news:9Hcnc.12637$V97.8600@newsread1.news.pas.earthlink.net...
> Here is a great tutorial site:
>
> http://www.ffldusoe.edu/Faculty/Denenberg/Topics/Electronics/Alex_Pounds/
>
> Also try:
>
> http://www.oldradioz.com/id46.htm
>
> And last but not least:
>
> http://home.woh.rr.com/n8ie/tbook.htm
>
>
>
>
> "Clinton" <news2004@_nospam_telus.net> wrote in message
> news:Vz9nc.31559$U75.19304@edtnps89...
> > I was just looking through the Digikey catalog for a 200Vdc, 220uf,
radial
> > lead capacitor. No problem I thought, until I got looking.. Can anyone
> > tell me, or point me to a web site, that explains all the different
series
> > of capacitors?
> > They vary in price from around $2 up to $8.
> > Thans
> > ---
> > Remove _nospam_ to reply via email.
> > VE7KNL
> >
> >
> >
>
>

3731. Re: Capacitor Series question

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-10 22:54:27 UTC
From: Clinton <news2004@_nospam_telus.net>
Message-ID: <DKTnc.12961$uN4.10977@clgrps12>
Source record: 26166

Thanks.

--

Remove _nospam_ to reply via email.

"Tom Bruhns" <k7itm@aol.com> wrote in message
news:3200347.0405081507.709858e2@posting.google.com...
> The DigiKey catalog itself has info about the salient features of the
> various series. Perhaps you want to know specifically what to look
> for, what matters. Key variables are the ability to handle ripple
> current and maximum operating temperature. Also, some are rated for
> high-frequency use...best to not use a low-frequency one in a critical
> point in a switching power supply, where it would have a high ripple
> current at the switching frequency.
>
> You can also go to the manufacturers' web sites and find info on the
> various series, and occasionally even find application notes.
>
> Cheers,
> Tom
>
>
> "Clinton" <news2004@_nospam_telus.net> wrote in message
news:<Vz9nc.31559$U75.19304@edtnps89>...
> > I was just looking through the Digikey catalog for a 200Vdc, 220uf,
radial
> > lead capacitor. No problem I thought, until I got looking.. Can anyone
> > tell me, or point me to a web site, that explains all the different
series
> > of capacitors?
> > They vary in price from around $2 up to $8.
> > Thans
> > ---
> > Remove _nospam_ to reply via email.
> > VE7KNL

3732. Frequency counter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-11 05:08:23 UTC
From: Mike Burch <mburch46@mchsi.com>
Message-ID: <bdZnc.24361$iF6.2538606@attbi_s02>
Source record: 26168

Hi Fella's,

I would like to add a small frequency counter to the front of my heathkit IG-102 signal generator. Its the old tube model with the gray front. The counter would have to go to just 110 mhz, be small and have an led display but lcd would be an acceptable second.
Do any of you have any recommendations on kits?
Thanks in advance for any input.

Mike Burch K8MB

Apache Junction AZ

3733. FS Ad - Electronic Components including TIL311 Hex Displays - LEDs - TTL Chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-11 07:34:03 UTC
From: jr_part@excite.com
Message-ID: <61626393.0405102334.521444ac@posting.google.com>
Source record: 26169
Cross-posted to: rec.ham-radio.swap,rec.radio.amateur.homebrew,uk.radio.amateur

Most of the components listed below are still available.
Some of the quantities have changed.

jr_part@excite.com (Parts & Components) wrote:
> All prices are in US Funds.
>
> QTY. Part # Unit Price Description
> ---- --------- ---------- -----------
> OPTO.
>
> 54 TIL311 $7.00 ea. The TI TIL-311 is a Hexadecimal Dot
> Matrix Display with integral TTL driver
> electronics to accept, store & display
> 4-bit binary data, Epoxy package
> (Note: This part wholesales at about $16.50 each)
>
> 8 TIL311A $7.00 ea. The TI TIL-311A is a Hexadecimal Dot
> Matrix Display with integral TTL driver
> circuit to accept, store & display
> 4-bit binary data, Plastic package
>
> 11 DIS1417 $7.00 ea. The TI DIS-1417 is a Hexadecimal Dot
> Matrix Display with integral TTL driver
> circuit to accept, store & display
> 4-bit binary data, Epoxy package
>
> For a copy of the TIL311 Datasheet see:
> http://www-s.ti.com/sc/ds/til311.pdf and it is mirrored at
> http://umwnt1.physics.lsa.umich.edu/mttc/images/til311.pdf
>
> 275 Green LED $0.10 ea. Rectangular 5mm x 2mm face/lens
> $17.50 per bag of 250 ($0.07 each) and
>
> 7,250 Red LED $0.10 ea. T1 3/4, 5mm Diameter or 0.2" Diameter
> Sharp P/N: GL5PR4 (5mA at 1.9V)
> $17.50 per bag of 250 ($0.07 each) and
> $100 per box of 2000 ($0.05 each)
>
> 106 MAN6440 $0.95 ea. Dual Digit, Green 7 Segment display,
> 0.56" tall character, Common Cathode
> $15 per tube of 20 MAN- 6440 ($0.75 ea.)
>

> 85 FND6740 $0.95 ea. Dual Digit, Red 7 Segment display,
> 0.56" tall character, Common Cathode
> $15 per tube of 20 FND-6740 ($0.75 ea.)
>
>
> TTL CHIPS, DIP Package
>
> 525 7407N $0.18 ea. $4.00 per tube of 25 ($0.16 each)
> Hex Non-Inverted Buffer with
> Open-Collector outputs
>
> 605 74ALS20AN $0.19 ea. $4.00 per tube of 25 ($0.16 each)
> Dual 4-Input Positive NAND Gates
>
> 240 74ALS27AN $0.19 ea. $4.00 per tube of 25 ($0.16 each)
> Triple 3-Input Positive NOR Gates
>
> 1,325 74LS74AN $0.25 ea. $5.00 per tube of 25 ($0.20 each)
> Dual D-Type Positive Edge-triggered
> Flip-Flops with Preset and Clear.
>
> 100 74ALS74AN $0.25 ea. $5.00 per tube of 25 ($0.20 each)
> Dual D-Type Positive Edge-triggered
> Flip-Flops with Preset and Clear.
>
>
> RESISTORS
>
> 55,900 100 Ohm, 5%, 1/4 Watt Carbon film resistor, $1 per 100,
> $15 per box of 5000 or
> $100 for 50,000 pieces.
>
> 3,400 220 Ohm, 5%, 1/4 Watt Carbon film resistor, $1 per 100,
> $12 per box of 3400 or
>
> 3,400 680 Ohm, 5%, 1/4 Watt Carbon film resistor, $1 per 100,
> $12 per box of 3400 or
>
> A pack of 100 resistors is $4 inclusive shipping to anywhere
> in the US and Canada
>
> e-mail: jrparts@excite.com
>
> Minimum purchase $4 including postage.
>
> No shipping is included in the above prices. To quote a
> total including shipping, I require your full ZIP code or
> postal code in addition to a list of what you are interested
> in. Please specify the country for international orders
> outside of North America. The shipping you will be quoted

> is the cost of the postage stamp (plus insurance if requested).
>
> The only part that I will ship for a total of $4 (by regular
> mail) to anywhere in the US and Canada is a pack of 100
> resistors.
>
> All components are new. All semi-conductors are stored in
> anti-static tubes/bags or on anti-static foam if you purchase
> less than a tube/bag.
>
> Offers on the lot are welcome. Keep in mind that I am looking
> for a price below wholesale, but more than the commercial buyers
> of surplus electronic parts are offering.

3734. Re: FS Ad - Electronic Components including TIL311 Hex Displays - LEDs - TTL Chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-11 08:20:35 UTC
From: Walt Davidson <g3nyy@despammed.com>
Message-ID: <nu21a0lcgptrnmp4cledqldo9i0faqc26e@4ax.com>
Source record: 26170
Cross-posted to: rec.ham-radio.swap,rec.radio.amateur.homebrew,uk.radio.amateur

On 11 May 2004 00:34:03 -0700, jr_part@excite.com (Parts & Components)
wrote:

>Most of the components listed below are still available.

I'm not surprised they are still available, at the prices you are
asking. Wholesale quantities of LEDs and resistors are available far
cheaper locally here in the UK.

(Or perhaps, when you posted to uk.radio.amateur, you didn't realise
that 'UK' is not a state of the USA.)
:-)

73 de G3NYY

--
Walt Davidson Email: g3nyy @despammed.com

3735. FS: Collins Radio Partrs and More

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-11 11:06:25 UTC
From: Gordon <greyeagl@bellsouth.net>
Message-ID: <esc1a0l58bot2d3ha10udjfbcefvhaejvq@4ax.com>
Source record: 26171

I have for sale several small parts gleaned from a Collins KWM-2
transceiver, including the complete bare chassis for that radio. The
following link will take you to my web site where a short description
and pictures for each item is listetd. Follow this link:

http://home.bellsouth.net/p/s/community.dll?ep=87&subpageid=147273&ck=

Thanks for your consideration.

Gordon - KB4LA

3736. Re: Frequency counter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-11 13:40:59 UTC
From: el lector se guarda <dlg@pero.net>
Message-ID: <MJ4oc.17653$k24.7024@fed1read01>
Source record: 26172

Take a look at URL:
http://www.aade.com/DFD4A/dfd4a.htm
Tis from URL:
http://www.aade.com/#dfd

More kits to look at -- at URL:
http://ac6v.com/kits.htm

--
el lector se guarda

Amateur Radio is the best back-up
communications system in the world,
and that's the way it is. Walter Cronkite

"Mike Burch" <mburch46@mchsi.com> wrote in message
news:bdZnc.24361$iF6.2538606@attbi_s02...
> Hi Fella's,
>
> I would like to add a small frequency counter to the front of my
> heathkit IG-102 signal generator. Its the old tube model with the gray
> front. The counter would have to go to just 110 mhz, be small and have
> an led display but lcd would be an acceptable second.
> Do any of you have any recommendations on kits?
> Thanks in advance for any input.
>
> Mike Burch K8MB
>
> Apache Junction AZ
>

3737. calculate RF choke?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-11 15:16:12 UTC
From: Tim <baileythebum@yahoo.com>
Message-ID: <q-Kdne655Oqlcz3dRVn-tw@comcast.com>
Source record: 26173

I'm sure this is in the handbook, but darned if I can find it.

I'm using a MAR-6 after a DDS and filtered output for a little gain into a passive mixer, the DDS will be used for 1-30 MHz or so, how do I calculate the value of the RF choke at the DC supply side? I hope this question is at least coherent...

Tim ka8ddz

3738. Re: calculate RF choke?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-11 17:36:12 UTC
From: Leon Heller <leon_heller@hotmail.com>
Message-ID: <40a10f0d$0$25329$cc9e4d1f@news-text.dial.pipex.com>
Source record: 26174

"Tim" <baileythebum@yahoo.com> wrote in message
news:q-Kdne655Oqlcz3dRVn-tw@comcast.com...
> I'm sure this is in the handbook, but darned if I can find it.
>
> I'm using a MAR-6 after a DDS and filtered output for a little gain into a
> passive mixer, the DDS will be used for 1-30 MHz or so, how do I calculate
> the value of the RF choke at the DC supply side? I hope this question is
at
> least coherent...

It's optional, especially at such low frequencies. I wouldn't bother with
it, just use the resistor mentioned in the data sheet.

73, Leon
--
Leon Heller, G1HSM
http://www.geocities.com/leon_heller

3739. Re: N8WWM will not feed his kids

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-11 18:07:50 UTC
From: The Dub Tub <54321ernie@hotmail.com>
Message-ID: <abc75$40a11668$d1cc5ac4$4457@snip.allthenewsgroups.com>
Source record: 26175
Cross-posted to: rec.radio.amateur.policy,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy,rec.radio.cb,rec.radio.swap

"Bada Bing" <BadaBing@implant.com> wrote in message
news:0ab18f87c10fcb8c7f5f71acde219b2e@news.teranews.com...
> What a piece of human trash doud adair tuned out to be.

Very good, Weber, we haven't seen this one before.
You've earned a carrot.

Well? Bend over! :)

3740. Rough guess at these impedances...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-11 18:49:18 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <jq72a0dv7bqm26e7f72bn8alp244odktt1@4ax.com>
Source record: 26176
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

HI

Anyone know or care to guess what the typical impedance of a condenser
mic is?
--

"What is now proved was once only imagin'd." - William Blake, 1793.

3741. Re: Rough guess at these impedances...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-11 19:12:36 UTC
From: John Larkin <jjlarkin@highSNIPlandTHIStechPLEASEnology.com>
Message-ID: <rb92a0d8c9840be0epotnro6s7s26tptg9@4ax.com>
Source record: 26177
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Tue, 11 May 2004 19:49:18 +0100, Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote:

>HI
>
>Anyone know or care to guess what the typical impedance of a condenser
>mic is?

1 / (2*pi*f*c)

John

3742. Re: Rough guess at these impedances...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-11 19:17:03 UTC
From: crusty@usa.net
Message-ID: <8v92a0hg8e62nh2klofao66hi8rqg9qi14@4ax.com>
Source record: 26178
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Tue, 11 May 2004 19:49:18 +0100, Paul Burridge <pb@notthisbit.osiris1.co.uk>
wrote:

>HI
>
>Anyone know or care to guess what the typical impedance of a condenser
>mic is?

I'll assume you mean an electret type microphone? I don't know of anyone who
makes a condensor microphone anymore. Those things take 500 volts of extremely
well filtered DC and the impedance is purely the capacitance of the plates.
Crooners hated them in the old days because if the stage electrician screwed up,
they could get the entire 500 volts on their lips as they 'kissed' the
microphone.

Figure 2.2k to 4.7k for electrets with three wires. On two wire types, set the
impedance with the bias resistor size. You can get more sensitivity by
increasing the drain resistor, but you sacrifice high frequency response and
dynamic range if you go too far with it.

3743. Re: Rough guess at these impedances...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-11 19:28:31 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <h0a2a054jtpi0hc3m8jjvt0qgi5ihkci39@4ax.com>
Source record: 26179
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Tue, 11 May 2004 19:49:18 +0100, Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote:

>HI
>
>Anyone know or care to guess what the typical impedance of a condenser
>mic is?

Electret or straight RC?

--
John Fields

3744. Re: calculate RF choke?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-11 21:53:27 UTC
From: maxfoo <maxfooHeadFromButt@punkass.com>
Message-ID: <s6i2a0p3vequrk1r2ogc2btn90ss53due0@4ax.com>
Source record: 26180

On Tue, 11 May 2004 11:16:12 -0400, "Tim" <baileythebum@yahoo.com> wrote:

>I'm sure this is in the handbook, but darned if I can find it.
>
>I'm using a MAR-6 after a DDS and filtered output for a little gain into a
>passive mixer, the DDS will be used for 1-30 MHz or so, how do I calculate
>the value of the RF choke at the DC supply side? I hope this question is at
>least coherent...
>
>Tim ka8ddz
>

Read their appnote on biasing mmic amps...
http://www.minicircuits.com/appnote/an60010.pdf

Remove "HeadFromButt", before replying by email.

3745. Epiphyte

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-11 22:09:42 UTC
From: Bob Liesenfeld <wb0poq@visi.com>
Message-ID: <40A14F26.C5BB8250@visi.com>
Source record: 26181

Gang,
Anyone know where I can find a schematic of any or all of the versions
of this qrp ssb rig? Thanks.

Bob WB0POQ

3746. Re: Rough guess at these impedances...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-11 22:40:32 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <a0l2a05t4rerpl3j0i0qqlg0q8q3huegtg@4ax.com>
Source record: 26182
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On Tue, 11 May 2004 14:28:31 -0500, John Fields
<jfields@austininstruments.com> wrote:

>On Tue, 11 May 2004 19:49:18 +0100, Paul Burridge
><pb@notthisbit.osiris1.co.uk> wrote:
>
>>HI
>>
>>Anyone know or care to guess what the typical impedance of a condenser
>>mic is?
>
>---
>Electret or straight RC?

Electret. Someone told me they're also now available with a SMD
transistor amp built-on.
Just a ball-park figure would suffice.

--

"What is now proved was once only imagin'd." - William Blake, 1793.

3747. Re: Rough guess at these impedances...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-11 23:09:54 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <cum2a0tm4btnrbb8tofvrtq59dgqvbnksj@4ax.com>
Source record: 26183
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

```
On Tue, 11 May 2004 23:40:32 +0100, Paul Burridge
<pb@notthisbit.osiris1.co.uk> wrote:

>On Tue, 11 May 2004 14:28:31 -0500, John Fields
><jfields@austininstruments.com> wrote:
>
>>On Tue, 11 May 2004 19:49:18 +0100, Paul Burridge
>><pb@notthisbit.osiris1.co.uk> wrote:
>>
>>>HI
>>>
>>>Anyone know or care to guess what the typical impedance of a condenser
>>>mic is?
>>
>>---
>>Electret or straight RC?
>
>Electret. Someone told me they're also now available with a SMD
>transistor amp built-on.
>Just a ball-park figure would suffice.

---
Roughly the value of the load resistor, but take a look at this:

http://www.hut.fi/Misc/Electronics/circuits/microphone_powering.html

--
John Fields
```

3748. Re: AL Magnet Wire?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-11 23:56:59 UTC
From: "Leland C. Scott" <kc8ldo@arrl.net>
Message-ID: <9q2dnb3l4tbU9TzdRVn_iw@comcast.com>
Source record: 26184

Can't you just up the frequency of the converter a bit? That would reduce the flux density in the transformer, or the filter choke inductance, depending on the type of converter you use. A reduced flux density would allow the use of smaller cross section magnetics and less turns of wire. The net result is a saving in weight and cost. Then you may consider the use of copper wire. The wire losses only go up as the square root of the frequency for solid wire, and the wire resistance is primarily determined by skin effect once you get up past a few KHz in frequency. In fact you will have less total losses using copper Litz wire of a size smaller than using solid aluminum wire.

If your current requirements are low you can "manufacture" your own small gage Litz wire of sorts by twisting together a number of strands of fine solid round magnet wire. The size of the wire strands depends on the frequency of the current the wire must carry. If your requirements are real small some of the Litz wire manufactures may have some left over scrap of a type you can use they would sell you.

http://www.mwswire.com/litzmain.htm
http://www.litz-wire.com/
http://www.dartmouth.edu/~sullivan/litzwire/litz.html (Litz wire theory, solor powered car app.)

--
Leland C. Scott
KC8LDO

Wireless Network
Mobile computing
on the go brought
to you by Micro$oft

<pbreed@netburner.com> wrote in message
news:mfii909vknilaabi7o0gfejsoujum2p8af@4ax.com...
> Aluminum is the lowest weight conductor.
> Copper, Silver and Gold have lower drop per unit area, but
>
> Al is the lightest.
>
>
> 12Ga suqare Al has 2.260 ohms per K ft.
> Weighs 7.28 lbs per K ft.
>
> 14 Ga Cu has 2.239 ohms per Kft
> 1Kft weighs 14.99lbs
>

>
> 6% more resistance at half the weight.
>
> From the same chart
> 11 Ga Al has 1,755 ohms and a wt of 9.237
>
> See:
>
> http://www.mwswire.com/square.htm
>
> I can buy wire from these guys' but they have a $100.00 minimum per line
item.
>
> Paul
>
>
>
>
> On Wed, 05 May 2004 13:05:05 -0700, Tim Wescott
<tim@wescottnospamdesign.com> wrote:
>
> >pbreed@netburner.com wrote:
> >
> >> I'ts a power converter for my Solar RC plane.
> >> The inductors and the wires carying the current to the motor are a
> >> significant part of the power system weight.
> >>
> >> Paul
> >>
> >>
> >>
> >> On Wed, 05 May 2004 10:21:14 -0700, Tim Wescott
<tim@wescottnospamdesign.com> wrote:
> >>
> >>
> >>>pbreed@netburner.com wrote:
> >>>
> >>>>Anyone know where I can find/ purchase a small qualtity
> >>>>(Or any quantity) of Aluminum Magnet Wire?
> >>>>
> >>>>Looking for 12 or 14 Ga AL magnet wire, square would be better, round
is acceptable.
> >>>>
> >>>>Paul (Kl7JG)
> >>>
> >>>Why? It's way less conductive than copper, so unless you're making an
> >>>air-wound coil that needs to save a few ounces I can't see how you'd
> >>>save anything using Al over Copper.
> >>>
> >>>But I'm willing to be educated.

> >>
> >>
> >
> >I suspect that you have a choice between (a) losing more power to
> >resistive losses because of the lower conductivity of aluminum or (b)
> >_increasing_ the weight of your power converter because you've increased
> >the core size to save on resistive losses. You may be able to do better
> >with _silver_ wire and a smaller core, for all I know.
> >
> >This doesn't mean that you shouldn't make the attempt, I'm just
> >wondering if you've taken all the variables into account.
> >
> >Have you already pushed the switcher frequency up to insane levels?
> >Looked into resonant topologies, all that stuff?
>

3749. frequency counter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 00:02:51 UTC
From: Richard Tunstall <rich@tunstall11.fsnet.co.uk>
Message-ID: <c7rpiital1@newsg2.svr.pol.co.uk>
Source record: 26185

have a look at the unicounter by ron stone in qst.
when i first saw it (a 1-digit freq counter) i thought what a useless
idea!!!!!
when i saw a morse person in the radio club enthusing over a morse freq
read-out i went back to the uni-counter
read it again, made one, and then e-mailed ron s to apologise for writing
off his handy-work so unjustly!!!
it is SUPERB!!!

3750. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 00:07:16 UTC
From: "Leland C. Scott" <kc8ldo@arrl.net>
Message-ID: <ZqidneOB_5gv9zzdRVn_iw@comcast.com>
Source record: 26186
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Look at this example for starters.

http://www.picks.force9.co.uk/throb.htm

--
Leland C. Scott
KC8LDO

Wireless Network
Mobile computing
on the go brought
to you by Micro$oft

"Paul Burridge" <pb@notthisbit.osiris1.co.uk> wrote in message
news:mjeh9093ioe56ucglp5ubcbeqa1l945usl@4ax.com...
> Hi all,
>
> I was thinking about having a go at contriving (I won't say
> "designing" for obvious reasons) a class 'C' RF amp using MOSFETs
> instead of the usual BJTs/toobz. They seem - on the face of it at
> least - ideally suited to the task. I'm just a bit concerned about
> whether even the fastest ones would be fast enough, even given
> adequate gate drive. I'd be surprised if they weren't good for at
> least a few Mhz., but am quite frankly clueless as to MUF. Anyone
> know?
>
> Thanks,
>
> p.
> --
>
> The BBC: licenced at public expense to spread lies.

3751. Re: Rough guess at these impedances...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 00:44:18 UTC
From: k7itm@aol.com
Message-ID: <3200347.0405111644.6069708a@posting.google.com>
Source record: 26187
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Paul Burridge <pb@notthisbit.osiris1.co.uk> wrote in message
news:<jq72a0dv7bqm26e7f72bn8alp244odktt1@4ax.com>...
> HI
>
> Anyone know or care to guess what the typical impedance of a condenser
> mic is?

Generally within an order of magnitude of 1e12/s. Or did you mean an
electret with built-in amplifier? Two wire, or three? ... Do a
Google search for "electret microphone impedance."

Cheers,
Tom

3752. Re: calculate RF choke?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 00:50:13 UTC
From: k7itm@aol.com
Message-ID: <3200347.0405111650.73abe594@posting.google.com>
Source record: 26188

"Tim" <baileythebum@yahoo.com> wrote in message
news:<q-Kdne655Oqlcz3dRVn-tw@comcast.com>...
> I'm sure this is in the handbook, but darned if I can find it.
>
> I'm using a MAR-6 after a DDS and filtered output for a little gain into a
> passive mixer, the DDS will be used for 1-30 MHz or so, how do I calculate
> the value of the RF choke at the DC supply side? I hope this question is at
> least coherent...

Leon's response is a quick, practical solution for you, but if you'd
like more details go to the source. Minicircuits has applications
info online. See for example
http://www.minicircuits.com/appnote/an60010.pdf

Cheers,
Tom

3753. DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 01:49:44 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <Tjfoc.523$U4.239@bignews6.bellsouth.net>
Source record: 26189

For those trying to solder those TSSOP and TQFP AD chips into a circuit I found this site on the net

http://aprilog.com/perl/main.pl

They sell adaptors to solder the chip onto to plug into standard dip sockets.

There are other types of breadboard circuit boards for these chips as well. Search on google for "TSSOP breadboard" or "TQFP breadboard".

Now that I see it might be possible I'm going to try and make use of those 9954 and 9851 chips I got as samples. The 9932 looks interresting too, with it's low power. I also want to get a sample of the 9834, now THAT's a low power chip, perfect for QRP.

Anybody have any 'war stories' about using these DDS chips in a rig as a vfo?

3754. Re: DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 02:35:58 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <i4goc.50223$wY.2130@nwrdny03.gnilink.net>
Source record: 26190

I think the problem with these is going to be placing the bypass caps close
enough to the chip, and also getting good low-impedance RF ground paths.
For just a little more money, you can buy an entire DDS board with all parts
from NJQRP.

Let us know how you make out.

Joe
W3JDR

"Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:Tjfoc.523$U4.239@bignews6.bellsouth.net...
> For those trying to solder those TSSOP and TQFP AD
> chips into a circuit I found this site on the net
>
> http://aprilog.com/perl/main.pl
>
> They sell adaptors to solder the chip onto to plug
> into standard dip sockets.
>
> There are other types of breadboard circuit boards
> for these chips as well. Search on google for
> "TSSOP breadboard" or "TQFP breadboard".
>
> Now that I see it might be possible I'm going to try
> and make use of those 9954 and 9851 chips I got as
> samples. The 9932 looks interresting too, with it's
> low power. I also want to get a sample of the 9834,
> now THAT's a low power chip, perfect for QRP.
>
> Anybody have any 'war stories' about using these DDS
> chips in a rig as a vfo?

3755. Voltage calibration source needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 02:58:57 UTC
From: Gary Schafer <gaschafer@comcast.net>
Message-ID: <1m43a0hqsvgvvbrt93qa4353lua35dl57e@4ax.com>
Source record: 26191

I am looking for an accurate voltage source around 12 volts to use to
check calibration on digital voltmeters. .01% would be nice.

Does anyone know about the 3 terminal voltage reference chips
available? Would they do the job?

Thanks for any help.
Gary K4FMX

3756. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 03:42:20 UTC
From: sdlomi2 <sdlomi2spamfree@yahoo.com>
Message-ID: <10a378qsllied89@corp.supernews.com>
Source record: 26192
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

"Alan Horowitz" <alanh_27@yahoo.com> wrote in message
news:1e3670a7.0405061303.3f608231@posting.google.com...
> ET onboard a ship. Have decided after time to have own tools. Got
> them packed into one of those larger wheel-around, pull-the-handle-out
> check-in hard-shell Samsonites. Ends up being a bit heavy, cause of
> tool junkie genetic coding.
>
> Works great..... except when have to go up or down ladderwells
> ("stairs", to you land pukes)
>
> Better approach?
Got room for a furniture-moving dolly(hand-truck?), the one with the
v-like belts that revolve on each step? s

3757. Help identifying devices

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 03:48:47 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <z8hoc.81184$Xj6.1362134@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26193

I got a couple of stripline boards at a hamfest that contain what I believe are MMICs but I think they're house-numbered. Both are blue, and have Motorola logos. One appears to be marked "11L37" and the other "11L66." I posted pix here:
http://tinyurl.com/27mom (just a basic HTML page and 2 jpegs of the devices).

Thanks for any help in identifying these devices and pointers to datasheets.

73,

"PM"

3758. Re: DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 04:50:02 UTC
From: John Miles <jmiles@pop.removethistomailme.net>
Message-ID: <MPG.1b0b4cd1d5b79f009896b4@news-central.giganews.com>
Source record: 26194

In article <Tjfoc.523$U4.239@bignews6.bellsouth.net>,
wa2mzeNOTTHIS@bellsouth.net says...
> For those trying to solder those TSSOP and TQFP AD
> chips into a circuit I found this site on the net
>
> http://aprilog.com/perl/main.pl
>
> They sell adaptors to solder the chip onto to plug
> into standard dip sockets.
>
> There are other types of breadboard circuit boards
> for these chips as well. Search on google for
> "TSSOP breadboard" or "TQFP breadboard".
>
> Now that I see it might be possible I'm going to try
> and make use of those 9954 and 9851 chips I got as
> samples. The 9932 looks interresting too, with it's
> low power. I also want to get a sample of the 9834,
> now THAT's a low power chip, perfect for QRP.
>
> Anybody have any 'war stories' about using these DDS
> chips in a rig as a vfo?
>

The Aprilog adaptors do work. I've used them on both AD9852/AD9854 chips and ATmega128 chips. Drawbacks are: 1) they aren't exactly free; and 2) Aprilog can be a little quirky to deal with at times, although they've always come through for me in the end. (I think it's a one- or two-man shop that sometimes gets overwhelmed with business.) They will sometimes cut you a good deal on slightly-nonstandard stock.

They are certainly preferable to hand-soldering. I'd say give 'em a try with the 9900-series DDS parts and report back to let us know your results.

-- jm

---
http://www.qsl.net/ke5fx
Note: My E-mail address has been altered to avoid spam

3759. Re: Rough guess at these impedances...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 06:25:09 UTC
From: Walter Harley <walterh@cafewalterNOSPAM.com>
Message-ID: <c7sg05$ot5$0@216.39.172.65>
Source record: 26195
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"Paul Burridge" <pb@notthisbit.osiris1.co.uk> wrote in message
news:jq72a0dv7bqm26e7f72bn8alp244odktt1@4ax.com...
> Anyone know or care to guess what the typical impedance of a condenser
> mic is?

Easiest way to answer that would be to go look at some manufacturer specs.

I'll ignore the distinction between electret and condensor and going with common usage, and assume, without justification, that you are talking about the output impedance at the XLR connector of a balanced mic. In other words: you want to know what the output impedance of, say, a Shure SM87 or an Audio-Technica AT4033 is. Answer, based on a quick nonsystematic sample: about 100 ohms on average.

But I'm not sure why you care. Like the rest of pro audio, they're not intended to be loaded by an equal impedance. Generally they want to see around 1k.

As others have noted, this has nothing whatsoever to do with the impedance of the actual mic element, which is basically a capacitor with a fixed charge on it.

3760. Filter Design/Analysis program FREE with powerful crystal ladder designs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 06:40:07 UTC
From: Neil <neil@aade.com>
Message-ID: <bFjoc.16639$UQ.956283@attbi_s51>
Source record: 26196

AADE Filter Design is now FREE.
The latest version includes some very interesting crystal ladder filters
using identical crystals.
Both upper and lower sideband filters.
Matched USB and LSB from the same crystal frequency.

To view a short article about these crystal filters see
http://www.aade.com/filter32/dishal.htm

To download the program see: http://www.aade.com/filter32/download.htm

Neil (The L/C Meter IIB guy)
Almost All Digital Electronics

3761. DSP

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 07:45:29 UTC
From: Adrina <cor@ews.com>
Message-ID: <MPG.1b0b75f95f53bc6c989680@corp.supernews.com>
Source record: 26047

Does anyone know of a source that either sells plans for or kit to build a dsp for amatuer radio?. Specifically , I would like to use it in conjunction with a shortwave receiver. If so, would you please post the information. TIA.

3762. Re: Epiphyte

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 08:46:20 UTC
From: mike@corn2.freeserve.co.uk
Message-ID: <40a1e420.167979266@news.freeserve.net>
Source record: 26048

On Tue, 11 May 2004 17:09:42 -0500, Bob Liesenfeld <wb0poq@visi.com>
wrote:

>Gang,
> Anyone know where I can find a schematic of any or all of the versions
>of this qrp ssb rig? Thanks.
>
>Bob WB0POQ
>
have a look on the G-Qrp website. there is a diagram of the mk3 there
somewhere.

3763. Re: Rough guess at these impedances...

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 09:42:38 UTC
From: Paul Burridge <pb@notthisbit.osiris1.co.uk>
Message-ID: <sir3a0tfp4ma85626859np9us7236v13tf@4ax.com>
Source record: 26049
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

On 12 May 2004 06:25:09 GMT, "Walter Harley"
<walterh@cafewalterNOSPAM.com> wrote:

>"Paul Burridge" <pb@notthisbit.osiris1.co.uk> wrote in message
>news:jq72a0dv7bqm26e7f72bn8alp244odktt1@4ax.com...
>> Anyone know or care to guess what the typical impedance of a condenser
>> mic is?
>
>Easiest way to answer that would be to go look at some manufacturer specs.
>
>I'll ignore the distinction between electret and condensor and going with
>common usage, and assume, without justification, that you are talking about
>the output impedance at the XLR connector of a balanced mic. In other
>words: you want to know what the output impedance of, say, a Shure SM87 or
>an Audio-Technica AT4033 is. Answer, based on a quick nonsystematic sample:
>about 100 ohms on average.
>
>But I'm not sure why you care. Like the rest of pro audio, they're not
>intended to be loaded by an equal impedance. Generally they want to see
>around 1k.
>
>As others have noted, this has nothing whatsoever to do with the impedance
>of the actual mic element, which is basically a capacitor with a fixed
>charge on it.

Thanks, but I appreciate that, Walter. This is simply for simulation
purposes. I just need to have a value to bung in the signal source box
or the gain of this amp stage will not be meaningfully calculable.

--

"What is now proved was once only imagin'd." - William Blake, 1793.

3764. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 12:13:45 UTC
From: charles.k.scott@ddddartmouth.edu
Message-ID: <j254a0tg6erbmuu1q5jkmekkoluinpl150@4ax.com>
Source record: 26051
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

On Tue, 11 May 2004 23:42:20 -0400, "sdlomi2"
<sdlomi2spamfree@yahoo.com> wrote:

>
>"Alan Horowitz" <alanh_27@yahoo.com> wrote in message
>news:1e3670a7.0405061303.3f608231@posting.google.com...
>> ET onboard a ship. Have decided after time to have own tools. Got
>> them packed into one of those larger wheel-around, pull-the-handle-out
>> check-in hard-shell Samsonites. Ends up being a bit heavy, cause of
>> tool junkie genetic coding.
>>
>> Works great..... except when have to go up or down ladderwells
>> ("stairs", to you land pukes)
>>
>> Better approach?
> Got room for a furniture-moving dolly(hand-truck?), the one with the
>v-like belts that revolve on each step? s

There are hand trucks with electric motors on them that drive grips
that allow it to climb stairs. You just get the truck in position,
push the button and the electric motor (geared way down) takes the
load up or down the stairs.

Would that work for you?

Corky Scott

3765. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 12:25:10 UTC
From: rip <r*nospam*quinby@snet.net>
Message-ID: <GIooc.1073$hO7.328@newssvr16.news.prodigy.com>
Source record: 26050
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

Order a set of Type II antigravs. One pair should do it easily.
Federation StarFleet FSCM code 345273FW98DHRT53M598G0937DFG4456.

Alan Horowitz wrote:
> ET onboard a ship. Have decided after time to have own tools. Got
> them packed into one of those larger wheel-around, pull-the-handle-out
> check-in hard-shell Samsonites. Ends up being a bit heavy, cause of
> tool junkie genetic coding.
>
> Works great..... except when have to go up or down ladderwells
> ("stairs", to you land pukes)
>
> Better approach?

3766. Re: DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 13:02:12 UTC
From: xpyttl <xpyttl_NOSPAM@earthling.net>
Message-ID: <10a4833pehmlv41@corp.supernews.com>
Source record: 26052

"Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:Tjfoc.523$U4.239@bignews6.bellsouth.net...

> Now that I see it might be possible I'm going to try
> and make use of those 9954 and 9851 chips I got as
> samples. The 9932 looks interresting too, with it's
> low power. I also want to get a sample of the 9834,
> now THAT's a low power chip, perfect for QRP.

Well, don't be too excited just yet. Even though the chips themselves might be on a diet, they need a high frequency oscillator to get a decent waveform out. Those little oscillator cans start to draw amazing amounts of current when the frequency creeps up. Heck, the ocsillator on my 9850 DDS draws more current by itself than an entire K1.

FAR circuits has a DDS board that is a little more complete than the NJQRP dauhtercard, if that's what you are looking for, but the quality of that board has been pretty bad. I know they are trying to improve it, but I can't say I've been impressed with the results. On the other hand, they do have prototyping boards that are quite nice. I picked up a few at a hamfest this past fall that are pretty decent for the TSSOP DDS parts. And they are a LOT cheaper than the individual adapters. However, their online catalog doesn't have the selection they had at the hamfest, so maybe a call to them would be in order.

The NJQRP daughtercard really does reduce the pain of all this, but both the daughtercard and the FAR circuits DDS card are for the 9850, which is getting a little stale. Sounds like you want to play with some newer stuff.

Also take a peek at some of the TI stuff. They have synthesizers and "transmitter" chips that are very reasonably priced. Although they are intended for very high frequencies, Steve Weber has made them work down into more reasonable frequencies, and prescalers are only a couple of bucks.

..

3767. Re: DSP

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 13:10:56 UTC
From: xpyttl <xpyttl_NOSPAM@earthling.net>
Message-ID: <10a48jf3mp1tqb9@corp.supernews.com>
Source record: 26053

SGC www.sgcworld.com has such a critter. It's a tad on the pricey side, though. Seems like they had them for sale at Dayton last year, but the web site says coming soon.

..

"Adrina" <cor@ews.com> wrote in message news:MPG.1b0b75f95f53bc6c989680@corp.supernews.com...
> Does anyone know of a source that either sells plans for or kit to build
> a dsp for amatuer radio?. Specifically , I would like to use it in
> conjunction with a shortwave receiver. If so, would you please post the
> information. TIA.

3768. Kit for Making PCB for SMT component

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 13:24:11 UTC
From: localbuyer@yahoo.com
Message-ID: <1adb15bb.0405120524.1be3782c@posting.google.com>
Source record: 26054

Hi:

I am interested in making a simple circuit with SMT components since the IC used comes only in SMT form. Can anyone suggest a kit that can make PCB which is good for SMT component?

Thanks

3769. Re: DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 14:30:45 UTC
From: PaoloC <ollollo@hotpop.com>
Message-ID: <2geqojF1udckU1@uni-berlin.de>
Source record: 26055

xpyttl wrote:

Hi

> Also take a peek at some of the TI stuff. They have synthesizers and
> "transmitter" chips that are very reasonably priced. Although they are
> intended for very high frequencies, Steve Weber has made them work down into
> more reasonable frequencies, and prescalers are only a couple of bucks.

Do you have any reference to Weber's project? I would love to have a
look at that circuit!

BTW, do you mean SteveN Weber, KD1JV?

Thanks,
Paolo IK1ZYW

3770. Re: Kit for Making PCB for SMT component

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 14:34:18 UTC
From: tim gorman <tgorman2@cox.net>
Message-ID: <alct7c.vbj.ln@tg6124.ab0wr.net>
Source record: 26056

If you are making a small number of prototype boards, go to the digikey site and look for "surfboards". They come in various configurations and by using something like wirewrap wire for jumpers between pads a lot of different circuits can be made up quickly. I wouldn't recommend this arrangement for upper rf but anything below 10mhz would probably work ok.

tim ab0wr

Localbuyer wrote:

>
>
> Hi:
>
> I am interested in making a simple circuit with SMT components since
> the IC used comes only in SMT form. Can anyone suggest a kit that can
> make PCB which is good for SMT component?
>
>
> Thanks

3771. Re: Kit for Making PCB for SMT component

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 15:21:21 UTC
From: Leon Heller <leon_heller@hotmail.com>
Message-ID: <40a240f2$0$20511$cc9e4d1f@news-text.dial.pipex.com>
Source record: 26057

"Localbuyer" <localbuyer@yahoo.com> wrote in message
news:1adb15bb.0405120524.1be3782c@posting.google.com...
> Hi:
>
> I am interested in making a simple circuit with SMT components since
> the IC used comes only in SMT form. Can anyone suggest a kit that can
> make PCB which is good for SMT component?

I use the standard UV exposure technique with artwork printed on a laser
printer for through-hole and SMT parts without any problems. You should find
this Yahoo group very useful:

http://groups.yahoo.com/group/Homebrew_PCBs/

Leon

3772. Re: Voltage calibration source needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 16:22:02 UTC
From: Bob <balbert@ecrii.com>
Message-ID: <mK2dndl6tOeVzT_dRVn2hg@hawaiian.net>
Source record: 26058

Yes the three terminal references should work just fine for you. I have tried some of them and they are great, right on the button.

Hook up two of them and measure the difference with a sensitive voltmeter. They are very close.

Bob

3773. Re: Epiphyte

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 18:12:01 UTC
From: farhan@phonestack.com
Message-ID: <fcc11bcf.0405121012.6df1478b@posting.google.com>
Source record: 26059

check out http://farhan.net.co.nr/
i have described a two band qrp transceiver.
you might have to redo the coils using toroids if you are in the usa.
- farhan

3774. Re: Epiphyte

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 18:16:53 UTC
From: farhan@phonestack.com
Message-ID: <fcc11bcf.0405121016.29413d38@posting.google.com>
Source record: 26060

check out http://farhan.net.co.nr/
i have described a two band qrp transceiver.
you might have to redo the coils using toroids if you are in the usa.
- farhan

3775. Re: Frequency counter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 19:15:58 UTC
From: Mike Burch <mburch46@mchsi.com>
Message-ID: <OJuoc.547$1q3.46828@attbi_s51>
Source record: 26061

Thank you,

That looks perfect.

Mike
>

3776. Re: DSP

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 19:50:41 UTC
From: "G.Beat" <now9spamgb@no.comcast.spam.net>
Message-ID: <levoc.34897$z06.5465406@attbi_s01>
Source record: 26062

"Adrina" <cor@ews.com> wrote in message
news:MPG.1b0b75f95f53bc6c989680@corp.supernews.com...
> Does anyone know of a source that either sells plans for or kit to build
> a dsp for amatuer radio?. Specifically , I would like to use it in
> conjunction with a shortwave receiver. If so, would you please post the
> information. TIA.

You should also look at Lyle Johnson's (KK7P) web page:
http://www.fidalgo.net/~wa7gxd/

Lyle uses the Analog ADSP-2185N DSP chip on a small PC board.
This has successfully been used as an audio DSP with the Elecraft K2 and
the Software Defined Radio DSP-10 by Bob Larkin, W7PUA.

Lyle has an interface board and a number of programs appear in the ARRL book
" Experimental Methods in RF Design", Chapters 10 and 11.
He had updates on the use of the KDSP10 and DSPx in conjunction with this
book.
http://www.fidalgo.net/~wa7gxd/kdsp10.html

Good luck !

Greg
w9gb

3777. Re: Voltage calibration source needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 21:02:15 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <QvmdnSJkvPKfDT_dRVn-iQ@comcast.com>
Source record: 26063

0.01% of 12V is 1.2mV, most 3 terminal references have noise which is much greater than this. Something like a Linear Tech LT1963A will get you into the tens of uV -- but all the associated components have to be tightly wound.

If you go into the Linear TEchnology webiste (www.linear.com) and look at the application notes there is an article by Jim Williams which describes a 20 bit DAC -- too complicated to get into here -- what you can do with one of these DAC's would take a Fluke 3330B calibrator two decades ago. www.linear.com/pub/document.html?pub_type=app&document=92

If you are going to calibrate DVM's you'll find some real bargains on EBay under the business equipment/test equipment/calibrator section. It helps if you have a university with a well equipped lab -- you can compare purchases with standardized equipment.

"Gary Schafer" <gaschafer@comcast.net> wrote in message news:1m43a0hqsvgvvbrt93qa4353lua35dl57e@4ax.com...
> I am looking for an accurate voltage source around 12 volts to use to
> check calibration on digital voltmeters. .01% would be nice.
>
> Does anyone know about the 3 terminal voltage reference chips
> available? Would they do the job?
>
> Thanks for any help.
> Gary K4FMX

3778. Re: Kit for Making PCB for SMT component

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 21:12:39 UTC
From: k7itm@aol.com
Message-ID: <3200347.0405121312.5050c41a@posting.google.com>
Source record: 26064

localbuyer@yahoo.com (Localbuyer) wrote in message
news:<1adb15bb.0405120524.1be3782c@posting.google.com>...
> Hi:
>
> I am interested in making a simple circuit with SMT components since
> the IC used comes only in SMT form. Can anyone suggest a kit that can
> make PCB which is good for SMT component?

If you're only planning to do one board, you might consider saving the hassle of trying to do it yourself and getting it wrong several times before having success, and using a place like www.expresspcb.com. They provide layout software, even.

I can tell you that the boards that DigiKey sells, and that Circuit Specialists sell, both can be made to work well with SMT parts. I have no trouble with 10 mil traces and spaces, and can do 5 mil if I'm careful, printing the pattern on transparency material with an ink jet printer (in "high quality" mode). I suppose the complete kits they sell would be enough to do the job. You'll need a way to get the layout into a clean transparency.

There have been a LOT of articles on the r.r.a.h. and sci.electronics.design newsgroups about making your own boards over the years. Do a search of the archives (e.g. with Google). There are also a few good web sites. www.thinktink.com is one I like ("PCB Process" on the left side of the home page...); just use what you need and don't go overboard.

Cheers,
Tom

3779. Dolby Digital decoder

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-12 22:30:11 UTC
From: Joel <Joel@cyberbest.com>
Message-ID: <_zxoc.36$al.16@fe25.usenetserver.com>
Source record: 26065

We have a old surround sound 5.1 amp/speaker combination. It does not support Dolby Digital. Every junk DVD player these days has Dolby Digital out. So I need to build a Dolby Digital decoder in to 5.1 out. I can buy a complete receiver that includes the decode and amp. But I don't want that. The PC gang have just the decoders I would need. As the DVD players on the PC's and this card decode the Dolby Digital and have 5.1 out.

It seems to me there must be a schematic or kit to build a hardware Dolby Digital to 5.1 decoder.

Any have any experience like that?

Joe AG4QC

3780. Re: DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-13 00:30:35 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <Mbzoc.3103$yF6.76@bignews5.bellsouth.net>
Source record: 26066

xpyttl wrote:
> "Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
> news:Tjfoc.523$U4.239@bignews6.bellsouth.net...
>
>
>>Now that I see it might be possible I'm going to try
>>and make use of those 9954 and 9851 chips I got as
>>samples. The 9932 looks interresting too, with it's
>>low power. I also want to get a sample of the 9834,
>>now THAT's a low power chip, perfect for QRP.
>
>
> Well, don't be too excited just yet. Even though the chips themselves might
> be on a diet, they need a high frequency oscillator to get a decent waveform
> out. Those little oscillator cans start to draw amazing amounts of current
> when the frequency creeps up. Heck, the ocsillator on my 9850 DDS draws
> more current by itself than an entire K1.
>
> FAR circuits has a DDS board that is a little more complete than the NJQRP
> dauhtercard, if that's what you are looking for, but the quality of that
> board has been pretty bad. I know they are trying to improve it, but I
> can't say I've been impressed with the results. On the other hand, they do
> have prototyping boards that are quite nice. I picked up a few at a hamfest
> this past fall that are pretty decent for the TSSOP DDS parts. And they are
> a LOT cheaper than the individual adapters. However, their online catalog
> doesn't have the selection they had at the hamfest, so maybe a call to them
> would be in order.
>
> The NJQRP daughtercard really does reduce the pain of all this, but both the
> daughtercard and the FAR circuits DDS card are for the 9850, which is
> getting a little stale. Sounds like you want to play with some newer stuff.
>
> Also take a peek at some of the TI stuff. They have synthesizers and
> "transmitter" chips that are very reasonably priced. Although they are
> intended for very high frequencies, Steve Weber has made them work down into
> more reasonable frequencies, and prescalers are only a couple of bucks.
>
I haven't found a link where you can buy the NJQRP daughtercard, he
seems to have the artwork for downloading but that won't do me much
good. The 9851 seems to be pin compatible with the 9850 and will go
higher in frequency using a lower frequency (lower powered) oscillator.
The 9954 family is much smaller in size than the 9850 family (closer
pin spacing) so dead bug on these would be about impossible, the
circuit board is a must. I found some other bread board adaptors but

the problem is that there can't be any traces UNDER the 9954 because there is a ground pad there. I can carefully cut away the unused portions of one of these (http://www.devrs.com/store/) which is a universal breadboard, drill a hole through the middle and solder a wire to the ground pad. BTW I thought I'd have a problem interfacing to the 9954 because it runs on 1.8v (how to hook it to a 5v 8051?), but the io part of the chip is powered by it's own pin that can run at 3.3v and then it will tolerate 5.5v max on the digital inputs. Problem solved!

BTW many here seem to like PICs, but I'm just more familiar with the 8051 series. IF you don't need external ram or io on the 8031 and and use an external EPROM you still have 16 io lines available, it's then a three chip solution (8031, 74x573, 27x512). There are simulators C compilers and assemblers for the 8051 that run on Linux (don't know about the pics). I DO wish that people that post articles using these micros on the web or in qst would make the SOURCE CODE available!!! Not doing so is like NOT making the SCHEMATIC available for a homebrew article!!!

3781. ** FLEA at MIT ** Sunday May 16th Cambridge MA

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-13 01:02:03 UTC
From: w1gsl@mit.edu
Message-ID: <40a2c90b$0$558$b45e6eb0@senator-bedfellow.mit.edu>
Source record: 26067
Cross-posted to: rec.radio.swap,rec.radio.amateur.misc,rec.radio.info,sci.electronics.misc,ne.forsale,ne.general,rec.radio.amateur.homebrew,rec.radio.amateur.boatanchors

This coming Sunday....

+++ Now even more Buyers Parking !!!
Thanks to TKT we have use of their new parking lot
across Albany St from the SWAPFEST !!!

!! ** More Buyers PARKING is available ** for details see
http://web.mit.edu/w1gsl/Public/flyer

*** !!!! In our Traditional GARAGE and the adjacent lot !!!! ****
so come rain or shine or super heat the Flea is on !!!

********* $1 buyers discount with hardcopy of this notice ********

COMPUTERS - ELECTRONICS - HAM RADIO - COMPUTERS - ELECTRONICS - HAM RADIO

FLEA all SUMMER at MIT
Sunday May 16th 2004
9AM-2PM

Come to the city for a great flea - plenty of free parking.

MIT's electronics and ham radio flea will take
place on the third Sunday of each month this summer,
April thru October.

There is tailgate space for over 600 sellers and
free, off-street parking for >2000 cars!

Buyers admission is $5 (you get $1 off if
you're lucky enough to have a copy of our ad)
and sellers spaces are $20 for the first and
$15 for each additional at the gate.

The flea will be held at the corner of Albany and
Main streets in Cambridge; right in the Kendall
Square area from 9AM to 2PM, with sellers set-up
time starting at 7AM.

*** Attention Sellers ***
Prepaid vendors.. Season Pass or monthly,
will be admitted FIRST.
Separate lines will form prior to gate opening
for prepaid and nonprepaid vendors

!! RAIN or SHINE !! Have no fear of rain, a covered
well illuminated tailgate area is available for all
sellers (6'8" clearance).

Talk-in: 145.23- (PL 88.5) W1BOS/R and
W1XM/R-449.725/444.725 (PL 114.8/2A).

Sponsors: MIT Electronics Research Society
MIT UHF Repeater Association (W1XM)
MIT Radio Society (W1MX)
Harvard Wireless Club (W1AF)

For more info / advanced reservations 617 253 3776

********** $1 buyers discount with hard copy of this notice ************

<<<<<<<<<<<<<<<<<<<<<<< cut here >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>

Mail the coupon below by the 5th of the month to be a Prepaid Vendor.

FLEA at MIT 2004 Rates

SELLERS

This year each vendor must have a Cambridge Vendor License.
We will do all the paperwork to get the one day Cambridge licenses.
To keep the spaces affordable we are discounting your first space.
To use your spaces the named vendor MUST be present.
Rates include one admission per space.

Season Pass $99 First space includes $10 Cambridge Vendor License
$70 Additional spaces
Good for all seven meets this year.
Must be received by April 18th.

Advance $17 First space - includes $10 Cambridge Vendor License
$12 Additional Spaces
Must be received by the 5th of the month.

Gate Admission $20 First Space - includes $10 Cambridge Vendor License
$15 Additional Spaces
Admission is after the prepaid vendors

Early Bird Buyer -Admission after the prepaid vendor line is admitted. ~ 7:15AM
** You may not sell. **
$15 per person at the gate.

****************************** cut here ******************************

FLEA at MIT 2004 Advance Space Application

____April ____May ____June ____ July ____Aug ___Sept ____Oct
@ $17 for the first each month + $12 each additional
____ Season Pass $99 first space $70 each additional

Name _____ Call _____ $ Included_____

Address _____ Phone _____ Make Check to
The MIT Radio Society
City _____ State _____ Zip _____ PO Box 397082
Cambridge MA 02139
E-mail _____

****
Steve Finberg W1GSL w1gsl@mit.edu
PO Box 82 MIT Br Cambridge MA 02139-7082 617 258 3754
****

3782. Re: Need QST article from February 1990

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-13 02:02:06 UTC
From: Roger and Ute Brown <rogerbrown@gci.net>
Message-ID: <10a5pbbna98i44a@corp.supernews.com>
Source record: 26072

Doug,
Don't be so cheap! Get it from the publisher for $3.00 and support your
ARRL.
Roger, KL7Q

Doug Shields <w4das@adelphia.net> wrote in message
news:acf64ed0.0405121804.42d03e2a@posting.google.com...
> Hello all,
> Does anyone have a copy of QST magazine from February of 1990? I
> am looking for a copy or scan of the article about a directional QRP
> wattmeter. Any assistance would be appreciated. Thanks.
>
> Doug W4DAS

3783. Need QST article from February 1990

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-13 02:04:39 UTC
From: w4das@adelphia.net
Message-ID: <acf64ed0.0405121804.42d03e2a@posting.google.com>
Source record: 26068

Hello all,
Does anyone have a copy of QST magazine from February of 1990? I
am looking for a copy or scan of the article about a directional QRP
wattmeter. Any assistance would be appreciated. Thanks.

Doug W4DAS

3784. Re: Need QST article from February 1990

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-13 02:31:02 UTC
From: Joel <Joel@cyberbest.com>
Message-ID: <Q5Boc.53$al.51@fe25.usenetserver.com>
Source record: 26069

I think that's the one by Roy Lewallen. Why not shoot him an e-mail.
w7el@eznec.com

Also http://www.farcircuits.net/watt2.htm#1watt says it's in ARRL handbook,
Chapter 34 Figure 16

Just a thought.

Joe Loucka AG4QC

"Doug Shields" <w4das@adelphia.net> wrote in message
news:acf64ed0.0405121804.42d03e2a@posting.google.com...
> Hello all,
> Does anyone have a copy of QST magazine from February of 1990? I
> am looking for a copy or scan of the article about a directional QRP
> wattmeter. Any assistance would be appreciated. Thanks.
>
> Doug W4DAS

3785. Re: Voltage calibration source needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-13 02:31:31 UTC
From: artie <silli_artie@nospam.hotmail.com>
Message-ID: <120520041931295965%silli_artie@nospam.hotmail.com>
Source record: 26070

One of my favorite gadgets is the Datel DVC 8500 voltage calibrator.
Small, fairly stable, +/- 19999 mV via thumbwheel switches, plus
trimming. They pop up on eBay aperiodically (one currently listed,
going for $31, and recently calibrated -- a deal. Item 3814748987).

>
> "Gary Schafer" <gaschafer@comcast.net> wrote in message
> news:1m43a0hqsvgvvbrt93qa4353lua35dl57e@4ax.com...
> > I am looking for an accurate voltage source around 12 volts to use to
> > check calibration on digital voltmeters. .01% would be nice.
> >
> > Does anyone know about the 3 terminal voltage reference chips
> > available? Would they do the job?
> >
> > Thanks for any help.
> > Gary K4FMX
>
>

--

3786. Re: Searching a transverter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-13 02:33:30 UTC
From: Globern <Globern@la-neuf.org>
Message-ID: <XnF94E82E5CCF315Globernlaneuf@193.252.19.141>
Source record: 26071

Hi

"AM200" <gt@am200.net> a cru bon de raconter en ce si beau jour
news:MYxmc.149$wA1.147@newsfe2-gui.server.ntli.net:

Thank you for the reply

> CTE International used to make them, but I think the output was 6.6MHz.
> The people that make CB radio equipment.
>
>

Yes but there is nothing on the CTE web site. I think that this rig is
"confidential" and hard to found ;o)

Finally, I will build a monoband transceiver : There are some good kits in
the ham shops...

--
Globern
"Un jour le courage frappe a la porte de la peur et demande :
Qui est la ? La peur r&#65533;pond : La peur. Le courage entre, et il n'y a
personne." Marianne Muguet

3787. Re: surface mount transistor identification..

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-13 03:17:23 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1084445605.179163@smtp-1.griffin.com>
Source record: 26073

thanks

"Tull" <finnostervig@hotmail.com> wrote in message
news:409c9815$0$185$edfadb0f@dread11.news.tele.dk...
>
> "zindazenda" <zen@lineisp.co.uk> skrev i en meddelelse
> news:1083966287.773833@smtp-1.griffin.com...
> > hello..
> >
> > is it possible to id sm transistors by their markings?
> > ie might be marked up 27f2 or f2a etc..
> > if so does anyone know where i might find the"codes"..
> >
> > simon g0zen
> >
>
> Try this link : http://www.tkb-4u.com/code/smdcode/indexsmdcode.php
>
> 73 OZ2FOE
>
>

3788. Re: DSP

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-13 12:02:07 UTC
From: Richard Hosking <richardh@iinet.net.au>
Message-ID: <40A363BF.3010701@iinet.net.au>
Source record: 26076

You may want to have a look at
http://www.nitehawk.com/sm5bsz/linuxdsp/linrad.htm

This is the Linrad home page
Take the output of your Rx and feed it to the computer sound card.
You will have to do a bit of work getting up to speed on Linux if you
are not already familiar. However, the newer Linux distributions are
becoming better than Windows in terms of usability, in my opinion. The
program itself also takes some work to set up. However, you can use a
relatively low power computer eg 400 MHz PII, which are available
cheaply now as your DSP platform.
This is a very sophisticated package which is designed originally for
144 MHz EME.
If you really want to get into it, you could build the hardware as well

Richard

Adrina wrote:
> Does anyone know of a source that either sells plans for or kit to build
> a dsp for amatuer radio?. Specifically , I would like to use it in
> conjunction with a shortwave receiver. If so, would you please post the
> information. TIA.

3789. Re: Need QST article from February 1990

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-13 12:05:06 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <0fGdnX-LHdkB_j7dRVn-hg@comcast.com>
Source record: 26074

If it were September of 1954 there might be an excuse.

Coming from a QRP'r -- who's gonna fight BPL anyway -- they are the ones
most afflicted.

Jack

"Roger and Ute Brown" <rogerbrown@gci.net> wrote in message
news:10a5pbbna98i44a@corp.supernews.com...
> Doug,
> Don't be so cheap! Get it from the publisher for $3.00 and support your
> ARRL.
> Roger, KL7Q
>
> Doug Shields <w4das@adelphia.net> wrote in message
> news:acf64ed0.0405121804.42d03e2a@posting.google.com...
> > Hello all,
> > Does anyone have a copy of QST magazine from February of 1990? I
> > am looking for a copy or scan of the article about a directional QRP
> > wattmeter. Any assistance would be appreciated. Thanks.
> >
> > Doug W4DAS
>
>

3790. Re: Voltage calibration source needed

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-13 12:09:02 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <rMidnZsxdfUU-T7dRVn-sA@comcast.com>
Source record: 26075

I bought a Fluke 3330B for under $50 -- I was stunned that it was in perfect cal -- I just used it for an article that had a microprocessor controlled power supply -- nice to have the Fluke so that you don't have to play around withthe code or worry about a keyboard. It is a beast, however. I bought a second "parts" unit in case anything goes wrong with the first one.

When you play around with these things you begin to purchase high quality cables and connectors. I didn't know a "Seelback" from a humpback!

Jack

"artie" <silli_artie@nospam.hotmail.com> wrote in message news:12052004193129596 5%silli_artie@nospam.hotmail.com...
> One of my favorite gadgets is the Datel DVC 8500 voltage calibrator.
> Small, fairly stable, +/- 19999 mV via thumbwheel switches, plus
> trimming. They pop up on eBay aperiodically (one currently listed,
> going for $31, and recently calibrated -- a deal. Item 3814748987).
>
>
>
>
> >
> > "Gary Schafer" <gaschafer@comcast.net> wrote in message
> > news:1m43a0hqsvgvvbrt93qa4353lua35dl57e@4ax.com...
> > > I am looking for an accurate voltage source around 12 volts to use to
> > > check calibration on digital voltmeters. .01% would be nice.
> > >
> > > Does anyone know about the 3 terminal voltage reference chips
> > > available? Would they do the job?
> > >
> > > Thanks for any help.
> > > Gary K4FMX
> >
> >
>
> --

3791. Re: Kit for Making PCB for SMT component

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-13 12:23:04 UTC
From: xpyttl <xpyttl_NOSPAM@earthling.net>
Message-ID: <10a6q5g2sr50b07@corp.supernews.com>
Source record: 26077

The bloody surfboards don't come in any useful formats.

If you are doing SOIC, you can almost do it manhattan style. A lot of the really interesting parts are in TSSOP. Of course, Surfboard have few TSSOP boards, and the ones they do have are just a few pins. Heck, I can somehow cobble an 8 pin TSSOP, what I need help on are the 24 and 28 pin jobs.

..

"tim gorman" <tgorman2@cox.net> wrote in message
news:alct7c.vbj.ln@tg6124.ab0wr.net...
> If you are making a small number of prototype boards, go to the digikey
site
> and look for "surfboards". They come in various configurations and by
using
> something like wirewrap wire for jumpers between pads a lot of different
> circuits can be made up quickly. I wouldn't recommend this arrangement for
> upper rf but anything below 10mhz would probably work ok.
>
> tim ab0wr
>
> Localbuyer wrote:
>
> >
> >
> > Hi:
> >
> > I am interested in making a simple circuit with SMT components since
> > the IC used comes only in SMT form. Can anyone suggest a kit that can
> > make PCB which is good for SMT component?
> >
> >
> > Thanks
>

3792. Re: DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-13 12:37:22 UTC
From: xpyttl <xpyttl_NOSPAM@earthling.net>
Message-ID: <10a6r0anbvq9mba@corp.supernews.com>
Source record: 26078

I do mean KD1JV. However, I don't think Steve ever wrote anything up. If I recall, he used the TRF4900 which is a "transmitter" - basically a DDS with an amplifier. The 4400 looked a little more interesting to me, same thing, lower frequency. I've been meaning to do something similar for a while now. I had assumed that you needed to operate these parts somewhere near their spec frequency, 900 MHz for the 4900, 450 for the 4400. Steve went right down to 6 meters for his first whack and had no problems.

What is interesting about these is that they are reasonably priced, and the frequency steps are small enough that you are in the neighborhood of a Hz or two after dividing them down to HF, reasonable for a CW rig. They are also easily obtained.

TI also has a series of synthesizer chips, the 2050 and 2052 that seems to be a bit more flexible, but maybe more complicated. All these parts are under five bucks quantity one.

I have to admit, after getting over my shyness over asking AD for samples, the AD parts look a lot more appealing. But I have a few of these TI chips, and I finally got a prototyping board that will work with them, now if I can just get the time to play with them...

..

"PaoloC" <ollollo@hotpop.com> wrote in message
news:2geqojF1udckU1@uni-berlin.de...
> xpyttl wrote:

> Do you have any reference to Weber's project? I would love to have a
> look at that circuit!
>
> BTW, do you mean SteveN Weber, KD1JV?

3793. Re: Searching a transverter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-13 16:08:45 UTC
From: F4ASK <nospamf4ask@wanadoo.fr>
Message-ID: <XnF94E8B896C8FA3GilbertF4ASK@193.252.19.141>
Source record: 26079

Hi

"AM200" <gt@am200.net> a cru bon de raconter en ce si beau jour
news:MYxmc.149$wA1.147@newsfe2-gui.server.ntli.net:

Thank you for the reply

> CTE International used to make them, but I think the output was 6.6MHz.
> The people that make CB radio equipment.
>
>

Yes but there is nothing on the CTE web site. I think that this rig is
"confidential" and hard to found ;o)

Finally, I will build a monoband transceiver : There are some good kits in
the ham shops...

--
Gilbert RATS
Station amateur F4ASK
LE HAVRE
FRANCE

3794. Re: Dolby Digital decoder

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-14 00:11:06 UTC
From: John Miles <jmiles@pop.removethistomailme.net>
Message-ID: <MPG.1b0dae77a95ca0da9896b6@news-central.giganews.com>
Source record: 26080

In article <_zxoc.36$al.16@fe25.usenetserver.com>, Joel@cyberbest.com
says...
> We have a old surround sound 5.1 amp/speaker combination. It does not
> support Dolby Digital. Every junk DVD player these days has Dolby Digital
> out. So I need to build a Dolby Digital decoder in to 5.1 out. I can buy a
> complete receiver that includes the decode and amp. But I don't want that.
> The PC gang have just the decoders I would need. As the DVD players on the
> PC's and this card decode the Dolby Digital and have 5.1 out.
>
> It seems to me there must be a schematic or kit to build a hardware Dolby
> Digital to 5.1 decoder.
>
> Any have any experience like that?
>
> Joe AG4QC

I would recommend surfing eBay for a Sony EP9ES. It was among the best
of the standalone DD decoders, and sold for nearly $1K circa 1998.
Because few people use standalone decoders these days, they are
available for a song, no pun intended.

I don't think there's much to be gained by building your own Dolby
decoder. It would involve interfacing a highly-proprietary
preprogrammed DSP chip to a total of six DACs, and then writing user-
interface code on a separate processor to control the whole shooting
match. A lot of tedious work with very little room for innovation,
education, or useful experimentation.

-- jm

---
http://www.qsl.net/ke5fx
Note: My E-mail address has been altered to avoid spam

3795. Re: Kit for Making PCB for SMT component

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-14 00:15:15 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <S6Uoc.11624$U4.6564@bignews6.bellsouth.net>
Source record: 26081

xpyttl wrote:
> The bloody surfboards don't come in any useful formats.
>
> If you are doing SOIC, you can almost do it manhattan style. A lot of the
> really interesting parts are in TSSOP. Of course, Surfboard have few TSSOP
> boards, and the ones they do have are just a few pins. Heck, I can somehow
> cobble an 8 pin TSSOP, what I need help on are the 24 and 28 pin jobs.
>
>

Try these. http://protoboards.theshoppe.com/
You CAN to tssop on this one.

..
>
> "tim gorman" <tgorman2@cox.net> wrote in message
> news:alct7c.vbj.ln@tg6124.ab0wr.net...
>
>>If you are making a small number of prototype boards, go to the digikey
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>>and look for "surfboards". They come in various configurations and by
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> using
>
>>something like wirewrap wire for jumpers between pads a lot of different
>>circuits can be made up quickly. I wouldn't recommend this arrangement for
>>upper rf but anything below 10mhz would probably work ok.
>>
>>tim ab0wr
>>
>>Localbuyer wrote:
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>>
>>>
>>>Hi:
>>>
>>>I am interested in making a simple circuit with SMT components since
>>>the IC used comes only in SMT form. Can anyone suggest a kit that can
>>>make PCB which is good for SMT component?
>>>
>>>
>>>Thanks
>>

>
>

3796. Re: DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-14 09:22:33 UTC
From: Sverre Holm <la3za.0junk4me@qsl.net>
Message-ID: <c822v2esv1@maud.ifi.uio.no>
Source record: 26082

> I do mean KD1JV. However, I don't think Steve ever wrote anything up. If
I
> recall, he used the TRF4900 which is a "transmitter" - basically a DDS
with
> an amplifier.
> Steve went right
> down to 6 meters for his first whack and had no problems.

If they can be taken down to HF also, it would be very easy to make a CW tx for 17 - 10 meters with such DDS-PLL chips. Right now that is not so interesting, but by the time we approach the next solar peak (2008+?), there may be many more such chips available also.

--
Sverre Holm, LA3ZA
---
www.qsl.net/la3za

3797. Re: DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-14 09:39:31 UTC
From: PaoloC <ollollo@hotpop.com>
Message-ID: <2gjiejF3go9fU1@uni-berlin.de>
Source record: 26083

Sverre Holm wrote:

>>down to 6 meters for his first whack and had no problems.
>
>
> If they can be taken down to HF also, it would be very easy to make a CW tx
> for 17 - 10 meters with such DDS-PLL chips. Right now that is not so
> interesting, but by the time we approach the next solar peak (2008+?), there
> may be many more such chips available also.

Yep, and in smaller packages too! :-) Those mentioned by xpyttl are in
TSSOP packages if I recall correctly: way too small to hand-solder!

Sometimes I am "frustrated" by the huge amount of useful ICs for HAM
homebrewing shipped in ultra-space-saving packages. :-(

Ciao,
Paolo IK1ZYW

3798. Re: DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-14 10:23:24 UTC
From: Leon Heller <leon_heller@hotmail.com>
Message-ID: <40a49e1d$0$25326$cc9e4d1f@news-text.dial.pipex.com>
Source record: 26084

"PaoloC" <ollollo@hotpop.com> wrote in message
news:2gjiejF3go9fU1@uni-berlin.de...
> Sverre Holm wrote:
>
>
> >>down to 6 meters for his first whack and had no problems.
> >
> >
> > If they can be taken down to HF also, it would be very easy to make a CW
tx
> > for 17 - 10 meters with such DDS-PLL chips. Right now that is not so
> > interesting, but by the time we approach the next solar peak (2008+?),
there
> > may be many more such chips available also.
>
> Yep, and in smaller packages too! :-) Those mentioned by xpyttl are in
> TSSOP packages if I recall correctly: way too small to hand-solder!
>
> Sometimes I am "frustrated" by the huge amount of useful ICs for HAM
> homebrewing shipped in ultra-space-saving packages. :-(

TSSOP is easy to solder using the 'drag soldering' technique. I use a
special Metcal system with a hoof tip, but it can be done with ordinary
soldering equipment. Plenty of liquid flux is the secret to success.

Leon
--
Leon Heller, G1HSM
http://www.geocities.com/leon_heller

3799. Re: DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-14 11:03:34 UTC
From: xpyttl <xpyttl_NOSPAM@earthling.net>
Message-ID: <10a9alc3eecsi70@corp.supernews.com>
Source record: 26085

I use pretty much the same technique as Leon, without the special equipment.
It does take a little care, and a lot of patience. But it really isn't all
that intimidating. Now, BGA's, those are scary!

..

"Leon Heller" <leon_heller@hotmail.com> wrote in message
news:40a49e1d$0$25326$cc9e4d1f@news-text.dial.pipex.com...
> TSSOP is easy to solder using the 'drag soldering' technique. I use a
> special Metcal system with a hoof tip, but it can be done with ordinary
> soldering equipment. Plenty of liquid flux is the secret to success.

3800. 455 kHz CW filter for ICOM

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-14 16:27:27 UTC
From: Jon K Hellan <hellan@acm.org>
Message-ID: <87brkr7z4g.fsf@acm.org>
Source record: 26086
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Hi,

I have an ICOM 707 transceiver which uses 455 kHz filters (FL-52A and FL-53A). I would like to add a CW filter, but ICOM's filters are pretty expensive. I wonder if I could use a 455 kHz filter for a different radio instead. Some mechanical adapation will be necessary, but will they be electrically compatible?

I've found the following link: http://www.qrpproject.de/UK/inradfilt.htm. Here, an alternative filter is suggested for both YAESU FT817 and ICOM IC703. The ICOM uses the same filters as mine, so this would suggest that filters for the YAESU might work in ICOM.

Regards

Jon Kï¿½re - LA4RT

3801. Re: DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-14 16:41:49 UTC
From: Sverre Holm <la3za.0junk4me@qsl.net>
Message-ID: <c82sqokcm1@maud.ifi.uio.no>
Source record: 26087

> I do mean KD1JV. However, I don't think Steve ever wrote anything up.

Here's his account using the TRF4400:

http://www.kkn.net/archives/html/QRP-L/2002-02/msg01621.html

--
Sverre Holm, LA3ZA
---
www.qsl.net/la3za

3802. Re: Kit for Making PCB for SMT component

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-14 22:12:10 UTC
From: tim gorman <tgorman2@cox.net>
Message-ID: <q7g38c.bvq.ln@tg6124.ab0wr.net>
Source record: 26088

Huh? I have used surfboards to make up all kinds of microphone preamps small
enough to fit into the microphone itself - certainly a very useful format
to have indeed!!

Not everyone is working with 24 and 28 pin IC's.

Beauty (usefulness) is in the eye of the beholder.

xpyttl wrote:

>
>
> The bloody surfboards don't come in any useful formats.
>
> If you are doing SOIC, you can almost do it manhattan style. A lot of the
> really interesting parts are in TSSOP. Of course, Surfboard have few
> TSSOP
> boards, and the ones they do have are just a few pins. Heck, I can
> somehow cobble an 8 pin TSSOP, what I need help on are the 24 and 28 pin
> jobs.
>
> ..
>
> "tim gorman" <tgorman2@cox.net> wrote in message
> news:alct7c.vbj.ln@tg6124.ab0wr.net...
>> If you are making a small number of prototype boards, go to the digikey
> site
>> and look for "surfboards". They come in various configurations and by
> using
>> something like wirewrap wire for jumpers between pads a lot of different
>> circuits can be made up quickly. I wouldn't recommend this arrangement
>> for upper rf but anything below 10mhz would probably work ok.
>>
>> tim ab0wr
>>
>> Localbuyer wrote:
>>
>> >
>> >
>> > Hi:
>> >
>> > I am interested in making a simple circuit with SMT components since
>> > the IC used comes only in SMT form. Can anyone suggest a kit that can
>> > make PCB which is good for SMT component?
>> >

>> >
>> > Thanks
>>

3803. Problems with LSB on IC706MKII

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-15 09:38:03 UTC
From: chafik.philo@eudoramail.com
Message-ID: <cacbc942.0405150138.5c1bc16@posting.google.com>
Source record: 26089
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

hello my friends
I am using icom 706 MKII
on LSB, I get bad reports about
audio and modulation quality, and the output power is too low.
but on USB the output power is normal with good audio quality
and modulation!
any idea please
thanks 73 CN8JV

3804. pulse transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-15 20:38:46 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <v7vpc.23878$U4.4177@bignews6.bellsouth.net>
Source record: 26090

I discovered a lot of pulse transformers. They appear to have primary
and secondary inductance of about 1.5mh and a ratio of 1:1ct

I wonder if they could be used as broadband rf transformers
to make homebrew diode ring mixers?

3805. Re: pulse transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-15 22:53:46 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <_bxpc.441$Fz4.31@newssvr23.news.prodigy.com>
Source record: 26091

toroidal, ferrite, iron?
"Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:v7vpc.23878$U4.4177@bignews6.bellsouth.net...
> I discovered a lot of pulse transformers. They appear to have primary
> and secondary inductance of about 1.5mh and a ratio of 1:1ct
>
> I wonder if they could be used as broadband rf transformers
> to make homebrew diode ring mixers?

3806. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-15 23:23:54 UTC
From: Z <post@imaris.demon.co.uk>
Message-ID: <IlQAfaxKaqpAFwR6@imaris.demon.co.uk>
Source record: 26093
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

In article <1fc7b362.0405100531.55960e@posting.google.com>, Andrew
VK3BFA <ablight@alphalink.com.au> writes
>Z <post@imaris.demon.co.uk> wrote in message
>news:<h3wkyxuKNbnAFwUG@imaris.demon.co.uk>...
>> In article <1e3670a7.0405061303.3f608231@posting.google.com>, Alan
>> Horowitz <alanh_27@yahoo.com> writes
>> >ET onboard a ship. Have decided after time to have own tools. Got
>> >them packed into one of those larger wheel-around, pull-the-handle-out
>> >check-in hard-shell Samsonites. Ends up being a bit heavy, cause of
>> >tool junkie genetic coding.
>> >
>> >Works great..... except when have to go up or down ladderwells
>> >("stairs", to you land pukes)
>> >
>> >Better approach?
>>
>> Get the bosun to carry your tools or help you carry your tools.
>> Webbing strop and ships winch.
>> Check out each job before starting and take less tools in a smaller
>> case.
>> Keep your own tools at home if the shipping company supplies tools and
>> use your own tools for homers when off tour.
>> See about your addiction. :-)
>>
>>
>> I managed a whole week once with a pinching driver!
>> I am a professed tool junkie as well but my van has no organisation aids
>> in it so there are tools and materials stuffed in the back of it so much
>> I can't find the tools I need.
>
>
>Yep, I am a tool junkie as well - but I only carry the bare minimum in
>the van, paranoid about them being stolen, and commercial insurance is
>just toooo much. Lets face it, he who dies with the most tools/test
>equipment wins......(not sure what you win, I just know that you do).
>
>BTW - whats the most obscure specialised tool you own - you know,
>something that was acquired in a moment of madness and never got used
>- (this specifically exludes power tools, they are in a special
>"sacred objects" category)...and where can I get a micro lathe cheap
>for turning up capacitor shafts....
>
>de VK3BFA Andrew

Got an Anatomy lab dissection kit yesterday for a snip GBP7 USD10. It contains a decent scalpel, various scissors, tweezers pokers, prodders, jabbers, impalers scrunchers and whatchamacallits. All in surgical stainless steel. I'm thinking twice about donating my body to medical science now though ;-)

Also they had a diagnostic kit at a song (otoscope/opthalmoscope) handy for close inspection. I didn't have a look as my hands were manky and I wouldn't want anything like that prodding about me after it had been in my hands. I'll maybe go in with clean hands on Monday.

--
Z
Remove all Zeds in e-mail address to reply.

3807. Re: pulse transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-16 04:17:14 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <eXBpc.5797$9P6.4587@clgrps12>
Source record: 26094

I have used them as DBM's as high as the 1750M LowFER band :-)

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

3808. Re: pulse transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-16 04:23:09 UTC
From: Leon Heller <leon_heller@hotmail.com>
Message-ID: <40a6ecaf$0$25328$cc9e4d1f@news-text.dial.pipex.com>
Source record: 26095

"Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:v7vpc.23878$U4.4177@bignews6.bellsouth.net...
> I discovered a lot of pulse transformers. They appear to have primary
> and secondary inductance of about 1.5mh and a ratio of 1:1ct
>
> I wonder if they could be used as broadband rf transformers
> to make homebrew diode ring mixers?

I don't think they will work very well, you really need transmission line
transformers wound on suitable cores for diode ring mixers.

Leon
--
Leon Heller, G1HSM
http://www.geocities.com/leon_heller

3809. Re: Problems with LSB on IC706MKII

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-16 07:24:45 UTC
From: Pete KE9OA <p.gianak@worldnet.att.net>
Message-ID: <1HEpc.10627$hH.265212@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26096
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Your injection frequency for the LSB mode probably isn't set correctly. You didn't say how your audio sounded. If it is lacking low frequency response, the injection frequency is too far down on the filter slope. This would also account for the lower output power.
I am not familiar with the innards of this rig.....it is possible that this could be corrected through a softkey menu. I am sure that this rig probably has a service menu mode.

Pete

"mongo" <not@here.net> wrote in message
news:q44da0hmuj5382um32jr4mk9hsnkc0ppct@4ax.com...
> On 15 May 2004 02:38:03 -0700, chafik.philo@eudoramail.com (chafik
> CN8JV) wrote:
>
> >hello my friends
> >I am using icom 706 MKII
> >on LSB, I get bad reports about
> >audio and modulation quality, and the output power is too low.
> >but on USB the output power is normal with good audio quality
> >and modulation!
> >any idea please
> >thanks 73 CN8JV
> AM , FM & RTTY Tx OK?
> Tried a CPU reset?
> Might be the PLL or main board.
> Service manual here;
>
http://www.acc.umu.se/~nor/.manual/icom_service/IC-706MK2_Service_Manual.pdf

3810. My radio works with uranium ....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-16 09:04:00 UTC
From: nice_snipper@yahoo.co.nz
Message-ID: <536e17d9.0405160104.77c94ff8@posting.google.com>
Source record: 25997
Cross-posted to: rec.radio.amateur.homebrew,alt.gods

Yes, it's a radioactive radio.

3811. Re: pulse transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-16 10:48:58 UTC
From: "f.dinger@ntlworld.com"
Message-ID: <3MIpc.43$Fk4.0@newsfe1-win>
Source record: 25998

> > I discovered a lot of pulse transformers. They appear to have primary
> > and secondary inductance of about 1.5mh and a ratio of 1:1ct
> >
> > I wonder if they could be used as broadband rf transformers
> > to make homebrew diode ring mixers?
>
> I don't think they will work very well, you really need transmission line
> transformers wound on suitable cores for diode ring mixers.
=======
Perhaps not suitable for higher RF frequencies ,but these transformers can
be readily used for AF ,for example to provide galvanic separation between
a PC (soundcard) and a radio for operating digital modes like PSK31 etc .

Frank GM0CSZ / KN6WH

3812. Re: pulse transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-16 11:27:54 UTC
From: Highland Ham <abgm0csz.kn6whyz@ntlworld.com>
Message-ID: <S6Tpc.534$f%4.419@newsfe6-gui.server.ntli.net>
Source record: 26010

> > I discovered a lot of pulse transformers. They appear to have primary
> > and secondary inductance of about 1.5mh and a ratio of 1:1ct
> >
> > I wonder if they could be used as broadband rf transformers
> > to make homebrew diode ring mixers?
>---------------------------
> I don't think they will work very well, you really need transmission line
> transformers wound on suitable cores for diode ring mixers.
> =======
Perhaps not suitable for higher RF frequencies ,but these transformers can
be readily used for AF ,for example to provide galvanic separation between
a PC (soundcard) and a radio for operating digital modes like PSK31 etc .

Frank GM0CSZ / KN6WH

3813. Heathkit service or operators manual help?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-16 12:09:43 UTC
From: Bob <nubob5001@yahoo.com>
Message-ID: <xZIpc.678$_V4.547@read1.cgocable.net>
Source record: 25999

Hi

Does anyone know where I can get a look at the Heathkit SB220 Manuals? I would like to see the schematics on this unit especially interested in the transformer's primary and secondary hook ups.
Any one know a link where I can find the service manual or operators manual?
Thanks
Bob

3814. Re: Heathkit service or operators manual help?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-16 12:19:37 UTC
From: John Walton <jdwalton@comcast.net>
Message-ID: <3PWdnQikQdkcxjrdRVn-uw@comcast.com>
Source record: 26000

www.w7fg.com

"Bob" <nubob5001@yahoo.com> wrote in message
news:xZIpc.678$_V4.547@read1.cgocable.net...
> Hi
>
> Does anyone know where I can get a look at the Heathkit SB220 Manuals? I
> would like to see the schematics on this unit especially interested in the
> transformer's primary and secondary hook ups.
> Any one know a link where I can find the service manual or operators
manual?
> Thanks
> Bob
>
>

3815. Re: Heathkit service or operators manual help?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-16 14:03:33 UTC
From: Caveat Lector <CV@zimo.net>
Message-ID: <VwKpc.5540$65.3725@lakeread06>
Source record: 26001

See BAMA
http://bama.sbc.edu/heath.htm
--
Caveat Lector Ya All

Amateur Radio is the best back-up
communications system in the world,
and that's the way it is. Walter Cronkite

"Bob" <nubob5001@yahoo.com> wrote in message
news:xZIpc.678$_V4.547@read1.cgocable.net...
> Hi
>
> Does anyone know where I can get a look at the Heathkit SB220 Manuals? I
> would like to see the schematics on this unit especially interested in the
> transformer's primary and secondary hook ups.
> Any one know a link where I can find the service manual or operators
manual?
> Thanks
> Bob
>
>

3816. Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-16 14:06:24 UTC
From: skavanagh72nospam@yahoo.ca
Message-ID: <5249fb3f.0405160606.65a3193a@posting.google.com>
Source record: 26002
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

A year or so ago I was working on a microwave local oscillator (at about 2.5 GHz) multiplied up from a crystal oscillator near 40 MHz. The output was found to jump in frequency by tens or hundreds of Hz many times as the LO chain was warming up. I was able to reduce this jumping by replacing all the dipped silver mica capacitors in the crystal oscillator stage with NP0 ceramics. There is still a bit of jumping which may come from some silver micas which remain in the stage following the crystal oscillator.

I have just been observing the same sort of frequent jumping behaviour (up to a kHz or so at a time) in another local oscillator (output at about 10.5 GHz, phase locked to a crystal oscillator around 100 MHz). I note that this one also has dipped silver mica caps in the crystal oscillator and I wonder if it too would be improved by replacing them with NP0 ceramics.

The capacitors used in both cases are from unknown sources and were probably manufactured in the early 1980's.

Has anyone else experienced this behaviour ?

Steve (VE3SMA)

3817. Re: Heathkit service or operators manual help?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-16 14:18:12 UTC
From: Bob <nubob5001@yahoo.com>
Message-ID: <_RKpc.685$_V4.640@read1.cgocable.net>
Source record: 26003

Thanks for the link, but I couldn't get it to work, are there any alternate
sites than that FTP site? Kept coming up with errors,
Thanks
Bob

"Caveat Lector" <CV@zimo.net> wrote in message
news:VwKpc.5540$65.3725@lakeread06...
>
> See BAMA
> http://bama.sbc.edu/heath.htm
> --
> Caveat Lector Ya All
>
> Amateur Radio is the best back-up
> communications system in the world,
> and that's the way it is. Walter Cronkite
>
>
>
>
>
> "Bob" <nubob5001@yahoo.com> wrote in message
> news:xZIpc.678$_V4.547@read1.cgocable.net...
> > Hi
> >
> > Does anyone know where I can get a look at the Heathkit SB220 Manuals? I
> > would like to see the schematics on this unit especially interested in
the
> > transformer's primary and secondary hook ups.
> > Any one know a link where I can find the service manual or operators
> manual?
> > Thanks
> > Bob
> >
> >
>
>

3818. Re: Heathkit service or operators manual help?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-16 14:23:57 UTC
From: Caveat Lector <CV@zimo.net>
Message-ID: <2QKpc.5545$65.1391@lakeread06>
Source record: 26004

```
Since BAMA is free it gets a lot of traffic -- so keep trying -- maybe 2:00
AM in middle of the night
Has worked many times for me.
Great resource thanks to K4XL

--
Caveat Lector Ya All

Amateur Radio is the best back-up
communications system in the world,
and that's the way it is. Walter Cronkite

"Bob" <nubob5001@yahoo.com> wrote in message
news:_RKpc.685$_V4.640@read1.cgocable.net...
> Thanks for the link, but I couldn't get it to work, are there any
alternate
> sites than that FTP site? Kept coming up with errors,
> Thanks
> Bob
>
>
>
>
>
>
> "Caveat Lector" <CV@zimo.net> wrote in message
> news:VwKpc.5540$65.3725@lakeread06...
> >
> > See BAMA
> > http://bama.sbc.edu/heath.htm
> > --
> > Caveat Lector Ya All
> >
> > Amateur Radio is the best back-up
> > communications system in the world,
> > and that's the way it is. Walter Cronkite
> >
> >
> >
> >
> >
> > "Bob" <nubob5001@yahoo.com> wrote in message
> > news:xZIpc.678$_V4.547@read1.cgocable.net...
> > > Hi
> > >
```

> > > Does anyone know where I can get a look at the Heathkit SB220 Manuals?
I
> > > would like to see the schematics on this unit especially interested in
> the
> > > transformer's primary and secondary hook ups.
> > > Any one know a link where I can find the service manual or operators
> > manual?
> > > Thanks
> > > Bob
> > >
> > >
> >
> >
>
>

3819. Re: Heathkit service or operators manual help?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-16 14:26:24 UTC
From: Bob <nubob5001@yahoo.com>
Message-ID: <2SKpc.1491$XY6.134167@read2.cgocable.net>
Source record: 26005

Ok, Thanks
I will keep trying,

"Caveat Lector" <CV@zimo.net> wrote in message
news:2QKpc.5545$65.1391@lakeread06...
> Since BAMA is free it gets a lot of traffic -- so keep trying -- maybe
2:00
> AM in middle of the night
> Has worked many times for me.
> Great resource thanks to K4XL
>
> --
> Caveat Lector Ya All
>
> Amateur Radio is the best back-up
> communications system in the world,
> and that's the way it is. Walter Cronkite
>
>
>
>
>
> "Bob" <nubob5001@yahoo.com> wrote in message
> news:_RKpc.685$_V4.640@read1.cgocable.net...
> > Thanks for the link, but I couldn't get it to work, are there any
> alternate
> > sites than that FTP site? Kept coming up with errors,
> > Thanks
> > Bob
> >
> >
> >
> >
> >
> >
> > "Caveat Lector" <CV@zimo.net> wrote in message
> > news:VwKpc.5540$65.3725@lakeread06...
> > >
> > > See BAMA
> > > http://bama.sbc.edu/heath.htm
> > > --
> > > Caveat Lector Ya All
> > >
> > > Amateur Radio is the best back-up

> > > communications system in the world,
> > > and that's the way it is. Walter Cronkite
> > >
> > >
> > >
> > >
> > >
> > > "Bob" <nubob5001@yahoo.com> wrote in message
> > > news:xZIpc.678$_V4.547@read1.cgocable.net...
> > > > Hi
> > > >
> > > > Does anyone know where I can get a look at the Heathkit SB220
Manuals?
> I
> > > > would like to see the schematics on this unit especially interested
in
> > the
> > > > transformer's primary and secondary hook ups.
> > > > Any one know a link where I can find the service manual or operators
> > > manual?
> > > > Thanks
> > > > Bob
> > > >
> > > >
> > >
> > >
> > >
> >
> >
>
>

3820. SB-220

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-16 15:55:46 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.00000034.00145f31@btinternet.com>
Source record: 26006

Hi,

You can download it from here -

http://home.earthlink.net/~n0ss/sb-220_schematic_11x14.pdf

Cheers - Joe

3821. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-16 16:29:24 UTC
From: Dan Rae <rae4@ix.netcom.com>
Message-ID: <EFMpc.2280$H_3.408@newsread1.news.pas.earthlink.net>
Source record: 26007

Steve Kavanagh wrote:
> A year or so ago I was working on a microwave local oscillator (at
> about 2.5 GHz) multiplied up from a crystal oscillator near 40 MHz.
> The output was found to jump in frequency by tens or hundreds of Hz
> many times as the LO chain was warming up. I was able to reduce this

Steve, I've had several silver micas go weird in 20 odd year old Racal radios that I've fixed, they're second only to Tantalum caps as a cause of faults in those. But at least they don't explode!

Regards
Dan
AC6AO G3NCR

3822. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-16 16:29:37 UTC
From: dplatt@radagast.org
Message-ID: <10af5nhh1gktl62@corp.supernews.com>
Source record: 26008
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

In article <5249fb3f.0405160606.65a3193a@posting.google.com>,
Steve Kavanagh <skavanagh72nospam@yahoo.ca> wrote:

>A year or so ago I was working on a microwave local oscillator (at
>about 2.5 GHz) multiplied up from a crystal oscillator near 40 MHz.
>The output was found to jump in frequency by tens or hundreds of Hz
>many times as the LO chain was warming up. I was able to reduce this
>jumping by replacing all the dipped silver mica capacitors in the
>crystal oscillator stage with NP0 ceramics.

#snip#

>Has anyone else experienced this behaviour ?

Not personally, but I believe I've seen it mentioned in one of Doug
DeMaw W1FB's books on QRP transceiver design.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

3823. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-16 17:37:59 UTC
From: k7itm@aol.com
Message-ID: <3200347.0405160937.555a8e1c@posting.google.com>
Source record: 25984
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Yes, a long time ago I saw just the same sort of behavior in LC
oscillators using silvered mica caps. Ever since, I haven't trusted
them, and use NPO/C0G instead for frequency control applications.

Cheers,
Tom

skavanagh72nospam@yahoo.ca (Steve Kavanagh) wrote in message
news:<5249fb3f.0405160606.65a3193a@posting.google.com>...

...
> Has anyone else experienced this behaviour ?

3824. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-16 22:45:20 UTC
From: Jan Panteltje <pNaonStpealmtje@yahoo.com>
Message-ID: <c88quj$k02$1@news.epidc.co.kr>
Source record: 26009
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On a sunny day (Sun, 16 May 2004 21:16:23 +0100) it happened Joe McElvenney
<ximac@btinternet.com> wrote in <VA.00000035.00210599@btinternet.com>:

>Hi,
>
> Have a look at the 'Mica' section of this -
>
> http://my.execpc.com/~endlr/misc__dielectrics.html
>
> It won't answer your question but should give you an idea as to
>why that particular dielectric should be avoided in certain
>situations.
>
>
> Cheers - Joe
>
>
Nice page, I like these oldies, remind me of the past:
http://www.orenelliottproducts.com/capacito.htm
JP

3825. Re: My radio works with uranium ....

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-16 23:22:58 UTC
From: sdeyoreo@hotmail.com
Message-ID: <fstfa01as91raa7vpkpj7l1f45lkdht5iq@4ax.com>
Source record: 26011
Cross-posted to: rec.radio.amateur.homebrew,alt.gods

radioactive element heating a thermopile as a battery?
On 16 May 2004 02:04:00 -0700, nice_snipper@yahoo.co.nz (Tom-Alex
Soorhull) wrote:

>Yes, it's a radioactive radio.

3826. Cancel <VA.00000035.00210599@btinternet.com>

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-16 23:23:29 UTC
From: Joe McElvenney <ximac@btinternet.com>
Message-ID: <VA.00000036.000d8e4d@btinternet.com>
Source record: 26012
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

```
Message cancelled by author
```

3827. FA: Electronics Engineering education course - CIE

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-17 03:01:52 UTC
From: trevordeclercq@yahoo.com
Message-ID: <aabf732a.0405161901.49092ee4@posting.google.com>
Source record: 26013
Cross-posted to: sci.electronics.design,sci.electronics.repair,rec.radio.shortwave,rec.radio.amateur.homebrew

Hi folks,

I am auctioning off a distance learning course in Electronics
Engineering. This course is an
extremely throrough way to teach yourself electronics if you are an
amateur and would like to
learn a whole lot more. The link is:

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=4213912610

The course is from the Cleveland Institute of Electronics and includes
basically all of the material, course booklets, and parts you need to
complete the equivalent of an Associate's Degree in EET. I learned a
heck of a lot from the course, but I have graduated and need to free
up space in my small apartment. Thanks for looking!

Cheers,
Trevor de Clercq

3828. Re: Filter Design/Analysis program FREE with powerful crystal ladder designs

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-17 07:44:24 UTC
From: Pete KE9OA <p.gianak@worldnet.att.net>
Message-ID: <s3_pc.14504$hH.362449@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26014

Thanks Neil.....it gets better all the time!

Pete

"Neil" <neil@aade.com> wrote in message
news:bFjoc.16639$UQ.956283@attbi_s51...
> AADE Filter Design is now FREE.
> The latest version includes some very interesting crystal ladder filters
> using identical crystals.
> Both upper and lower sideband filters.
> Matched USB and LSB from the same crystal frequency.
>
> To view a short article about these crystal filters see
> http://www.aade.com/filter32/dishal.htm
>
> To download the program see: http://www.aade.com/filter32/download.htm
>
> Neil (The L/C Meter IIB guy)
> Almost All Digital Electronics
>
>

3829. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-17 15:44:02 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c8amo2$ln8$1@newshost.mot.com>
Source record: 26015
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Steve Kavanagh" <skavanagh72nospam@yahoo.ca> wrote in message
news:5249fb3f.0405160606.65a3193a@posting.google.com...
> A year or so ago I was working on a microwave local oscillator (at
> about 2.5 GHz) multiplied up from a crystal oscillator near 40 MHz.
> The output was found to jump in frequency by tens or hundreds of Hz
> many times as the LO chain was warming up. I was able to reduce this
> jumping by replacing all the dipped silver mica capacitors [...snip]
>
> The capacitors used in both cases are from unknown sources and were
> probably manufactured in the early 1980's.
> Has anyone else experienced this behaviour ?
> Steve (VE3SMA)

Steve,
Although I didn't figure it out at the time, my Knight-Kit Space Spanner
circa 1960 had terrible microphonics - very noisy. I cleaned the entire
chassis & rewired it to no avail. Today I suspect a mica cap, the old
square type, since I heard of same thing this some time ago.

3830. ISO Manual for Telephone Interconnects. Zetron and IDA System 2

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-17 17:28:58 UTC
From: Don Smith <desmith@innercite.com>
Message-ID: <10ahtiudslncd06@corp.supernews.com>
Source record: 26016
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment,rec.radio.amateur.boatanchors,rec.radio.swap

I just purchased a couple of Telephone Interconnects that I am interested in finding manuals for. They are the Zetron 48Max which was also offered as a GE Marc A.C.X. and also for the IDA RLC System 2. Would be happy with a copy of each. Gladly pay for any and all copying and shipping costs, or a fair price for an original. Please contact me at my email. desmith@innercite.com Thanks and 73's Don Smith KB6GQA

--

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.681 / Virus Database: 443 - Release Date: 5/15/04

3831. Re: Problems with LSB on IC706MKII

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-17 19:32:54 UTC
From: Annette & LJ Dumas <nettski@worldnet.spinelessspammers.att.net>
Message-ID: <Gr8qc.16420$hH.405508@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26017
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

I have a similar problem on USB. My receive audio dropped to barely audible, and it sounded like people are talking from within a tin can. Got a friend on air, we compared AM, FM, CW USB and LSB, and I listened to RTTY. Everything received well except USB; LSB was a little off, I think. Transmit was fine (5-8, 5-9). Wrote ICOM, they had 'no ideas for troubleshooting.' Sent it back Friday (5/14) as it's still under warranty.

Will let'cha know what ICOM says!

73

Joe
N2LJD
"chafik CN8JV" <chafik.philo@eudoramail.com> wrote in message news:cacbc942.0405150138.5c1bc16@posting.google.com...
> hello my friends
> I am using icom 706 MKII
> on LSB, I get bad reports about
> audio and modulation quality, and the output power is too low.
> but on USB the output power is normal with good audio quality
> and modulation!
> any idea please
> thanks 73 CN8JV

3832. Re: pulse transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-17 22:09:17 UTC
From: k7itm@aol.com
Message-ID: <3200347.0405171409.2320ccb9@posting.google.com>
Source record: 26018

Ken Scharf <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:<v7vpc.23878$U4.4177@bignews6.bellsouth.net>...
> I discovered a lot of pulse transformers. They appear to have primary
> and secondary inductance of about 1.5mh and a ratio of 1:1ct
>
> I wonder if they could be used as broadband rf transformers
> to make homebrew diode ring mixers?

1.5mH doesn't make them sound very interesting for anything above very
low HF frequencies, if that, and would be too low for AF where 1.5mH
at 1kHz is only about 8 ohms reactance. They might be pretty good for
isolated driving of mosfet gates at a few tens of kHz. You should be
able to find their self-resonant frequency, and my guess is it will be
in the vicinity of 2MHz. You probably don't want to try to use them
above their SRF.

Do you have a manufacturer's part number? Can you look up what they
are recommending them for?

Cheers,
Tom

3833. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-18 00:02:17 UTC
From: kensmith@violet.rahul.net
Message-ID: <c8bjq9$8rb$2@blue.rahul.net>
Source record: 26019
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

In article <5249fb3f.0405160606.65a3193a@posting.google.com>,
Steve Kavanagh <skavanagh72nospam@yahoo.ca> wrote:
[...]
>I have just been observing the same sort of frequent jumping behaviour
>(up to a kHz or so at a time) in another local oscillator (output at
>about 10.5 GHz, phase locked to a crystal oscillator around 100 MHz).
>I note that this one also has dipped silver mica caps in the crystal
>oscillator and I wonder if it too would be improved by replacing them
>with NP0 ceramics.

Do the silver mica caps say "made in china" on them? Are they a light tan
color? If either of these are true chances are you will get a better cap
made from ear wax and tin foil. Somewhere in China there was, and perhaps
still is a factory, that made silver mica caps that change value if you
squeeze them between your fingers and go open if you heat cycle them.

I've never had much trouble with CDE caps.

--
--
kensmith@rahul.net forging knowledge

3834. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-18 00:21:37 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <ecaga01ouk1mlerg0v0gmkrbbjgh184cfn@4ax.com>
Source record: 26020
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 16 May 2004 07:06:24 -0700 skavanagh72nospam@yahoo.ca (Steve Kavanagh) wrote:

>The capacitors used in both cases are from unknown sources and were >probably manufactured in the early 1980's.

That may be the secret here. In the past, I've used silver mica caps in a number of applications with positive results. The only problem I've ever seen with good quality ones was a single one in a 40 year old HP amplifier that had become leaky.

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA

3835. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-18 02:31:08 UTC
From: Rich Grise <null@example.net>
Message-ID: <Mzeqc.136733$G_.38996@nwrddc02.gnilink.net>
Source record: 26021
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Jim Adney" <jadney@vwtype3.org> wrote in message
news:ecaga01ouk1mlerg0v0gmkrbbjgh184cfn@4ax.com...
> On 16 May 2004 07:06:24 -0700 skavanagh72nospam@yahoo.ca (Steve
> Kavanagh) wrote:
>
> >The capacitors used in both cases are from unknown sources and were
> >probably manufactured in the early 1980's.
>
> That may be the secret here. In the past, I've used silver mica caps
> in a number of applications with positive results. The only problem
> I've ever seen with good quality ones was a single one in a 40 year
> old HP amplifier that had become leaky.

If silvered mica caps are so crappy, why did they ever use them in
the first place?

Thanks,
Rich

3836. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-18 04:09:05 UTC
From: Joel <Joel@cyberbest.com>
Message-ID: <F%fqc.61$1B.55@fe25.usenetserver.com>
Source record: 26022
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Space Spanner.. O'Man, I could only afford the Ocean Hopper.. Man, them were the days!

Joel AG4QC

"Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote in message news:c8amo2$ln8$1@newshost.mot.com...
>
> Steve,
> Although I didn't figure it out at the time, my Knight-Kit Space Spanner
> circa 1960 had terrible microphonics - very noisy. I cleaned the entire
> chassis & rewired it to no avail. Today I suspect a mica cap, the old
> square type, since I heard of same thing this some time ago.
>
>

3837. QUALITY SINGLE CLUB! Right place to meet someone special!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-18 08:17:16 UTC
From: smile25 <formtt1@yahoo.com>
Message-ID: <c8cgqc$3dm@odak26.prod.google.com>
Source record: 26023

Want to meet gorgeous girls and quality men? Welcome to our quality
singles club! You can meet our club members at once after joining us!
http://www.DateQualitySingls.4x2.net/

3838. Re: DDS chips

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-18 19:00:01 UTC
From: Joel Kolstad <JKolstad71HatesSpam@Yahoo.Com>
Message-ID: <c8dmf3ljn1@news.oregonstate.edu>
Source record: 26024

xpyttl <xpyttl_NOSPAM@earthling.net> wrote:
> I use pretty much the same technique as Leon, without the special
> equipment. It does take a little care, and a lot of patience. But it
> really isn't all that intimidating.

Agreed.

> Now, BGA's, those are scary!

I keep waiting for someone to come out with a reasonably priced X-ray inspection sytem. (Pace has the XR 3000 for all of $40,000 at the moment!) At the, say, couple thousand dollar point every small business out there would be able to afford one, and used units would show up that amateurs might be able to afford.

3839. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-18 19:55:38 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c8dprq$9hm$1@newshost.mot.com>
Source record: 26025
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Rich Grise" <null@example.net> wrote in message
news:Mzeqc.136733$G_.38996@nwrddc02.gnilink.net...
> "Jim Adney" <jadney@vwtype3.org> wrote in message
> news:ecaga01ouk1mlerg0v0gmkrbbjgh184cfn@4ax.com...
> > On 16 May 2004 07:06:24 -0700 skavanagh72nospam@yahoo.ca (Steve
> > Kavanagh) wrote:
> >
[snip]
>
> If silvered mica caps are so crappy, why did they ever use them in
> the first place?
>
> Thanks,
> Rich

Well made, they are very stable & handle considerable current. These were
top of the line. If they make junk now, so be it.

--
Steve N, K,9;d, c. i My email has no u's.

3840. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-18 20:01:34 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c8dq6u$9ma$1@newshost.mot.com>
Source record: 26026
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Joel" <Joel@cyberbest.com> wrote in message
news:F%fqc.61$1B.55@fe25.usenetserver.com...
> That "Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote in message
> news:c8amo2$ln8$1@newshost.mot.com...

> > Steve,
> > Although I didn't figure it out at the time, my Knight-Kit Space
> Spanner
> > circa 1960 had terrible microphonics - very noisy. I cleaned the entire
> > chassis & rewired it to no avail. Today I suspect a mica cap, the old
> > square type, since I heard of same thing this some time ago.
> >
> >
> Space Spanner.. O'Man, I could only afford the Ocean Hopper.. Man, them
> were the days!
>
> Joel AG4QC
>

Yea! AND, get this, I think I took plates off, or bent some, of the
bandspread cap to reduce its range and calibrated it for 40 M. Every
Saturday morning I'd listen to the same group on SSB talking about their
Collins rigs and inverted Vees.
Wish I still had it and the Knight-Kit crystal set. Had it hooked up to
a loud speaker in my room (course I was in Wood Dale, IL., not too far from
the WBBM and WGN AM transmitters...)
73
--
Steve N, K,9;d, c. i My email has no u's.

3841. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-18 22:05:13 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <tMvqc.9834$Z24.5563@newssvr24.news.prodigy.com>
Source record: 26027
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Real mica has to be real old and it sn't aging much in a capacitor because it has been aging for eons and for all pracitcal purposes inert. If mica capacitors are jumpy it must be due to the plating or encapsulation! If there's no clue to the mfg it could be that these jumpy were not manufacutured for your application. JMHO
73
Hank WD5JFR

"Steve Kavanagh" <skavanagh72nospam@yahoo.ca> wrote in message news:5249fb3f.0405160606.65a3193a@posting.google.com...
> A year or so ago I was working on a microwave local oscillator (at
> about 2.5 GHz) multiplied up from a crystal oscillator near 40 MHz.
> The output was found to jump in frequency by tens or hundreds of Hz
> many times as the LO chain was warming up. I was able to reduce this
> jumping by replacing all the dipped silver mica capacitors in the
> crystal oscillator stage with NP0 ceramics. There is still a bit of
> jumping which may come from some silver micas which remain in the
> stage following the crystal oscillator.
>
> I have just been observing the same sort of frequent jumping behaviour
> (up to a kHz or so at a time) in another local oscillator (output at
> about 10.5 GHz, phase locked to a crystal oscillator around 100 MHz).
> I note that this one also has dipped silver mica caps in the crystal
> oscillator and I wonder if it too would be improved by replacing them
> with NP0 ceramics.
>
> The capacitors used in both cases are from unknown sources and were
> probably manufactured in the early 1980's.
>
> Has anyone else experienced this behaviour ?
>
> Steve (VE3SMA)

3842. Improve handheld audio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-18 23:39:14 UTC
From: upand_at_them@yahoo.com
Message-ID: <e89ab718.0405181539.30e121b3@posting.google.com>
Source record: 26028
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.digital.misc

I recently got two older Icom IC-2N HTs (2 meter) for use in decoding APRS packet radio. Nice radios, but I get less than 10% of packets decoded with either radio. Compared to 100% of packets using my Yaesu VX-2R. I know the problem is not the decoder, but the radio audio, and wondered if there is anything I can do to improve the Icoms.

(And, no, I do not have an oscilloscope.)

Mike

3843. Re: Improve handheld audio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-19 00:10:07 UTC
From: dplatt@radagast.org
Message-ID: <10al9evbr9taqec@corp.supernews.com>
Source record: 26029
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.digital.misc

In article <e89ab718.0405181539.30e121b3@posting.google.com>,
Radioactive Man <upand_at_them@yahoo.com> wrote:

>I recently got two older Icom IC-2N HTs (2 meter) for use in decoding
>APRS packet radio. Nice radios, but I get less than 10% of packets
>decoded with either radio. Compared to 100% of packets using my Yaesu
>VX-2R. I know the problem is not the decoder, but the radio audio,
>and wondered if there is anything I can do to improve the Icoms.

The first and simplest things I'd suggest are:

- Make sure that you've turned the HT's power-saving receiver mode
off! A lot of HTs save battery power by spending most of their
time with the receiver "asleep", turning the receiver on several
times per second, and checking for the presence of carrier. This
will play merry hob with packet reception, as you'll almost always
lose most of the packet-synchronization preamble.

- Turn the HT's volume level down fairly low. You want to make sure
that the analog signal coming out of the HT isn't clipping
(overdriving the HT's audio output circuitry) and isn't overdriving
the TNC's input circuit. It's usually a good deal easier for a TNC
(hard or soft) to track a low-level audio signal, than it is for it
to track an overdriven high-amplitude signal full of distortion and
intermodulation.

If neither of these helps, then I'd suspect that there's some nasty
noise or distortion, or excessive receive equalization occurring in
the HT's audio circuitry, and that some substantial circuit mods might
be required. These would probably require a schematic, 'scope, and
some audio analysis tools such as an audio spectrum analyzer to figure
out properly.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

3844. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-19 01:45:01 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <kcela0lovp2rvjdb5q8j5mefri137aoeuj@4ax.com>
Source record: 26030
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On Tue, 18 May 2004 02:31:08 GMT "Rich Grise" <null@example.net>
wrote:

>"Jim Adney" <jadney@vwtype3.org> wrote in message
>news:ecaga01ouk1mlerg0v0gmkrbbjgh184cfn@4ax.com...
>> On 16 May 2004 07:06:24 -0700 skavanagh72nospam@yahoo.ca (Steve
>> Kavanagh) wrote:
>>
>> >The capacitors used in both cases are from unknown sources and were
>> >probably manufactured in the early 1980's.
>>
>> That may be the secret here. In the past, I've used silver mica caps
>> in a number of applications with positive results. The only problem
>> I've ever seen with good quality ones was a single one in a 40 year
>> old HP amplifier that had become leaky.
>
>If silvered mica caps are so crappy, why did they ever use them in
>the first place?

I was not suggesting that they were crappy. I was suggesting that of
all the high quality ones I have worked with over many years, I've
only seen 1 failure.

His experience may well be due to the fact that his were of unknown
origin and unknown quality.

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA

3845. WTB: P/S unit for Henry 4-k amp

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-19 06:17:53 UTC
From: aa8wl <aa8wl@comcast.net>
Message-ID: <kISdnRNKwvMdYTfdRVn_iw@comcast.com>
Source record: 26031

I am looking for a P/S with the pedestal base. If someone has one they would like see put to good use please contact me at: aa8wl@comcast.net

TNX in advance, 73' de aa8wl Sam

3846. Microwave Software

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-19 06:20:27 UTC
From: "Leland C. Scott" <kc8ldo@arrl.net>
Message-ID: <04SdncK27cc1YTfdRVn_iw@comcast.com>
Source record: 26032

Is there a source for Puff 2.1 in the USA currently. I know it is no longer
avaiabe from Professor Dave Rutledge at Caltech Institute. I don't want to
buy the two the books

http://www.its.caltech.edu/%7Emmic/puffindex/puffform.html

that have included it just for the software.
--
Leland C. Scott
KC8LDO

Wireless Network
Mobile computing
on the go brought
to you by Micro$oft

3847. Re: Improve handheld audio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-19 11:06:18 UTC
From: fmmck@aol.com
Message-ID: <20040519070618.08632.00001497@mb-m11.aol.com>
Source record: 26034

<< I recently got two older Icom IC-2N HTs (2 meter) for use in decoding APRS packet radio. Nice radios, but I get less than 10% of packets decoded with either radio. >>

Mike-

I agree with Dave's assessment of your problem. My first thought was to turn down the audio level and see if that improved things. Otherwise, check to be sure your +5 KHz switch is off (or on if appropriate).

Back around 1990, I had an IC-3AT and an IC-2AT connected in an experimental dual TheNet node, connecting between a 220 backbone network and local access on Two Meters. I never had a problem like yours.

I'm not familiar with the IC-2N. Could it be a variant of the IC-2A? If not, then it is possible that model had a differently wired earphone jack, with a DC voltage on the shield terminal rather than ground. In that case, there could be a short circuit when connected to a TNC that had its ground also connected to the co-ax shield on an external antenna. I know this could be the case with some Radio Shack handheld radios, but have never encountered it with Icom.

73, Fred, K4DII

3848. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-19 13:08:37 UTC
From: skavanagh72nospam@yahoo.ca
Message-ID: <5249fb3f.0405190508.f0b10d4@posting.google.com>
Source record: 26035
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Thanks for all your comments. Since speculation has started here is what I know about the capacitors.

Those used in the 2.5 GHz source are surplus from a company that makes high quality stuff. They were probably procured to a military or space specification but I am not sure. The 10.5 GHz source was manufactured by MA/COM about 20 years ago. All of them are the usual deep maroon (is that the right word ?) to brown colour.

Keep in mind I am being pretty picky. I consider short term frequency jumps of much over 100 Hz to be unsatisfactory - that is 10-40 parts per billion depending on which source is considered. The largest observed jumps are about ten times this. Of course, since these are crystal oscillators, the corresponding capacitance jumps must be much larger, since the crystal should dominate the oscillator stability. I would not consider them "crappy", just not as good as one might be led to expect. I have used capacitors from the same provenance as those in the 2.5 GHz source in LC oscillators at a few MHz with no observed problems. The smooth portion of the warm-up drift is reasonably normal in both cases...only the jumpiness is unusual.

Steve

3849. FS: 5876 / 5876A pencil triodes

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-19 15:53:07 UTC
From: ovrreactor@aol.com
Message-ID: <20040519115307.13769.00001156@mb-m26.aol.com>
Source record: 26036

I have a stash of eleven (11) type 5876 and 5876A pencil triodes that I want to sell. All of them are NOS/NIB.

Asking $80, shipping included (US buyers only).

I am NOT a frequent poster, so if you are interested, PLEASE RESPOND BY EMAIL to <OvrReactor@aol.com>.

Regards,
Tom Mitchell
website - http://members.aol.com/ecc81

3850. Re: Microwave Software

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-19 17:20:12 UTC
From: Bob Stein <bobXstein@sbcglobal.net>
Message-ID: <2h1jacF7lb2gU1@uni-berlin.de>
Source record: 26037

Leland C. Scott wrote:

> Is there a source for Puff 2.1 in the USA currently. I know it is no longer
> avaiabe from Professor Dave Rutledge at Caltech Institute. I don't want to
> buy the two the books
>
> http://www.its.caltech.edu/%7Emmic/puffindex/puffform.html
>
> that have included it just for the software.

I have version 1.0. If you can use that, I will be happy to email it to
you.

Bob

--
Remove spam-suppression X from my address

3851. Re: Microwave Software

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-19 18:06:12 UTC
From: Leon Heller <leon_heller@hotmail.com>
Message-ID: <40aba215$0$25319$cc9e4d1f@news-text.dial.pipex.com>
Source record: 26038

"Leland C. Scott" <kc8ldo@arrl.net> wrote in message
news:04SdncK27cc1YTfdRVn_iw@comcast.com...
> Is there a source for Puff 2.1 in the USA currently. I know it is no
longer
> avaiabe from Professor Dave Rutledge at Caltech Institute. I don't want to
> buy the two the books

Have a look at Ansoft Designer SV. It's free (intended for students)
although the full version costs lots of $$$.

73, Leon
--
Leon Heller, G1HSM
http://www.geocities.com/leon_heller

3852. cancel <40aba02a$1@wobble>

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-19 18:58:57 UTC
From: k6jq@arrl.net
Message-ID: <40aba061@wobble>
Source record: 26033

```
This message was cancelled from within Mozilla.
```

3853. Re: Microwave Software

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-19 19:41:48 UTC
From: "Leland C. Scott" <kc8ldo@arrl.net>
Message-ID: <Y7mdnTgmEeLnJTbdRVn_iw@comcast.com>
Source record: 26039

"Bob Stein" <bobXstein@sbcglobal.net> wrote in message
news:2h1jacF7lb2gU1@uni-berlin.de...
> Leland C. Scott wrote:
>
> > Is there a source for Puff 2.1 in the USA currently. I know it is no
longer
> > avaiabe from Professor Dave Rutledge at Caltech Institute. I don't want
to
> > buy the two the books
> >
> > http://www.its.caltech.edu/%7Emmic/puffindex/puffform.html
> >
> > that have included it just for the software.
> I have version 1.0. If you can use that, I will be happy to email it to
> you.
>
> Bob

Thanks Bob. I would like to try version 1.0 and see if it meets my needs.
You can E-mail it to kc8ldo@arrl.net .

73 de
Leland C. Scott
KC8LDO

Wireless Network
Mobile computing
on the go brought
to you by Micro$oft
>
> --
> Remove spam-suppression X from my address
>

3854. Re: Microwave Software

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-19 19:44:37 UTC
From: "Leland C. Scott" <kc8ldo@arrl.net>
Message-ID: <6Y6dnYxytPO_JDbdRVn-ug@comcast.com>
Source record: 26040

Thanks. I was just reading about it in a couple of new books I just got,
"Microwave Projects" and "International Microwave Handbook", both from RSGB.

73 de
Leland C. Scott
KC8LDO

Wireless Network
Mobile computing
on the go brought
to you by Micro$oft

"Leon Heller" <leon_heller@hotmail.com> wrote in message
news:40aba215$0$25319$cc9e4d1f@news-text.dial.pipex.com...
> "Leland C. Scott" <kc8ldo@arrl.net> wrote in message
> news:04SdncK27cc1YTfdRVn_iw@comcast.com...
> > Is there a source for Puff 2.1 in the USA currently. I know it is no
> longer
> > avaiabe from Professor Dave Rutledge at Caltech Institute. I don't want
to
> > buy the two the books
>
> Have a look at Ansoft Designer SV. It's free (intended for students)
> although the full version costs lots of $$$.
>
> 73, Leon
> --
> Leon Heller, G1HSM
> http://www.geocities.com/leon_heller
>
>

3855. Re: Improve handheld audio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-19 20:58:11 UTC
From: upand_at_them@yahoo.com
Message-ID: <e89ab718.0405191258.438cbf3c@posting.google.com>
Source record: 26041

Thanks for the good advice from both you and Dave Platt. I'll try lowering the volume and see if that has any effect.

There's no power save mode or any +5 KHz switch; the radio is very simple with just a squelch, volume, and transmitting Hi/Lo switch. And the thumbdials for the frequency. I experimented with the Hi/Lo switch just to rule that out too.

I took a look inside the radio and it's all discrete components. The audio even sounds pretty good (to my ears). And I can transmit packets from my Yaesu VX-2R to the Icoms from within my apartment with good decoding.

Can I build a simple filter that removes everything except 1200/2200Hz tones?

Mike

3856. Re: Improve handheld audio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-19 21:22:47 UTC
From: dplatt@radagast.org
Message-ID: <10ank17qmdf448a@corp.supernews.com>
Source record: 26042

>Thanks for the good advice from both you and Dave Platt. I'll try
>lowering the volume and see if that has any effect.

I'm going to bet that this will probably help matters a lot.

>I took a look inside the radio and it's all discrete components. The
>audio even sounds pretty good (to my ears). And I can transmit
>packets from my Yaesu VX-2R to the Icoms from within my apartment with
>good decoding.

If you can gain short-term access to an oscilloscope, it'd be beneficial to simply watch the waveform coming out of the audio-out jack. Tune to a busy packet frequency (144.390 will usually get you boatloads of APRS packets), slowly turn up the volume control, and find the point at which the audio waveform stops increasing in amplitude and begins exhibiting a flattening-off of the tops and bottoms. At this point, your signal is clipping - you definitely want the volume control turned down below this point. Further reductions may be beneficial if you're accidentally overdriving the TNC's audio input circuitry.

>Can I build a simple filter that removes everything except 1200/2200Hz
>tones?

It's possible, but it's not necessarily trivial. It can be done fairly easily with active electronics (i.e. one op amp and a dozen or so passive parts). Take a look at www.tnc-x.com and pull up the schematic - the receive-audio filter is implemented by U4 and the parts around it.

It can also be done with a strictly passive circuit, requiring no power, but that's a bit more involved, and will probably require some fairly large audio inductors.

What you'll want, in either case, is a bandpass filter which passes roughly 1000 - 2500 Hz, and rolls off both the low and high frequencies on either side of that passband.

A well-designed TNC should already have this sort of bandpass filtering built into its input circuit, I think - adding an outboard filter between radio and TNC ought not to be necessary.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

3857. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-19 22:38:51 UTC
From: averyfineman@aol.com
Message-ID: <20040519183851.29868.00001365@mb-m07.aol.com>
Source record: 26043

In article <5249fb3f.0405190508.f0b10d4@posting.google.com>,
skavanagh72nospam@yahoo.ca (Steve Kavanagh) writes:

>Thanks for all your comments. Since speculation has started here is
>what I know about the capacitors.
>
>Those used in the 2.5 GHz source are surplus from a company that makes
>high quality stuff. They were probably procured to a military or
>space specification but I am not sure. The 10.5 GHz source was
>manufactured by MA/COM about 20 years ago. All of them are the usual
>deep maroon (is that the right word ?) to brown colour.
>
>Keep in mind I am being pretty picky. I consider short term frequency
>jumps of much over 100 Hz to be unsatisfactory - that is 10-40 parts
>per billion depending on which source is considered. The largest
>observed jumps are about ten times this. Of course, since these are
>crystal oscillators, the corresponding capacitance jumps must be much
>larger, since the crystal should dominate the oscillator stability. I
>would not consider them "crappy", just not as good as one might be led
>to expect. I have used capacitors from the same provenance as those
>in the 2.5 GHz source in LC oscillators at a few MHz with no observed
>problems. The smooth portion of the warm-up drift is reasonably
>normal in both cases...only the jumpiness is unusual.

Coming in at the end of this discussion, I'll have to question the observation of the so-called "frequency jump." At 100 PPB we are talking quite serious test equipment hook-ups and a number of different techniques very much uncommon in home workshop practice.

If you are locking the X-band source to a crystal reference, then there is a great deal of this frequency-control subsystem which can be a cause for the "jumps." That can be the sampler or prescaler, the phase detector (assuming it is a form of PLL), the loop filter, and even the power supply rail voltage (affecting the voltage control of the presumed voltage-controlled frequency adjuster circuit). ANY of those can be the culprit in small frequency "jumps." That would include whatever it is you are using to heterodyne with the X-band source to enable frequency measurement.

I'm going to question all those others' claims about "jumpy silver mica capacitors" after about 54 years of having hands-on experience in RF and pulse circuitry. I'm talking primarily the "dipped" coating DMs with some excursions into the molded plastic case axial lead models. I've never had one either open or

shorted and never "jumpy" in value and that includes the full-on military environment testing of temperature, altitude, shock, vibration, etc. A very few were found not quite within the capacity value tolerance and not a single one experienced any "jumping" of value. I've not heard of any such stories from contemporaries in the industry...and I HAVE heard lots of urban-myth stories on other things within all of electronics.

Len Anderson
retired (from regular hours) electronic engineer person

3858. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 02:24:29 UTC
From: qrk <SpamTrap@reson.com>
Message-ID: <kd4oa0ldgi0j07dsiodvjgd524lpqkdl0m@4ax.com>
Source record: 26044
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 19 May 2004 06:08:37 -0700, skavanagh72nospam@yahoo.ca (Steve Kavanagh) wrote:

>Thanks for all your comments. Since speculation has started here is
>what I know about the capacitors.
>
>Those used in the 2.5 GHz source are surplus from a company that makes
>high quality stuff. They were probably procured to a military or
>space specification but I am not sure. The 10.5 GHz source was
>manufactured by MA/COM about 20 years ago. All of them are the usual
>deep maroon (is that the right word ?) to brown colour.
>
>Keep in mind I am being pretty picky. I consider short term frequency
>jumps of much over 100 Hz to be unsatisfactory - that is 10-40 parts
>per billion depending on which source is considered. The largest
>observed jumps are about ten times this. Of course, since these are
>crystal oscillators, the corresponding capacitance jumps must be much
>larger, since the crystal should dominate the oscillator stability. I
>would not consider them "crappy", just not as good as one might be led
>to expect. I have used capacitors from the same provenance as those
>in the 2.5 GHz source in LC oscillators at a few MHz with no observed
>problems. The smooth portion of the warm-up drift is reasonably
>normal in both cases...only the jumpiness is unusual.
>
>Steve

Crystals can also jump. Just look at HP oven oscillators used in the GPS time/frequency references. Very jumpy. A collegue tried 5 oscillators in the GPS time/freq reference and all were jumpy to various degrees. He was noting sub-ppb jumps.

Mark

3859. Re: Improve handheld audio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 02:32:52 UTC
From: upand_at_them@yahoo.com
Message-ID: <e89ab718.0405191832.2ca12e77@posting.google.com>
Source record: 26045

Well, I should point out that I'm not using a regular TNC. I'm using
this: http://www.ringolake.com/pic_proj/zcd/zcdmodem.html

It has worked very well with my little mighty Yaesu VX-2R, just not
with the Icom IC-2N.

Did try the volume this evening...I was only able to decode packets
with the volume at least 3/4ths. And even then it wasn't packets from
the local repeater, but from my Yaesu in the other room.

Mike

dplatt@radagast.org (Dave Platt) wrote in message
news:<10ank17qmdf448a@corp.supernews.com>...
> >Thanks for the good advice from both you and Dave Platt. I'll try
> >lowering the volume and see if that has any effect.
>
> I'm going to bet that this will probably help matters a lot.
>
> >I took a look inside the radio and it's all discrete components. The
> >audio even sounds pretty good (to my ears). And I can transmit
> >packets from my Yaesu VX-2R to the Icoms from within my apartment with
> >good decoding.
>
> If you can gain short-term access to an oscilloscope, it'd be
> beneficial to simply watch the waveform coming out of the audio-out
> jack. Tune to a busy packet frequency (144.390 will usually get you
> boatloads of APRS packets), slowly turn up the volume control, and
> find the point at which the audio waveform stops increasing in
> amplitude and begins exhibiting a flattening-off of the tops and
> bottoms. At this point, your signal is clipping - you definitely want
> the volume control turned down below this point. Further reductions
> may be beneficial if you're accidentally overdriving the TNC's audio
> input circuitry.
>
> >Can I build a simple filter that removes everything except 1200/2200Hz
> >tones?
>
> It's possible, but it's not necessarily trivial. It can be done
> fairly easily with active electronics (i.e. one op amp and a dozen or
> so passive parts). Take a look at www.tnc-x.com and pull up the
> schematic - the receive-audio filter is implemented by U4 and the
> parts around it.
>
> It can also be done with a strictly passive circuit, requiring no

> power, but that's a bit more involved, and will probably require some
> fairly large audio inductors.
>
> What you'll want, in either case, is a bandpass filter which passes
> roughly 1000 - 2500 Hz, and rolls off both the low and high
> frequencies on either side of that passband.
>
> A well-designed TNC should already have this sort of bandpass
> filtering built into its input circuit, I think - adding an outboard
> filter between radio and TNC ought not to be necessary.

3860. Re: Improve handheld audio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 03:33:19 UTC
From: fmmck@aol.com
Message-ID: <20040519233319.26462.00001890@mb-m07.aol.com>
Source record: 26046

<< Did try the volume this evening...I was only able to decode packets with the volume at least 3/4ths. And even then it wasn't packets from the local repeater, but from my Yaesu in the other room. >>

Mike-

That gets back to the +5KHz question. Have you ever had the frequency of the IC-2N adjusted?

If it is like the IC-2A, there is one master crystal oscillator that sets the receive frequency, and three oscillators that set transmit minus, transmit simplex and transmit plus offsets from the receive oscillator.

If the receive oscillator was off frequency, and you had adjusted a transmit offset oscillator to bring it back on frequency, then the receive frequency would still be off. Try setting the receive frequency 5 KHz higher and lower using the thumbwheel switches, and see if either makes an improvement. That would tell you the radio needs alignment.

73, Fred, K4DII

3861. Re: Selecting oscillator harmonic on multi-mode line for ultra-wideband VCO?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 03:50:22 UTC
From: Rick Karlquist N6RK <richard@karlquist.removethis.com>
Message-ID: <2WVqc.8982$zw.3009@attbi_s01>
Source record: 25949
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

I have built numerous VCO's that work as you describe.
A tuned coaxial line is used and the feedback is controlled
by a capacitor. Making the capacitor small will allow harmonic
oscillation, making it small will allow fundamental.

Since you can make say a 9th overtone crystal oscillator,
there is no reason why you can't make a 9th overtone transmission
line resonator oscillator.

Rick N6RK

"Scott Stephens" <scottxs@comcast.net> wrote in message
news:tnamc.36397$0H1.3120575@attbi_s54...
> If I have a waveguide, coax, or even lumped varactor tuned LC tank,
> could I simply select which harmonic I want it to oscillate at, by
> tunning a negative resistance?
>
> Perhaps with the use of a "register key", such as is on flutes and
> clarinets? I suppose that functions as a high-pass filter on the line,
> when the hole is unplugged.
>
> I'm interested in a multi-decade VCO, tuned with one control voltage and
> just a few switches.
>
> No, I don't want to heterodyne or synthesize, because I'm interested in
> the regenerative/super-regenerative capabilities.
>
> Any applicable app notes or articles? Dream on?
>
> --
> Scott
>
> **********
>
> DIY Piezo-Gyro, PCB Drill Bot & More Soon!
>
> http://home.comcast.net/~scottxs/
>
> **********

3862. Re: Selecting oscillator harmonic on multi-mode line for ultra-wideband VCO?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 04:38:38 UTC
From: Scott Stephens <scottxs@comcast.net>
Message-ID: <hDWqc.26611$gr.2415597@attbi_s52>
Source record: 25950
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Rick Karlquist N6RK wrote:

Finally a reply =)
thanks,

> I have built numerous VCO's that work as you describe.

No technical papers recommendations?

> A tuned coaxial line is used and the feedback is controlled
> by a capacitor. Making the capacitor small will allow harmonic
> oscillation, making it small will allow fundamental.

That was an initial thought, that, given a flat-gain amp, like a MMIC,
the coupling capacitors reactance would determine what frequency maximum
power would be transfered. The reactance the amplifier I/O impedance
matched the line I/O impedance.

> Since you can make say a 9th overtone crystal oscillator,
> there is no reason why you can't make a 9th overtone transmission
> line resonator oscillator.

I'm thinking I should try a binary weighted series-L shunt-C ladder
network, with varactors for the C. Could switch the varactors into
forward conduction to tune out the end of the line, raising the frequency.

Latest Microwave News describes a nonlinear ceramic (BaZrTiO) thin-film
voltage-tuned capacitor. I've read about articles that use common
ceramic caps as VCO's, even the capacitor-equivalent of magnetic
amplifiers. The advantage of thin films is you can fabricate
voltage-tuned filters, as well as individual caps.

Now if I could just fabricate my own, using basement PCB lithographic
techniques, or my microwave oven to plasma sputter the film.

--
Scott

****

DIY Piezo-Gyro, PCB Drill Bot & More Soon!

http://home.comcast.net/~scottxs/

****

3863. Re: Microwave Software

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 05:08:02 UTC
From: Jim Pennell <Nospam@killspam.com>
Message-ID: <S2Xqc.2203$Tn6.328@newsread1.news.pas.earthlink.net>
Source record: 25947

You may want to look for a free program called RFSIM99 which is an 'S' parameter analysis program using schematic entry. I find it useful, although I haven't tried to load microstrip matching sections yet.

It is fairly intuitive, and I see the microstrip transmission component looks to be reasonably comprehensive.

I particularly like the monte-carlo random component tolerance analysis. It's helped me to make sure my designs will be easy to build and likely to work.

I am sure Ansoft Designer SV is a more powerful program, but for most of the things I do, RFSIM99 is nice.

Jim Pennell
N6BIU

3864. Re: Improve handheld audio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 05:35:44 UTC
From: dplatt@radagast.org
Message-ID: <10aogtg67m8i4a3@corp.supernews.com>
Source record: 25948

In article <e89ab718.0405191832.2ca12e77@posting.google.com>,
Radioactive Man <upand_at_them@yahoo.com> wrote:

>Well, I should point out that I'm not using a regular TNC. I'm using
>this: http://www.ringolake.com/pic_proj/zcd/zcdmodem.html
>
>It has worked very well with my little mighty Yaesu VX-2R, just not
>with the Icom IC-2N.
>
>Did try the volume this evening...I was only able to decode packets
>with the volume at least 3/4ths. And even then it wasn't packets from
>the local repeater, but from my Yaesu in the other room.

This mdemless TNC design looks to me as if it might be rather
vulnerable to the presence of high-frequency noise in the audio
signal. It's not using conventional bandpass detection, but is using
a simplified zero-crossing detector. High-frequency audio noise could
cause spurious zero crossings, which the firmware in the onboard PIC
might not be filtering out adequately. The IC-2N may have a "hotter"
receiver section which could be passing through more noise from weaker
packet stations.

First thing I might try would be adding a low-pass RC filter - one or
two stages - with a cutoff frequency of 2500 or 3000 Hz. Adding a
series capacitor to act as a high-pass filter at 800 - 1000 Hz might
also help.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

3865. Roll your own QSL cards?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 05:58:21 UTC
From: j999w@aol.com
Message-ID: <20040520015821.07978.00001291@mb-m27.aol.com>
Source record: 25956

I just printed up some homebrew QSL cards on 110lb paper on my PC. Turned out pretty good for a cheap card.

Anyone else roll their own? Tips?

jw
K9RZZ

3866. Re: Roll your own QSL cards?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 10:26:14 UTC
From: F8BOE <f8boe-8@bluemail.ch>
Message-ID: <40ac87a0$0$13934$636a15ce@news.free.fr>
Source record: 25957

Yes I do it with WB8RCR's QSL Maker.

http://www.hfradio.org/wb8rcr/

It supports the "real official" QSL dimensions (140X90mm)

73 de F8BOE Olivier ...-.-

"J999w" <j999w@aol.com> a crit dans le message de
news:20040520015821.07978.00001291@mb-m27.aol.com...
> I just printed up some homebrew QSL cards on 110lb paper on my PC. Turned
out
> pretty good for a cheap card.
>
> Anyone else roll their own? Tips?
>
> jw
> K9RZZ

3867. Re: Roll your own QSL cards?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 11:10:12 UTC
From: fmmck@aol.com
Message-ID: <20040520071012.13355.00000825@mb-m06.aol.com>
Source record: 25958

<< I just printed up some homebrew QSL cards on 110lb paper on my PC. Turned out
pretty good for a cheap card. >>

JW-

I have some Avery postcard stock with two 4" X 6" cards per sheet. I've have been meaning to print some QSLs, but haven't gotten around to it. I wonder if there are any templates around for the QSL information? I like the idea of a personalized card for each QSO, rather than hand-printing the information.

Doing it yourself is handy, but the cost may be higher than you think. If you were to have a quantity of cards printed at a print shop, they might cost less per card. There is also the issue of inkjet prints fading over time. Cards from a print shop may eventually fade, but not nearly as fast (unless your printer uses pigment-based ink).

73, Fred, K4DII

3868. FA: Something for everyone including homebrewers.

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 11:31:08 UTC
From: Philip de Cadenet <Philstheboss@thebbc.fslife.co.uk>
Message-ID: <cWdK1zL8bJrAFwQE@philstheboss.freeserve.co.uk>
Source record: 25959

Full details and photo's here:

http://tinyurl.com/mg8j

Good luck should you decide to bid.
--
Philip de Cadenet G4ZOW
Transmitters 'R' Us
http://www.transmittersrus.com

3869. Re: Roll your own QSL cards?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 12:44:01 UTC
From: Doug Smith W9WI <w9wi@invalid.invalid>
Message-ID: <40ACA808.7020306@invalid.invalid>
Source record: 25960

Fred McKenzie wrote:
> per card. There is also the issue of inkjet prints fading over time. Cards
> from a print shop may eventually fade, but not nearly as fast (unless your
> printer uses pigment-based ink).

The QSLs I received from my first QSOs 30 years ago are surviving nicely.

Ironically, the newer cards aren't doing nearly as well.

Mostly, the problem seems to have to do with computer-printed report forms and stickers. The ink on dot-matrix ribbons seems to be rather susceptible to fading. And more than one QSL with the report form printed on a mailing label seems to have lost its label.

Ink-jet printing also seems susceptible to damage from moisture. Get a bit of water on it, and who knows what'll come out!
--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com

3870. Re: Improve handheld audio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 12:48:58 UTC
From: upand_at_them@yahoo.com
Message-ID: <e89ab718.0405200448.2e75fab0@posting.google.com>
Source record: 25961

I found a picture of the IC-2AT at RigPix and, yes, my IC-2N looks a
lot like that except mine has no keyboard. And mine looks exactly
like the IC-2E, except instead of the 5k/0k switch mine says
Dial/Main.

Mike

fmmck@aol.com (Fred McKenzie) wrote in message
news:<20040519070618.08632.00001497@mb-m11.aol.com>...
> << I recently got two older Icom IC-2N HTs (2 meter) for use in decoding
> APRS packet radio. Nice radios, but I get less than 10% of packets
> decoded with either radio. >>
>
> Mike-
>
> I agree with Dave's assessment of your problem. My first thought was to turn
> down the audio level and see if that improved things. Otherwise, check to be
> sure your +5 KHz switch is off (or on if appropriate).
>
> Back around 1990, I had an IC-3AT and an IC-2AT connected in an experimental
> dual TheNet node, connecting between a 220 backbone network and local access on
> Two Meters. I never had a problem like yours.
>
> I'm not familiar with the IC-2N. Could it be a variant of the IC-2A? If not,
> then it is possible that model had a differently wired earphone jack, with a DC
> voltage on the shield terminal rather than ground. In that case, there could
> be a short circuit when connected to a TNC that had its ground also connected
> to the co-ax shield on an external antenna. I know this could be the case with
> some Radio Shack handheld radios, but have never encountered it with Icom.
>
> 73, Fred, K4DII

3871. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 13:12:49 UTC
From: skavanagh72nospam@yahoo.ca
Message-ID: <5249fb3f.0405200512.7d85ff47@posting.google.com>
Source record: 25962
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

averyfineman@aol.com (Avery Fineman) wrote in message

> Coming in at the end of this discussion, I'll have to question the
> observation of the so-called "frequency jump." At 100 PPB we are
> talking quite serious test equipment

Yes, but the equipment here is up to the task. For the 10.5 GHz case
I am using this source as a receiver LO. A second receiver is
available and both can receive a third source. Both receivers
heterodyne the signal down to audio frequencies where any frequency
steps can be easily detected by ear. The receiver with the M/ACOM LO
jumps (frequency steps) with respect to the third source while the
second receiver does not. A similar scheme was used at 2.5 GHz.
>
> If you are locking the X-band source to a crystal reference, then
> there is a great deal of this frequency-control subsystem which can
> be a cause for the "jumps." That can be the sampler or prescaler,
> the phase detector (assuming it is a form of PLL), the loop filter, and
> even the power supply rail voltage (affecting the voltage control of the
> presumed voltage-controlled frequency adjuster circuit). ANY of
> those can be the culprit in small frequency "jumps."

And from qrk:

> Crystals can also jump.

Yes, I have not yet narrowed down the search in the M/ACOM 10.5 GHz
source, but was wondering about the likelihood of the silver mica caps
being the culprit. It has a measured supply voltage sensitivity of
about 50kHz/V (post regulator). The plug-in (not soldered) crystal in
an oven would also seem to be a likely source, particularly as the
jumping seems to improve after warmup (but long after the oven reaches
temperature).
>
> I'm going to question all those others' claims about "jumpy silver
> mica capacitors" after about 54 years of having hands-on
> experience in RF and pulse circuitry.... I've never had one either open
> or shorted and never "jumpy" in value and that includes the full-on
> military environment testing of temperature, altitude, shock,
> vibration, etc. A very few were found not quite within the capacity
> value tolerance and not a single one experienced any "jumping"
> of value. I've not heard of any such stories from contemporaries
> in the industry...

Well, Tom Bruhns is the first one I have run across who has also noted this, so it can't be a very commonly experienced effect. But I am pretty sure about the source of the jumping in the 2.5 GHz source. Each silver mica capacitor replaced made it better (unless the PC board just needed the thermal cycling resulting from a few extra soldering operations).

Steve

3872. Re: Roll your own QSL cards?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 13:41:17 UTC
From: Richard Heindel <rheindel@neo.rr.com>
Message-ID: <1A2rc.1125$IJ6.512@fe2.columbus.rr.com>
Source record: 25963

I use Avery 8359 postcards, 2 per sheet, and word. Picture and return address on the front and qsl info on
the back. Works great and can be changed easily.
Richard WB8KRN

"J999w" <j999w@aol.com> wrote in message
news:20040520015821.07978.00001291@mb-m27.aol.com...
> I just printed up some homebrew QSL cards on 110lb paper on my PC. Turned out
> pretty good for a cheap card.
>
> Anyone else roll their own? Tips?
>
> jw
> K9RZZ

3873. Re: Roll your own QSL cards?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 15:36:44 UTC
From: Just Another Opinion <JAO@somewhere.net>
Message-ID: <gg4rc.82937$FI5.2940@okepread04>
Source record: 25964

Several roll ur own QSL card schemes at URL:
http://ac6v.com/dealers.htm#CRE

But if you use an inkjet printer and run high color density and print large quantities -- you will go broke buying inkjet cartridges.
Tis OK for a few cards.

For large quantities, Tis a lot more economical to use QSL card printers at URL:
http://ac6v.com/dealers.htm#QSL

I like Cheap QSL's (good looking cards)
URL: http://www.cheapqsls.com/
$10.00 a hundred No affiliation -- just a good printer

--
From one currently in the Cloaked Mode

Any clod can have the facts, but having opinions is an Art.
Charles McCabe (1856 -), San Francisco Chronicle

"J999w" <j999w@aol.com> wrote in message
news:20040520015821.07978.00001291@mb-m27.aol.com...
> I just printed up some homebrew QSL cards on 110lb paper on my PC. Turned out
> pretty good for a cheap card.
>
> Anyone else roll their own? Tips?
>
> jw
> K9RZZ

3874. Re: Selecting oscillator harmonic on multi-mode line for ultra-wideband VCO?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 15:37:11 UTC
From: Rick Karlquist N6RK <richard@karlquist.removethis.com>
Message-ID: <Hg4rc.28746$gr.2634066@attbi_s52>
Source record: 25981
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

"Scott Stephens" <scottxs@comcast.net> wrote in message
news:hDWqc.26611$gr.2415597@attbi_s52...
>
> I'm thinking I should try a binary weighted series-L shunt-C ladder
> network, with varactors for the C. Could switch the varactors into
> forward conduction to tune out the end of the line, raising the frequency.

I played with that idea on the simulator. Didn't seem to have
a lot going for it.

>
> Latest Microwave News describes a nonlinear ceramic (BaZrTiO) thin-film
> voltage-tuned capacitor. I've read about articles that use common
> ceramic caps as VCO's, even the capacitor-equivalent of magnetic
> amplifiers. The advantage of thin films is you can fabricate
> voltage-tuned filters, as well as individual caps.

I've been following those nonlinear ceramics (ie BST) for years. They
don't seem very promising as a tuning diode replacement. The Q is too
low, the tuning range is too restricted, and there are temperature problems.

Rick N6RK

3875. Re: Improve handheld audio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 17:20:57 UTC
From: upand_at_them@yahoo.com
Message-ID: <e89ab718.0405200920.59f5eebf@posting.google.com>
Source record: 25965

The IC-2N has only 10kHz steps.

Mike

fmmck@aol.com (Fred McKenzie) wrote in message
news:<20040519233319.26462.00001890@mb-m07.aol.com>...
> << Did try the volume this evening...I was only able to decode packets
> with the volume at least 3/4ths. And even then it wasn't packets from
> the local repeater, but from my Yaesu in the other room. >>
>
> Mike-
>
> That gets back to the +5KHz question. Have you ever had the frequency of the
> IC-2N adjusted?
>
> If it is like the IC-2A, there is one master crystal oscillator that sets the
> receive frequency, and three oscillators that set transmit minus, transmit
> simplex and transmit plus offsets from the receive oscillator.
>
> If the receive oscillator was off frequency, and you had adjusted a transmit
> offset oscillator to bring it back on frequency, then the receive frequency
> would still be off. Try setting the receive frequency 5 KHz higher and lower
> using the thumbwheel switches, and see if either makes an improvement. That
> would tell you the radio needs alignment.
>
> 73, Fred, K4DII

3876. Transceiver Repair in Ontario ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 17:23:03 UTC
From: Bob <nubob5001@yahoo.com>
Message-ID: <WP5rc.5354$XY6.292479@read2.cgocable.net>
Source record: 25966

Hi

Does anyone know of someone who repairs older style transceivers HF? An older Drake? I think the finals may need repair. Hopefully someone in Southern Ontario or Western New York?

Thank you

Bob

3877. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 17:44:47 UTC
From: John Miles <jmiles@pop.removethistomailme.net>
Message-ID: <MPG.1b168e65c1f34659896b7@news-central.giganews.com>
Source record: 25967

In article <20040519183851.29868.00001365@mb-m07.aol.com>,
averyfineman@aol.com says...

> Coming in at the end of this discussion, I'll have to question the
> observation of the so-called "frequency jump." At 100 PPB we are
> talking quite serious test equipment hook-ups and a number of
> different techniques very much uncommon in home workshop
> practice.

Not really. If he's working with a 1296 MHz SSB rig, for instance, then
he's not going to be happy with 100 Hz jumps.

-- jm

---
http://www.qsl.net/ke5fx
Note: My E-mail address has been altered to avoid spam

3878. Low power video transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 17:57:54 UTC
From: "Daniel Kelly (AKA Jack)" <d.kellyNOSPAM@NOSPAM.ucl.ac.uk>
Message-ID: <c8irhp$932$1@uns-a.ucl.ac.uk>
Source record: 25951
Cross-posted to: alt.ham-radio.marketplace,alt.ham-radio.vhf-uhf,alt.radio.broadcasting,alt.radio.broadcasting.open,alt.radio.pirate, alt.radio.uk,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

Hi guys,

From your vast collective knowledge, please could you recommend a video transmitter with the following characteristics:

* very low power consumption (<70mA), ideally running at below 7.4volts

* small size

* transmits mono audio and colour video

* transmits outside the spectrum used by WiFi (802.11b/g uses 2401-2483 MHz). In practice I guess this means the video tx must use either 800Mhz, 1400Mhz, 2300Mhz or 5800Mhz. It must be legal for use in the UK. What I'm after is a video TX that uses a "quiet" part of the spectrum. 2.4GHz certainly aint quiet (wifi, digital cordless phones, microwaves, AV transmission)!

* available in the UK

* costs less than 150 UK pounds

* comes with a compatible RX which also has very low power consumption.

Many thanks for your help,
Jack

PS
Sorry for sending to so many newsgroups. I've spent bloody ages trying to find a solution but with no luck yet so I'm eager to get as much advice as possible.

3879. Re: Low power video transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 18:02:55 UTC
From: "Daniel Kelly (AKA Jack)" <d.kellyNOSPAM@NOSPAM.ucl.ac.uk>
Message-ID: <c8irqq$h8g$1@uns-a.ucl.ac.uk>
Source record: 25952
Cross-posted to: alt.ham-radio.marketplace,alt.ham-radio.vhf-uhf,alt.radio.broadcasting,alt.radio.broadcasting.open,alt.radio.pirate, alt.radio.uk,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

I only need to transmit about 20meters.

Jack

"Daniel Kelly (AKA Jack)" <d.kellyNOSPAM@NOSPAM.ucl.ac.uk> wrote in message
news:c8irhp$932$1@uns-a.ucl.ac.uk...
> Hi guys,
>
> From your vast collective knowledge, please could you recommend a video
> transmitter with the following characteristics:
>
>
>
> * very low power consumption (<70mA), ideally running at below 7.4volts
>
> * small size
>
> * transmits mono audio and colour video
>
> * transmits outside the spectrum used by WiFi (802.11b/g uses 2401-2483
> MHz). In practice I guess this means the video tx must use either 800Mhz,
> 1400Mhz, 2300Mhz or 5800Mhz. It must be legal for use in the UK. What
I'm
> after is a video TX that uses a "quiet" part of the spectrum. 2.4GHz
> certainly aint quiet (wifi, digital cordless phones, microwaves, AV
> transmission)!
>
> * available in the UK
>
> * costs less than 150 UK pounds
>
> * comes with a compatible RX which also has very low power consumption.
>
>
>
> Many thanks for your help,
> Jack
>
>
> PS
> Sorry for sending to so many newsgroups. I've spent bloody ages trying to
> find a solution but with no luck yet so I'm eager to get as much advice as
> possible.

>
>
>
>

3880. Re: Low power video transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 18:58:31 UTC
From: * <*@*.com>
Message-ID: <2h4de7F8sqdbU1@uni-berlin.de>
Source record: 25953
Cross-posted to: alt.ham-radio.marketplace,alt.ham-radio.vhf-uhf,alt.radio.broadcasting,alt.radio.broadcasting.open,alt.radio.pirate,alt.radio.uk,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

Supercircuits (in Texas)

"Daniel Kelly (AKA Jack)" <d.kellyNOSPAM@NOSPAM.ucl.ac.uk> wrote in message
news:c8irqq$h8g$1@uns-a.ucl.ac.uk...
> I only need to transmit about 20meters.
>
> Jack
>
>
> "Daniel Kelly (AKA Jack)" <d.kellyNOSPAM@NOSPAM.ucl.ac.uk> wrote in
message
> news:c8irhp$932$1@uns-a.ucl.ac.uk...
> > Hi guys,
> >
> > From your vast collective knowledge, please could you recommend a video
> > transmitter with the following characteristics:
> >
> >
> >
> > * very low power consumption (<70mA), ideally running at below 7.4volts
> >
> > * small size
> >
> > * transmits mono audio and colour video
> >
> > * transmits outside the spectrum used by WiFi (802.11b/g uses 2401-2483
> > MHz). In practice I guess this means the video tx must use either
800Mhz,
> > 1400Mhz, 2300Mhz or 5800Mhz. It must be legal for use in the UK. What
> I'm
> > after is a video TX that uses a "quiet" part of the spectrum. 2.4GHz
> > certainly aint quiet (wifi, digital cordless phones, microwaves, AV
> > transmission)!
> >
> > * available in the UK
> >
> > * costs less than 150 UK pounds
> >
> > * comes with a compatible RX which also has very low power consumption.
> >
> >
> >
> > Many thanks for your help,

> > Jack
> >
> >
> > PS
> > Sorry for sending to so many newsgroups. I've spent bloody ages trying
to
> > find a solution but with no luck yet so I'm eager to get as much advice
as
> > possible.
> >
> >
> >
> >
>
>

3881. Re: Roll your own QSL cards?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 18:58:46 UTC
From: dplatt@radagast.org
Message-ID: <10apvv6n46ldab3@corp.supernews.com>
Source record: 25968

>I just printed up some homebrew QSL cards on 110lb paper on my PC. Turned out
>pretty good for a cheap card.
>
>Anyone else roll their own? Tips?

I did my own via some hand-coding in PostScript, sent 'em to a color
laserprinter, printed on the same sort of card stock, and chopped them
apart on a standard paper-cutter.

http://www.radagast.org/~dplatt/hamradio/qsl/ has several variants.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

3882. Re: Roll your own QSL cards?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 19:14:33 UTC
From: fazamy@aol.com
Message-ID: <51ebe59f.0405201114.6d5cf2b5@posting.google.com>
Source record: 25969

I've used Word or Word Perfect to make one master sheet consisting of 4 qsls on 8 1/2" x 11" landscape. I take that master to Office Max or Office Depot where they can copy the master with a laser printer on card stock and cut the cards as per your specs. You pay for the amount of card stock you use. (I usually get 25 sheets @ 17 cents/sheet.) And you are charged one dollar for each cut they have to make. (The cuts are made with a commercial paper cutter.)

KB2AMY

3883. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 19:32:11 UTC
From: averyfineman@aol.com
Message-ID: <20040520153211.13396.00000953@mb-m06.aol.com>
Source record: 25970

In article <5249fb3f.0405200512.7d85ff47@posting.google.com>,
skavanagh72nospam@yahoo.ca (Steve Kavanagh) writes:

>averyfineman@aol.com (Avery Fineman) wrote in message
>
>> Coming in at the end of this discussion, I'll have to question the
>> observation of the so-called "frequency jump." At 100 PPB we are
>> talking quite serious test equipment
>
>Yes, but the equipment here is up to the task. For the 10.5 GHz case
>I am using this source as a receiver LO. A second receiver is
>available and both can receive a third source. Both receivers
>heterodyne the signal down to audio frequencies where any frequency
>steps can be easily detected by ear. The receiver with the M/ACOM LO
>jumps (frequency steps) with respect to the third source while the
>second receiver does not. A similar scheme was used at 2.5 GHz.

Heterodyning down to an easier-to-use frequency range is an old,
established technique. The problem I see is one of "isolating"
the "jumping," of identifying the "jumps" in terms of time and
occurance (random or with some vague periodicity?).

A substitution method of isolation is necessary to pare down the
number of possibilities of the cause. To get into the parts-per-
billion range of stability, some elaborate measurement systems
need to be used...such as what the NTIS does to verify stability
of frequency sources. Lots of good material on their website for
this sort of thing but the site organization requires some digging
to reach it.

>And from qrk:
>
>> Crystals can also jump.
>
>Yes, I have not yet narrowed down the search in the M/ACOM 10.5 GHz
>source, but was wondering about the likelihood of the silver mica caps
>being the culprit. It has a measured supply voltage sensitivity of
>about 50kHz/V (post regulator). The plug-in (not soldered) crystal in
>an oven would also seem to be a likely source, particularly as the
>jumping seems to improve after warmup (but long after the oven reaches
>temperature).

If the supply voltage sensitivity is that value, then a 100 Hz to 1 KHz
deviation would be in the neighborhood of 2 to 20 mV supply rail
change. If, for any reason, the supply rail changes, that could cause
the frequency jumps.

>> I'm going to question all those others' claims about "jumpy silver
>> mica capacitors" after about 54 years of having hands-on
>> experience in RF and pulse circuitry.... I've never had one either
open
>> or shorted and never "jumpy" in value and that includes the full-on
>> military environment testing of temperature, altitude, shock,
>> vibration, etc. A very few were found not quite within the capacity
>> value tolerance and not a single one experienced any "jumping"
>> of value. I've not heard of any such stories from contemporaries
>> in the industry...
>
>Well, Tom Bruhns is the first one I have run across who has also noted
>this, so it can't be a very commonly experienced effect. But I am
>pretty sure about the source of the jumping in the 2.5 GHz source.
>Each silver mica capacitor replaced made it better (unless the PC
>board just needed the thermal cycling resulting from a few extra
>soldering operations).

The extra stress of capacitor replacement might have affected
some other "jump" cause, thus masking that by what you thought
might be the culprit.

I'm not doing any personal accusation thing here, just trying to get
some isolation on exactly where the possible cause might be other
than "jumpy silver micas." I have encountered such weird things as
exposed copper PCB traces gathering oxides over time, such oxides
actually bridging the supposed isulating gap between traces and
causing very minute fluctuations down in the 1 mV region with a DC
bias between conductors. On another case, of using "stiff" wire
jumpers (which were NOT entirely copper but plated nickel) in a
rotary switch assembly, the resulting temperature-sensitive voltage
(like a thermocouple junction) caused an out-of-scale drift in a
supposedly-simple meter circuit. Visual inspection would have
passed it no problem but a magnet showed an attraction to the
jumper wires indicating it was not copper. Even if the jumpers were
soldered in with good visible junctions, the thermal EMF from
dissimilar metals was enough to throw off calibration over the mild
industrial-grade temperature rating.

I'm not saying either of those conditions might be present with your
problem, just trying to illustrate weirdness that can happen. For
safety sake (of mind), I coat circuit traces around sensitive areas
such as oscillators, multivibrators, low-level DC and AC circuits with
some petroleum-based varnish (such as McCloskey's "Gym Seal")
after doing some simple, non-plated circuit board assemblies having
bare etched copper traces.

Having done a fair amount of L-, S-, and C-band RF work (that's 1 to
to 8 GHz for civilians who never bothered with the "new" military
alphabetic bands and preferred the ancient letters), and using the
heterodyning technique to bring them down to measureable regions,
I've encountered lots of different causes for oscillator instability that

ranges from supposedly-stable DC supply rails to the oxide problem mentioned to odd things such as magnetic coupling from AC cords to various ferrites used for external frequency control. Anything is suspect and, at the tolerances you need, aren't given as standard in texts.

I'd start with giving the supply rails a workup down to a gnat's eyelash on stability, both at DC and low AC. Then I'd try out the local environment, the bench, even to trying to raise the oscillator by supporting it on a small piece of plywood (might be some power wiring under the bench surface). Then it is small spritzes of cooling spray, very small in small areas. Even banging on the support with a tack hammer or equivalent weight for minor shock and vibration. Then it would evolve into going "split personality" and trying to look at the assembly critically as if you were another person just finding out about a problem and not pre-judging what "might" be happening.

Now, it MIGHT be a faulty component made by someone else, including the crystal unit, but pre-judging a "fault" is not a good way to start. I've had contemporaries relate lots of urban myth stories (like electrolytics "always go bad with time" but don't) about "cause" but those aren't always truisms. The approach has to be analytical, one of isolating all the factors that test good in order to narrow the source area to a very small one. Easy that ain't. Perseverance is an absolute must when pushing the envelope.

I have yet to discover a "jumpy silver mica capacitor" but I might find one even with over a half century of playing RF games with parts and going from the kind of micas found in old ARC-5 radios to sampling PLL loop stabilized sources using DM30s in the loop filter (but had one unidentifiable-cause varactor that was replaced but never examined in detail later).

Len Anderson
retired (from regular hours) electronic engineer person

3884. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 21:03:10 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <n8653VAO0RrAFw0p@ddwyer.demon.co.uk>
Source record: 25971
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

In article <5249fb3f.0405160606.65a3193a@posting.google.com>, Steve
Kavanagh <skavanagh72nospam@yahoo.ca> writes
>A year or so ago I was working on a microwave local oscillator (at
>about 2.5 GHz) multiplied up from a crystal oscillator near 40 MHz.
>The output was found to jump in frequency by tens or hundreds of Hz
>many times as the LO chain was warming up. I was able to reduce this
>jumping by replacing all the dipped silver mica capacitors in the
>crystal oscillator stage with NP0 ceramics. There is still a bit of
>jumping which may come from some silver micas which remain in the
>stage following the crystal oscillator.
>
>I have just been observing the same sort of frequent jumping behaviour
>(up to a kHz or so at a time) in another local oscillator (output at
>about 10.5 GHz, phase locked to a crystal oscillator around 100 MHz).
>I note that this one also has dipped silver mica caps in the crystal
>oscillator and I wonder if it too would be improved by replacing them
>with NP0 ceramics.
>
>The capacitors used in both cases are from unknown sources and were
>probably manufactured in the early 1980's.
>
>Has anyone else experienced this behaviour ?
>
>Steve (VE3SMA)
in the crystal oscillator business silver mica capacitors were known for
scintillation . The potting compound of sm capacitors was ofteen the
cause of temperature coefficient drift. Scintilation was probably due to
delamination of the mica.
Modern NPO ceramic are probably better particularly unencapsulated
surface mount.

--
ddwyer

3885. DC saturation for ferrite cores

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 21:29:02 UTC
From: J M Noeding <la8ak@online.no>
Message-ID: <og8qa0d4tj34cseic73s5fa9hf1lfo1k6o@4ax.com>
Source record: 25988

Hi
have noted the following measurement (from LA7MI) forAmidon
FB43-4301, and wonder if someone knows more available data for actual
ferrite- and iron-powder cores to be used in transmitters?

For a Amidon FB43-4301 the inductance drops by 50% for 1.2At. 3At for
75% reduction. One should keep the DC-current below the value of 0.5A
to keep the reduction below 0.5. In the example above this rule is
used, but the best is to use push-pull arrangement and the DC
magnitation is kept to a minimum level. The inductance reduction is
stored and the effect is called remanence, cores used for direct
current should have air-gap

Will write a page - http://www.noding.com/pictures/la8ak/n12.htm for
constructing RF power amplifier based on an article written by LA7MI
and distributed to a local London radio club in 1992

73
Jan-Martin
LA8AK
http://home.online.no/~la8ak/c.htm

3886. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 22:07:08 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c8jaadauc1@newshost.mot.com>
Source record: 25972
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

"Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote in message
news:c8ijr6$6na$1@newshost.mot.com...
> Recently I mentioned this old bird and just remembered I got a picture off
> the net from here
>
> http://oak.cats.ohiou.edu/~postr/bapix/SpaceSpn.html
>
> Other links @
> http://ilectric.com/glance/Recreation/Radio/Amateur/Boatanchors/Knight/
>
> I also found a schematic, but don't know the link.
>
> Enjoy
>

Found the schematic:

http://www.qsl.net/kb7rgg/allied/schematics/spacespanner.gif

> --
> Steve N, K,9;d, c. i My email has no u's.
>
>

3887. Re: Low power video transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 22:30:10 UTC
From: Larry Gadbois <lgadbois@earthlink.net>
Message-ID: <Sjarc.23275$KE6.13645@newsread3.news.atl.earthlink.net>
Source record: 25954
Cross-posted to: alt.ham-radio.marketplace,alt.ham-radio.vhf-uhf,alt.radio.broadcasting,alt.radio.broadcasting.open,alt.radio.pirate, alt.radio.uk,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

Use the 2.4Ghz video system from Radio Shack. Wi-Fi is a spread spectrum signal and will not interfere with the video. The Radio Shack system won't cause a problem with the Wi-Fi.

"Daniel Kelly (AKA Jack)" <d.kellyNOSPAM@NOSPAM.ucl.ac.uk> wrote in message news:c8irhp$932$1@uns-a.ucl.ac.uk...
> Hi guys,
>
> From your vast collective knowledge, please could you recommend a video
> transmitter with the following characteristics:
>
>
>
> * very low power consumption (<70mA), ideally running at below 7.4volts
>
> * small size
>
> * transmits mono audio and colour video
>
> * transmits outside the spectrum used by WiFi (802.11b/g uses 2401-2483
> MHz). In practice I guess this means the video tx must use either 800Mhz,
> 1400Mhz, 2300Mhz or 5800Mhz. It must be legal for use in the UK. What
I'm
> after is a video TX that uses a "quiet" part of the spectrum. 2.4GHz
> certainly aint quiet (wifi, digital cordless phones, microwaves, AV
> transmission)!
>
> * available in the UK
>
> * costs less than 150 UK pounds
>
> * comes with a compatible RX which also has very low power consumption.
>
>
>
> Many thanks for your help,
> Jack
>
>
> PS
> Sorry for sending to so many newsgroups. I've spent bloody ages trying to
> find a solution but with no luck yet so I'm eager to get as much advice as
> possible.

>
>
>
>

3888. Re: Roll your own QSL cards?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-20 22:42:29 UTC
From: Allodoxaphobia <bit-bucket@config.com>
Message-ID: <slrncaqd2l.289r.bit-bucket@localhost.config.com>
Source record: 25973

On 20 May 2004 05:58:21 GMT, J999w hath writ:
> I just printed up some homebrew QSL cards on 110lb paper on my PC. Turned out
> pretty good for a cheap card.
>
> Anyone else roll their own? Tips?

I make my own using WordStar 6.0 running in a DOS box under OS/2.
Print'em on an HP LJ III printer.
Artwork? Luckily I live in a "rectangular" state. HI!HI!

But, I _do_ make'em specific for use. I.e, a stack of 6M cards, a
stack of 2M cards, a stack of OMISS Net cards, a stack of Mobile
cards, und so weiter...

73
Jonesy
--
| Marvin L Jones | jonz | W3DHJ | OS/2
| Gunnison, Colorado | @ | Jonesy | linux __
| 7,703' -- 2,345m | config.com | DM68mn SK

3889. Re: pulse transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-21 00:06:22 UTC
From: J M Noeding <la8ak@online.no>
Message-ID: <a7aqa09k98n9p8296e75scr7rj88vlpb26@4ax.com>
Source record: 25989

They might be useful in the range 20-200kHz with 50 ohm, see the notes
on http://www.noding.com/pictures/la8ak/n12.htm where it is some notes
to describe inductance requirements for toroid transformers
(all text is not written, tried to use word, but it was a disaster, so
I have to wait and look for another html editor to finish the page)

Many of us have already confirmed that pulse transformers may work
perfectly well in linear circuits, so I wonder if the comments that
they shouldn't is only based on lack of practical experience, any
ferrite transformers may even be used as memory for old type computers

73
Jan-Martin

On Sat, 15 May 2004 16:38:46 -0400, Ken Scharf
<wa2mzeNOTTHIS@bellsouth.net> wrote:

>I discovered a lot of pulse transformers. They appear to have primary
>and secondary inductance of about 1.5mh and a ratio of 1:1ct
>
>I wonder if they could be used as broadband rf transformers
>to make homebrew diode ring mixers?

3890. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-21 02:43:11 UTC
From: qrk <SpamTrap@reson.com>
Message-ID: <hnqqa0hh3ck7c6r9pq0no4cu3rkq34gocm@4ax.com>
Source record: 25974
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

On 20 May 2004 06:12:49 -0700, skavanagh72nospam@yahoo.ca (Steve Kavanagh) wrote:

[snippage]
>Well, Tom Bruhns is the first one I have run across who has also noted
>this, so it can't be a very commonly experienced effect.
[snippage]
>
>Steve

I doubt that many people would notice ppb changes and jumps. This takes a bit of patience and ruling out bad test equipment/setup to observe this phenomena.

Mark

3891. Loose connection inside D cell battery

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-21 03:07:32 UTC
From: Gary Schafer <gaschafer@comcast.net>
Message-ID: <1gsqa01rutqt9blmhlc25fs28chpbuecrv@4ax.com>
Source record: 25975

Anybody ever see a D cell flashlight battery with a poor connection
inside?
I had a flashlight that was giving me fits. The light would always
fade out or quite at the most inopportune time. A shake or bang would
sometimes get it working again.
I cleaned battery connections and every other connection inside the
flashlight. No help.

Finally when I had the batteries out I happened to shake one and it
sounded like liquid inside. There was a rattle in it! It was a
duracell alkaline. The battery still had good voltage but an
intermittent connection inside.

New batteries solved the problem. Anyone else ever hear of a problem
like that with D cells?

73
Gary K4FMX

3892. Digital phone on 2m?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-21 03:47:12 UTC
From: Joel Kolstad <JKolstad71HatesSpam@Yahoo.Com>
Message-ID: <c8jtvu$u6s$1@news.oregonstate.edu>
Source record: 25976

I was just wondering... with all the excitment that the shortwave (listening) community seems to be having down on HF with digital radio Mondiale (DRM), have people been experimenting with similar digital voice encoding/decoding on 2m? It seems as though DRM-style radio would pass through many current repeaters without difficulty (being spectrally efficient) and be especially valuable in handitalkies that don't yet typically have DSP processing to clean up the audio.

---Joel Kolstad

3893. Re: Selecting oscillator harmonic on multi-mode line for ultra-wideband VCO?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-21 04:22:53 UTC
From: Scott Stephens <scottxs@comcast.net>
Message-ID: <xufrc.87226$536.14704068@attbi_s03>
Source record: 25982
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

Rick Karlquist N6RK wrote:

>>I'm thinking I should try a binary weighted series-L shunt-C ladder
>>network, with varactors for the C. Could switch the varactors into
>>forward conduction to tune out the end of the line, raising the frequency.
>
> I played with that idea on the simulator. Didn't seem to have
> a lot going for it.

I just did an FFT on a step-pulse on a diode-switched, binary weighted
LC ladder. Came out as I expected. Problem is the high-frequency
resonances exist on when the low frequency sections are not shorted.
Which will make transistor oscillator design interesting, if I don't use
a 50 ohm MMIC.

> I've been following those nonlinear ceramics (ie BST) for years. They
> don't seem very promising as a tuning diode replacement. The Q is too
> low, the tuning range is too restricted, and there are temperature problems.

The latest Microwave News article showed the Q as being better than
varactor Q's, of under 10, IIRC.

--
Scott KB9ETU

****

DIY Piezo-Gyro, PCB Drill Bot & More Soon!

http://home.comcast.net/~scottxs/

****

3894. Re: Superfast Power MOSFETs for a Linear Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-21 05:41:31 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <10ar5keihp56j3d@corp.supernews.com>
Source record: 25983
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

I've successfully used a complementary-symmetry driver for an MRF510 at 20 and 15 meters, class C, 5 watts out. The driver is essentially digital, being driven to the rails.

Roy Lewallen, W7EL

Paul Burridge wrote:
> Indeed, but there must be some current-pumping circuit that might
> assist here?

3895. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-21 06:45:16 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <3A4Bt$C8VarAFAV1@ifwtech.co.uk>
Source record: 25978
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

qrk wrote:
>On 20 May 2004 06:12:49 -0700, skavanagh72nospam@yahoo.ca (Steve
>Kavanagh) wrote:
>
>[snippage]
>>Well, Tom Bruhns is the first one I have run across who has also noted
>>this, so it can't be a very commonly experienced effect.
>[snippage]
>>
>>Steve
>
>I doubt that many people would notice ppb changes and jumps. This
>takes a bit of patience and ruling out bad test equipment/setup to
>observe this phenomena.

It has certainly been noticed by many more people than Tom.

The word "scintillation" rang a very faint bell, and Google found a
reference at:
http://www.seas.gwu.edu/~ecelabs/appnotes/PDF/refdata/page2.pdf

These scanned pages from an unknown reference book define:
"Scintillation: minute and rapid fluctuations of capacitance, formerly
exhibited by silvered mica and silvered ceramic types [of capacitors]
but overcome by modern manufacturing techniques."

Well, maybe not *totally* overcome...

This explains why we only tend to hear about the problem in very old
capacitors (probably WW2 era) or in critical applications such as
precision oscillators.

The reference to silvered-ceramic capacitors is interesting. Evidently
that scintillation problem was "overcome" more completely than for
silvered-mica, which is why NP0 ceramic are now the capacitors of choice
for oscillator applications.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.co.uk/g3sek

3896. Re: Loose connection inside D cell battery

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-21 06:51:34 UTC
From: Mike Burch <mburch46@mchsi.com>
Message-ID: <WFhrc.87784$536.14840725@attbi_s03>
Source record: 25977

I have seen this problem in quite a few flashlights and they don't seem to be brand specific either and it even includes a new maglight. It would always seem to show up when I was up in a very tight crawl space that took 20 minutes to get to :-). Maybe the D cells did get internal damage from being dropped because the symptoms were the same. Good thinking on your part, I would have never considered that.

With kind regards.

Mike Burch K8MB

Apache Junction, AZ

3897. FS: Lots of 120: VRN KS-21859-L10 DIP Switches : $ 17 Shipped

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-21 06:59:51 UTC
From: jrakar@jrakar.com
Message-ID: <a4610d73.0405202259.e96c31a@posting.google.com>
Source record: 25979

```
================================================================================

~~~ Lots of 120: VRN KS-21859-L10 DIP Switches ~~~

The price is: $ 17.00 per lot of 120

which INCLUDES the UPS shipping cost

Check out more info and pics at:

http://www.jrakar.com/glw/electronics/dipswitches/vrn.htm

Thanks,

Jerry

================================================================================

Please also check out our other pages:

Main Electronic Components page at:
http://www.jrakar.com/glw/electronics/ec.htm

Capacitors for Sale page at:
http://www.jrakar.com/glw/electronics/caps.htm

Crystals for Sale page at:
http://www.jrakar.com/glw/electronics/crystals.htm

DIP Switches for Sale page at:
http://www.jrakar.com/glw/electronics/dipswitches.htm

ICs for Sale page at:
http://www.jrakar.com/glw/electronics/ics.htm

Relays for Sale page at:
http://www.jrakar.com/glw/electronics/relays.htm

Sockets for Sale page at:
http://www.jrakar.com/glw/electronics/sockets.htm

Main Web Page at: www.jrakar.com

:: Thank You ::

================================================================================
```

3898. Re: Loose connection inside D cell battery

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-21 09:43:25 UTC
From: mike@corn2.freeserve.co.uk
Message-ID: <40adce5b.948956023@news.freeserve.net>
Source record: 25980

On Fri, 21 May 2004 06:51:34 GMT, Mike Burch <mburch46@mchsi.com>
wrote:

>
>
>I have seen this problem in quite a few flashlights and they don't seem
>to be brand specific either and it even includes a new maglight. It
>would always seem to show up when I was up in a very tight crawl space
>that took 20 minutes to get to :-). Maybe the D cells did get internal
>damage from being dropped because the symptoms were the same. Good
>thinking on your part, I would have never considered that.
>

I had a similar problem with a 5A slowblow fuse in a TCVR, on RX it
was fine, but when I went to TX the fuse acted like a re-settable and
went O/C. I spent hours looking in the TX strip for a problem ;=(

3899. Re: Low power video transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-21 11:20:52 UTC
From: Keithw <keithw@kc.rr.com>
Message-ID: <oClrc.13675$zn.267@twister.rdc-kc.rr.com>
Source record: 25955
Cross-posted to: alt.ham-radio.marketplace,alt.ham-radio.vhf-uhf,alt.radio.broadcasting,alt.radio.broadcasting.open,alt.radio.pirate,alt.radio.uk,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

D,
I know that commercial FM stations in the UK are on different channels
(even for the UK and odd for the US). How about TV stations? This might make
a difference with the equipment you'll need.

- Paying for sex is far cheaper than getting it for free. keithw...

"Daniel Kelly (AKA Jack)" <d.kellyNOSPAM@NOSPAM.ucl.ac.uk> wrote in message
news:c8irhp$932$1@uns-a.ucl.ac.uk...
> Hi guys,
>
> From your vast collective knowledge, please could you recommend a video
> transmitter with the following characteristics:

3900. Measuring Zin

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-21 14:35:21 UTC
From: David <david@orbitcoms.com>
Message-ID: <Jsorc.958$L.397@news-server.bigpond.net.au>
Source record: 25985

Hi,

Does anyone here know how I can determine Zin of 2N3866 at 150MHz, Output is matched to 140R for 200mW.

I have an RF sig gen, Spectrum analyzer, RF power meter, 300MHz scope and VSWR brdige with built-in detector.

Also, anyone know of a good site that explains RF test methods. (Measuring filter response etc)

Thanks

Regards
David

3901. Re: Loose connection inside D cell battery

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-21 18:13:36 UTC
From: RadioGuy <nospam@nospam.com>
Message-ID: <kFrrc.12532$fF3.311041@bgtnsc05-news.ops.worldnet.att.net>
Source record: 25986

Gary Schafer <gaschafer@comcast.net> wrote in message
news:1gsqa01rutqt9blmhlc25fs28chpbuecrv@4ax.com...
> Anybody ever see a D cell flashlight battery with a poor connection
> inside?
> I had a flashlight that was giving me fits. The light would always
> fade out or quite at the most inopportune time. A shake or bang would
> sometimes get it working again.
> I cleaned battery connections and every other connection inside the
> flashlight. No help.
>
> Finally when I had the batteries out I happened to shake one and it
> sounded like liquid inside. There was a rattle in it! It was a
> duracell alkaline. The battery still had good voltage but an
> intermittent connection inside.
>
> New batteries solved the problem. Anyone else ever hear of a problem
> like that with D cells?
>
> 73
> Gary K4FMX

Yes... but I had the problem on one or two occasions with 9v
batteries---Wallgreen store brand. Considering the large number of
batteries I used the issue is a minor one in my instance. BTW, those
Wallgreen batteries are a good deal, especially when they are on sale.

RG

3902. Medium wave pre selector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-21 19:52:06 UTC
From: Richard <translations@qdnet.pl>
Message-ID: <c8lnac$8vb$1@nemesis.news.tpi.pl>
Source record: 25987

Apart from Ham radio, I like DXing on many other bands, including LF and MW.

I am looking for a circuit diagam for a MW pre selector, anything would be of interest, bit if someohw has one of thoese super dooper ones that can focus donw to a few khz that wold be even better, (like the palomar MW pre selector)

Rgds
Richard
SO5GB

3903. Re: Medium wave pre selector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-22 00:46:39 UTC
From: Reg Edwards <g4fgq.regp@ZZZbtinternet.com>
Message-ID: <c8m7te$lh2$1@hercules.btinternet.com>
Source record: 25990

"Richard" <translations@qdnet.pl> wrote in message
news:c8lnac$8vb$1@nemesis.news.tpi.pl...
> Apart from Ham radio, I like DXing on many other bands, including LF and
MW.
>
> I am looking for a circuit diagam for a MW pre selector, anything would be
> of interest, bit if someohw has one of thoese super dooper ones that can
> focus donw to a few khz that wold be even better, (like the palomar MW pre
> selector)
>
> Rgds
> Richard
> SO5GB
==========

Download in a few seconds program SELECT_1 from website below and run
immediately. Also includes tuning coil design. Ideal for MW.

.....
Regards from Reg, G4FGQ
For Free Radio Design Software go to
http://www.btinternet.com/~g4fgq.regp
.....

3904. Re: Loose connection inside D cell battery

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-22 00:59:11 UTC
From: Jim Adney <jadney@vwtype3.org>
Message-ID: <9q8ta0tmvrkj7jgd5nktj7vfkg36d7383e@4ax.com>
Source record: 25991

On Fri, 21 May 2004 03:07:32 GMT Gary Schafer <gaschafer@comcast.net>
wrote:

>Anybody ever see a D cell flashlight battery with a poor connection
>inside?

I had one once which seemed to just have very high internal
resistance. It measured fine for voltage using a high impedance
voltmeter, but wouldn't get the bulb much above a dull glow. There was
no rattle to it, however, and I only solved the problem by throwing it
away.

-

Jim Adney jadney@vwtype3.org
Madison, WI 53711 USA

3905. Re: Measuring Zin

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-22 01:16:56 UTC
From: bviel <sjouk@home.nl>
Message-ID: <c8m9kg$j2k$1@news2.tilbu1.nb.home.nl>
Source record: 25992

The bridge of Wheatstone, or equivalent.
I always determine Zin too in the simulator Electronic Workbench, before I go to build
it in real.
But you can do it directly in real.
Connect a variable resistor between output generator and input 2N3866.
Add an 2 Chan. Scope, output generator to Chan 1, input 2N3866 to Chan 2.
A broadband Oscilloscope is not needed, it is the amplitude that is going to be
measured.
Turn the potentiometer until you have half the amplitude of Chan 1, on Chan 2.
Now the variable resistor equals Zin.
Power off, losen variable resistor, and measure it with your Ohm meter.
It tells you the impedance @ generator frequency.
1 Chan. Scope can do the job, you keep the amplitude of the generator in mind,
turn the potentiometer until you have half the amplitude at input 2N3866.
Use 10 :1 probes, good luck !
Source of information about RF test methods, the book Test equipment for the radio amateur RSGB author Clive Smith, not the one of the Smith Diagram, hi
!
On the internet, Google finds everything, you have to sort out things, and specify
well.
One serious source is the Agilent homepage. (Hewlett Packard)
The idea how to measure Zin comes from a course Electronics by Dirksen in Dutch.
"RF measurements, the best keeped secrets of Electronics" statement by me.
Greetings... Bas Viel.

"David" <david@orbitcoms.com> schreef in bericht
news:Jsorc.958$L.397@news-server.bigpond.net.au...
> Hi,
>
> Does anyone here know how I can determine Zin of 2N3866 at 150MHz, Output is
> matched to 140R for 200mW.
>
> I have an RF sig gen, Spectrum analyzer, RF power meter, 300MHz scope and
> VSWR brdige with built-in detector.
>
> Also, anyone know of a good site that explains RF test methods. (Measuring
> filter response etc)

>
> Thanks
>
> Regards
> David
>
>

3906. Re: Medium wave pre selector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-22 03:00:09 UTC
From: j999w@aol.com
Message-ID: <20040521230009.17672.00001131@mb-m23.aol.com>
Source record: 25993

Something like this?

http://www.ac6v.com/components.htm

Just build the first circuit without the remote.

jw
K9RZZ

3907. Re: Digital phone on 2m?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-22 03:01:29 UTC
From: j999w@aol.com
Message-ID: <20040521230129.17672.00001132@mb-m23.aol.com>
Source record: 25994

I would think that's great for strong signals, but marginal signals would be tough to listen to.

jw
K9RZZ

3908. Re: pulse transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-22 05:14:26 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <SkBrc.10222$SQ2.3526@edtnps89>
Source record: 25995

Behold, J M Noeding signalled from keyed 4-1000A filament:

> They might be useful in the range 20-200kHz with 50 ohm, see the notes
> on http://www.noding.com/pictures/la8ak/n12.htm.......

Yay! Another tubehead! :-)

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

3909. Re: Roll your own QSL cards?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-22 05:15:57 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <hmBrc.10233$SQ2.2807@edtnps89>
Source record: 25996

Before I switched to Linux, I used Print Center Deluxe (aka Newsletters,
Brocures and More!) from Expert Software.

Now I just use GIMP or Open Office 1.1

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

3910. Re: DC saturation for ferrite cores

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-22 05:17:28 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <InBrc.10244$SQ2.9626@edtnps89>
Source record: 25847

Rule of thumb: DC + ferrite = bad Karma

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

3911. Re: Medium wave pre selector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-22 05:19:28 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <ApBrc.10259$SQ2.268@edtnps89>
Source record: 25848

Here's a beauty I use:

http://www3.telus.net/small_business/Geek/6BJ6-RF-Amp.png

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

3912. Re: Medium wave pre selector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-22 07:13:05 UTC
From: j999w@aol.com
Message-ID: <20040522031305.02202.00001664@mb-m13.aol.com>
Source record: 25849

Ack ! Wrong link ... sorry.

http://users.aol.com/lwcanews/unipre.htm

jw
K9RZZ

3913. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-22 08:46:03 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <ZMb2rJALNxrAFwR4@ddwyer.demon.co.uk>
Source record: 25850
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

In article <3A4Bt$C8VarAFAV1@ifwtech.co.uk>, Ian White, G3SEK
<G3SEK@ifwtech.co.uk> writes
>qrk wrote:
>>On 20 May 2004 06:12:49 -0700, skavanagh72nospam@yahoo.ca (Steve
>>Kavanagh) wrote:
>>
>>[snippage]
>>>Well, Tom Bruhns is the first one I have run across who has also noted
>>>this, so it can't be a very commonly experienced effect.
>>[snippage]
>>>
>>>Steve
>>
>>I doubt that many people would notice ppb changes and jumps. This
>>takes a bit of patience and ruling out bad test equipment/setup to
>>observe this phenomena.
>
>It has certainly been noticed by many more people than Tom.
>
>The word "scintillation" rang a very faint bell, and Google found a
>reference at:
>http://www.seas.gwu.edu/~ecelabs/appnotes/PDF/refdata/page2.pdf
>
>These scanned pages from an unknown reference book define:
>"Scintillation: minute and rapid fluctuations of capacitance, formerly
>exhibited by silvered mica and silvered ceramic types [of capacitors]
>but overcome by modern manufacturing techniques."
>
>Well, maybe not *totally* overcome...
>
>This explains why we only tend to hear about the problem in very old
>capacitors (probably WW2 era) or in critical applications such as
>precision oscillators.
>
>The reference to silvered-ceramic capacitors is interesting. Evidently
>that scintillation problem was "overcome" more completely than for
>silvered-mica, which is why NP0 ceramic are now the capacitors of choice
>for oscillator applications.
>
>
in the crystal oscillator business silver mica capacitors were known for
scintillation . The potting compound of silvered mica capacitors was
often the cause of temperature coefficient drift. Scintilation was

probably due to delamination of the mica.
There are 2 types of mica caps cleaved mica and compressed? which powdered the mica and then re-formed. Im not sure about their relative scintillation .
Modern NPO ceramic are probably better particularly un-encapsulated surface mount.
Note that I would design an overtone crystal oscillator with only enough reactance to remove the manufacturing tolerance. This reactance does not have to be capacitative could be inductive capacitative reactance could alternatively be a varicap then the problem would be a clean varicap supply.
Note crystals can do strange things, the jumps described are too small for unwanted modes but there is the well known (to TCXO designers) band breaks these are small frequency jumps that occur at exact temperatures and are due to minor modes passing through the major mode frequency at a particular temperature. This is what limits TCXO performance. OCXO makers make sure that the set temperature is not on a bandbreak.

--
ddwyer

3914. Re: DC saturation for ferrite cores

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-22 09:22:31 UTC
From: J M Noeding <la8ak@online.no>
Message-ID: <7s6ua0d0b7cflcjmuj48tl8pfs5bt51bqv@4ax.com>
Source record: 25851

On Sat, 22 May 2004 05:17:28 GMT, Gregg <nospam@unknown.org> wrote:

>Rule of thumb: DC + ferrite = bad Karma

everything is bad task when you haven't the faintest understanding

3915. WTB: Electronic Workbench

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-22 10:35:35 UTC
From: David J Windisch <davidw@copper.net>
Message-ID: <40af2d3b_2@newsfeed.slurp.net>
Source record: 25852

No pirate copies, pls. Want to be able to register for support from
interactiv if still available.
TIA -- Dave, N3HE

3916. Re: Selecting oscillator harmonic on multi-mode line for ultra-wideband VCO?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-22 13:01:13 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <ipvoigAZ80rAFwl$@ddwyer.demon.co.uk>
Source record: 25853
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

In article <xufrc.87226$536.14704068@attbi_s03>, Scott Stephens
<scottxs@comcast.net> writes
>I just did an FFT on a step-pulse on a diode-switched, binary weighted LC
>ladder. Came out as I expected. Problem is the high-frequency resonances exist
>on when the low frequency sections are not shorted. Which will make transistor
>oscillator design interesting, if I don't use a 50 ohm MMIC.
The musical instrument analogue replicates a delay line.
A delay line oscillator can be induced to oscillate over +-180 degrees
if the overall gain is >1. A multimode delay line oscillator can be
achieved by introducing a peaked gain response at the required overtone.
Alternatively with more than 360 degrees phase shift the oscillation
which cannot change frequency instantaneously can be induced by
continuously increasing phase and jumping from 360 to 0 degrees to sweep
over multimodes.
.
--
ddwyer

3917. Yaesu FT767GX bits required ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-22 20:32:39 UTC
From: Smog <james@burrill.co.uk>
Message-ID: <c8odcm$9uh$1@news6.svr.pol.co.uk>
Source record: 25854

Hello all.
I have just taken receipt of a Yaesu FT-767GX and there are a few bits I need for it and wondered if anyone can help me with these:
One of the rubber grip covers on the small rotary knobs is missing ?
The rubber grip band around the main rotary channel selector is snapped ?
The 4x rubber feet on the base of the unit are missing ?
The 4x rubber feet (??) on the left hand side of the unit are missing ?
The 3x flaps that cover the holes, where the additional band units fit, are missing ?

Any information at all will be greatly received
--

Jim Burrill (Smogthemog)
M1BMW
Kiteaholic

www.jbphonetech.info

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.688 / Virus Database: 449 - Release Date: 18/05/2004

3918. Re: Yaesu FT767GX bits required ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-22 21:27:52 UTC
From: j999w@aol.com
Message-ID: <20040522172752.09152.00000783@mb-m17.aol.com>
Source record: 25855

Watch the classifieds, maybe you can get a parts radio. The FT736R has the same knobs.

jw
K9RZZ

3919. Re: Yaesu FT767GX bits required ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-22 21:52:00 UTC
From: "G.Beat" <now9spamgb@no.comcast.spam.net>
Message-ID: <4YPrc.95531$536.16852942@attbi_s03>
Source record: 25856

"Smog" <james@burrill.co.uk> wrote in message
news:c8odcm$9uh$1@news6.svr.pol.co.uk...
> Hello all.
> I have just taken receipt of a Yaesu FT-767GX and there are a few bits I
> need for it and wondered if anyone can help me with these:
> One of the rubber grip covers on the small rotary knobs is missing ?
> The rubber grip band around the main rotary channel selector is snapped ?
> The 4x rubber feet on the base of the unit are missing ?
> The 4x rubber feet (??) on the left hand side of the unit are missing ?
> The 3x flaps that cover the holes, where the additional band units fit,
> are
> missing ?
>
> Any information at all will be greatly received
> --

Check the Yaesu parts distributor/source (for current models) in the UK.

MANY of the identical parts you mentioned (e.g. bumpers, rubber feet) are
used on other current production Yaesu radios .. and sometimes appear on
Kenwood models with a bit of styling difference.

w9gb

3920. FA: NAT. Velvet Vernier Dial + more

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-23 00:23:13 UTC
From: Heytubeguy <heytubeguy@worldnet.att.net>
Message-ID: <R9Src.48741$hH.922276@bgtnsc04-news.ops.worldnet.att.net>
Source record: 25857

See at:

http://cgi6.ebay.com/ws/eBayISAPI.dll?ViewSellersOtherItems&userid=heytubeguy&completed=0&sort=3&since=-1&include=0&page=1&rows=25

Tnx for looking, heytubeguy

3921. FA: 6JS6C X2, VT-25/10Y X2 + MORE

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-23 00:23:48 UTC
From: Heytubeguy <heytubeguy@worldnet.att.net>
Message-ID: <oaSrc.48744$hH.923608@bgtnsc04-news.ops.worldnet.att.net>
Source record: 25858

See at:

http://cgi6.ebay.com/ws/eBayISAPI.dll?ViewSellersOtherItems&userid=heytubeguy&completed=0&sort=3&since=-1&include=0&page=1&rows=25

Tnx for looking, heytubeguy

3922. FA:J. MILLEN Plug-in xmtr Coil set + more

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-23 00:24:49 UTC
From: Heytubeguy <heytubeguy@worldnet.att.net>
Message-ID: <lbSrc.48747$hH.923735@bgtnsc04-news.ops.worldnet.att.net>
Source record: 25859

See at:

http://cgi6.ebay.com/ws/eBayISAPI.dll?ViewSellersOtherItems&userid=heytubeguy&completed=0&sort=3&since=-1&include=0&page=1&rows=25

Tnx for looking, heytubeguy

3923. Calibratable Field Strength Meter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-23 04:33:28 UTC
From: Ed Bailen <n5kzw@arrl.net>
Message-ID: <2s90b0lrveet5e0014vfjs8r4ffegnb3b4@4ax.com>
Source record: 25860

My wife recently had a defibrillator implanted. The folks that manufactured it kindly sent her an email discussing the varoius bands and field strengths it had been tested against E field and H field). She is concerned about exposure to RF both from our mobile VHF and HF operations, and from the un-shielded multi-gigahertz processors in her lab. We would like to come up with an absolute (not relative) field strength meter that we can use to evaluate field strengths (mainly E field) at various frequencies. I could not find anything on Google.

I can cobble something together wirh an antenna, a tuned front end, a detector, and a peak sampler, but how to calibrate it?

Any suggestions?

TNX Ed Bailen - N5KZW

3924. Re: Selecting oscillator harmonic on multi-mode line for ultra-wideband VCO?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-23 05:36:27 UTC
From: Scott Stephens <scottxs@comcast.net>
Message-ID: <vLWrc.13935$JC5.1310262@attbi_s54>
Source record: 25861
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

ddwyer wrote:

> A multimode delay line oscillator can be
> achieved by introducing a peaked gain response at the required overtone.

How? A tuned filter? There's a hole in the bucket... (circular
implementation)

> Alternatively with more than 360 degrees phase shift the oscillation
> which cannot change frequency instantaneously can be induced by
> continuously increasing phase and jumping from 360 to 0 degrees to sweep
> over multimodes.

Wha? Could you expand on that?

Thanks

--
Scott

****

DIY Piezo-Gyro, PCB Drill Bot & More Soon!

http://home.comcast.net/~scottxs/

****

3925. Re: Calibratable Field Strength Meter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-23 13:33:20 UTC
From: ablight@alphalink.com.au
Message-ID: <1fc7b362.0405230533.4eb8f003@posting.google.com>
Source record: 25862

Ed Bailen <n5kzw@arrl.net> wrote in message
news:<2s90b0lrveet5e0014vfjs8r4ffegnb3b4@4ax.com>...
> My wife recently had a defibrillator implanted. The folks that
> manufactured it kindly sent her an email discussing the varoius bands
> and field strengths it had been tested against E field and H field).
> She is concerned about exposure to RF both from our mobile VHF and HF
> operations, and from the un-shielded multi-gigahertz processors in her
> lab. We would like to come up with an absolute (not relative) field
> strength meter that we can use to evaluate field strengths (mainly E
> field) at various frequencies. I could not find anything on Google.
>
> I can cobble something together wirh an antenna, a tuned front end, a
> detector, and a peak sampler, but how to calibrate it?
>
> Any suggestions?
>
> TNX Ed Bailen - N5KZW

Hi Ed,
I dont think you can, not without accesss to the proper gear in a RF shielded room (anechoic chamber?). But, and this is an educated guess, the defibrillator would be constructed to withstand fairy massive RF fields - ie, if you lived at the base of a 100Kw TV/ tranmitter. The only practical thing I can suggest is, as most of these devices can be monitered via an external pod to check operation, get your heart specialist to have his monitoring gear on it while you fire up HF/VHF whatever gear - you might have to do a bit of smooth talking, but what other option is there......

I have a friend who is in a similar position, he was a TV service tech and was told not to work on the back of TV' s because of the radiation from the line output stage - sounds a bit like bullshit, but then no manufacturer is EVER going to say its safe to do this as it would expose them to litigation if it didnt - sort of like dont ask the government for pernmission to do anything as they will always cover their backs and say no.

73 de VK3BFA Andrew.

PS - hope your wife is ok, at least she knows if anything happens it will kick in and do a "cold restart"

3926. Re: Calibratable Field Strength Meter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-23 14:06:59 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <7e2sc.7204$yc4.290@nwrdny02.gnilink.net>
Source record: 25863

First of all I'll editorialize by saying this is a paranoid fear unless she frequently travels to areas of very high RF field intensity. Secondly, a 'wearable' instrument will be a compromise, at best. A real spectrum analyzer with a calibrated antenna is what you need for 'accurate' frequency-dependent measurements.
End of editorial.

The simplest way I can think of to do this job is to use the Analog Devices 8307 log detector IC. This chip has an accurate 90 dB measurement range that goes down into the microvolt region and operates to over 1Ghz. If you built a series of these detectors, each one with a broad bandpass filter front-end for the appropriate frequency range, then you could measure all the log output DC voltages with a PIC processor and light up LED indicators when a threshold limit is exceeded. As an embellishment, you might arrange a set of, say, 6 bar-graph LED modules oriented in a vertical position side-by-side with each other. This would provide a crude spectrum analyzer display.

Joe
W3JDR

"Ed Bailen" <n5kzw@arrl.net> wrote in message
news:2s90b0lrveet5e0014vfjs8r4ffegnb3b4@4ax.com...
> My wife recently had a defibrillator implanted. The folks that
> manufactured it kindly sent her an email discussing the varoius bands
> and field strengths it had been tested against E field and H field).
> She is concerned about exposure to RF both from our mobile VHF and HF
> operations, and from the un-shielded multi-gigahertz processors in her
> lab. We would like to come up with an absolute (not relative) field
> strength meter that we can use to evaluate field strengths (mainly E
> field) at various frequencies. I could not find anything on Google.
>
> I can cobble something together wirh an antenna, a tuned front end, a
> detector, and a peak sampler, but how to calibrate it?
>
> Any suggestions?
>
> TNX Ed Bailen - N5KZW

3927. Re: Loose connection inside D cell battery

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-23 16:05:24 UTC
From: Mike Burch <mburch46@mchsi.com>
Message-ID: <8Z3sc.47069$gr.4621253@attbi_s52>
Source record: 25864

I have used that technique on quite a few circumstances. It works
pretty good. A good G-Force test against a cinder block wall never hurt
anyone and is most just good entertainment Time is money! :-)
> ---

3928. Help - My Amp Supply LK-500ZB Linear got Zapped by Lightning!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-23 17:31:52 UTC
From: Rob <noemail@pse.com>
Message-ID: <ke5sc.3396$sr3.83938@news20.bellglobal.com>
Source record: 25865

Recently my tower was hit by lightning. All my ham gear survived except one. Since I forgot to unplug my Amp Supply LK-500ZB Linear Amp from the AC power mains, the lightning found a nice way in.. (The rest of my ham gear was disconnected from the power mains and the antenna)

I wasn't sure whether that amp was affected. But when I turned it on the plate voltage was about half the normal value and the tubes were half as bright.

What is the best way to troubleshoot and repair an amp that was damaged by lightning NOT through the antenna BUT through the AC power mains?

What components will likely need to be replaced? Just the caps? What about the transformer?

Is it worth repairing in the first place?

73's
Rob

3929. Re: Help - My Amp Supply LK-500ZB Linear got Zapped by Lightning!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-23 18:04:14 UTC
From: John Popelish <jpopelish@rica.net>
Message-ID: <40B0E79E.2EE22B01@rica.net>
Source record: 25866

Rob wrote:
>
> Recently my tower was hit by lightning. All my ham gear survived except
> one. Since I forgot to unplug my Amp Supply LK-500ZB Linear Amp from the AC
> power mains, the lightning found a nice way in.. (The rest of my ham gear
> was disconnected from the power mains and the antenna)
>
> I wasn't sure whether that amp was affected. But when I turned it on the
> plate voltage was about half the normal value and the tubes were half as
> bright.
>
> What is the best way to troubleshoot and repair an amp that was damaged by
> lightning NOT through the antenna BUT through the AC power mains?
>
> What components will likely need to be replaced? Just the caps? What about
> the transformer?
>
> Is it worth repairing in the first place?
>
> 73's
> Rob

Transformer, diodes, caps are all subject to damage.

I once had a transformer damaged by a nearby strike. I decided to repair it since it was a multi winding jog that would have been hard to replace. I unwound and counted turns, measuring the wire size for each winding. This was an old style transformer with each layer, neatly flat wound on a fresh layer of paper. Everything looked fine till I got to the very first turn on the bottom winding.

It had been started sloppily, diagonally, and where it passed under other turns, the insulation was burned through. This few turn short lowered the output voltage of all the windings and after a few seconds, blew the primary fuse.

--
John Popelish

3930. Bi-directional amplifiers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-23 18:32:59 UTC
From: farhan@phonestack.com
Message-ID: <fcc11bcf.0405231032.1bd1187d@posting.google.com>
Source record: 25867

are there any resources available on design of bidirectional amps on the net?
i have read the few paragraphs in SSD and EMRFD. I am looking for some better material.
In particular, I have the following questions:
1) consider that we have two broad-band amps based on a single npn transistor with a Feedback resistor of Rf and emitter degeneration of Re. consider, further, that we simply connect them back to back and power one or the other, depending upon with direction you might want to amplify. Now, what is the total feedback resistance? is it Rf or Rf/2 (the Rf is between the inputs and the outputs and they are cross coupled, paralleling Rf resistors.
2) Suppose that the output load of a bidirectional amplifier is RL and resistor from collector to Vcc is Rc. Now, does Rc have to same as RL? I guess this is required for best power transfer. But, when the amplifier is amplifying in the opposite direction, then the amp input is paralleled by the Rc. Thus, won't the input impedance of the amp drop by two?
3) Will substituting a pi type attentuator for the load and feeding the input in the opposite direction through the same attenuator solve the problem?

- farhan

3931. $50+ speaker boxes ... why do people buy these?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-23 18:40:59 UTC
From: Doug McLaren <dougmc@frenzy.com>
Message-ID: <%e6sc.19102$KO2.17624@fe2.texas.rr.com>
Source record: 25868

So I went to the Belton, TX hamfest yesterday, and picked up a few things ...

But I saw a number of speaker boxes that people were asking as much as $70 for ... why would somebody pay this much for a speaker box? I just don't get it.

It's just a box with a speaker in it. It's about the easiest thing in the world to make yourself, or you could pick up one that was used in something like a police car for around $10 (I saw some of those too.) Or you could use one from a computer speaker (though the $3 models are probably too crappy even for ham radio use.)

Do people want something that matches their radio equipment? Are they collectors? Am I understimating the quality needed to accurately reproduce a 800 hz CW signal or a SSB conversation? :)

--
Doug McLaren, dougmc@frenzy.com "I must get up. There is much evil to do."

3932. Re: Calibratable Field Strength Meter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-23 18:43:29 UTC
From: j999w@aol.com
Message-ID: <20040523144329.07460.00002121@mb-m02.aol.com>
Source record: 25869

I would run low power in the mobile until you can ask your cardiologist or E.P. doc on the next office visit.

But hey, what's the worse that can happen? The defib goes off, she gets a shock like she got kicked by a mule, then it's over. No harm done, happens so fast you don't know it until it's over, and then you know for sure !

:^]

jw
K9RZZ

3933. Re: Calibratable Field Strength Meter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-23 18:50:59 UTC
From: R J Carpenter <rcarpen@erols.com>
Message-ID: <40b10096$0$3112$61fed72c@news.rcn.com>
Source record: 25871

I don't know the threshold specs involved, but you can crudely estimate field strength if you know transmitter power. The "impedance" of free space / air is 377 ohms. Thus the ratio of RF field voltage and current will be fixed and related to the power density - unless the field is distorted.

As another crude approximation, assume that (unless you know a radiation pattern) that the unwanted signal's power is equally distributed over a sphere or maybe a hemisphere.

The above will allow you to compute a crude approximation of field strength.

The FCC requires hams to make these calculations with transmitters above certain power thresholds.

How close does this come to the stated "safe" field strengths? I certainly wouldn't want to come as close as 20 dB (10 times voltage) to the stated thresholds.

TV/FM broadcasting stations have very little field strength directly under their tall towers. All broadcasting stations are not allowed to exceed certain field strengths on the ground outside their fenced compounds. The TV/FM stations in a hilltop residential area in Portland, OR, had to greatly increase their tower heights when this rule came into effect.

de w3otc

3934. Re: Selecting oscillator harmonic on multi-mode line for ultra-wideband VCO?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-23 19:46:14 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <qivagIAG+PsAFws$@ddwyer.demon.co.uk>
Source record: 25870
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

In article <vLWrc.13935$JC5.1310262@attbi_s54>, Scott Stephens
<scottxs@comcast.net> writes
>ddwyer wrote:
>
>
>> A multimode delay line oscillator can be
>> achieved by introducing a peaked gain response at the required overtone.
>
>How? A tuned filter? There's a hole in the bucket... (circular
>implementation)
Not quite.
The delay line can be multioctave and the phase slope will be
proportional the the delay. It may go through many 360 deg phase
rotations over its bandwidth.
An amplifier with much shallower phase slope can still have sufficient
selectivity to determine which particular 360 deg rotation is
oscillated. This has been done successfully with PAL bulk acoustic delay
lines.
The following is more contentious but I think it will work
>
>> Alternatively with more than 360 degrees phase shift the oscillation
>> which cannot change frequency instantaneously can be induced by
>> continuously increasing phase and jumping from 360 to 0 degrees to sweep
>> over multimodes.
>
>Wha? Could you expand on that?
Not a lot. progressively changing phase with varicaps cannot carry on
but the circuit does not know the difference between 360deg and 0 deg.
Goniometers? used to do this for direction finding.
Can also be done with mixers but that is more of a circular argument.

>
>Thanks
>

--
ddwyer

3935. DC saturation for ferrite cores

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-23 22:07:27 UTC
From: J M Noeding <la8ak@online.no>
Message-ID: <aph1b0tkt0n7njhpcsl46o0f3sn74rd79d@4ax.com>
Source record: 25873

Reposted due to changed URL

Hi
have noted the following measurement (from LA7MI) forAmidon
FB43-4301, and wonder if someone knows more available data for actual
ferrite- and iron-powder cores to be used in transmitters?

For a Amidon FB43-4301 the inductance drops by 50% for 1.2At. 3At for
75% reduction. One should keep the DC-current below the value of 0.5A
to keep the reduction below 0.5. In the example above this rule is
used, but the best is to use push-pull arrangement and the DC
magnitation is kept to a minimum level. The inductance reduction is
stored and the effect is called remanence, cores used for direct
current should have air-gap

Will write a page - http://www.noding.com/la8ak/12345/n12.htm (changed
URL) for constructing RF power amplifier based on an article written
by LA7MI and distributed to a local London radio club in 1992

73
Jan-Martin
LA8AK
http://home.online.no/~la8ak/c.htm

3936. Cancel "DC saturation for ferrite cores"

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-23 22:07:28 UTC
From: J M Noeding <la8ak@online.no>
Message-ID: <mth1b0d0mlk4fo0tqkuk54sekdc6b9ap8k@4ax.com>
Source record: 25872

[No readable article body recovered]

3937. Re: Medium wave pre selector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-23 22:07:28 UTC
From: J M Noeding <la8ak@online.no>
Message-ID: <bl62b0tr2g607qgaps4eap03irp34be2s6@4ax.com>
Source record: 25874

On Sat, 22 May 2004 00:46:39 +0000 (UTC), in
rec.radio.amateur.homebrew you wrote:

>
>"Richard" <translations@qdnet.pl> wrote in message
>news:c8lnac$8vb$1@nemesis.news.tpi.pl...
>> Apart from Ham radio, I like DXing on many other bands, including LF and
>MW.
>>
>> I am looking for a circuit diagam for a MW pre selector, anything would be
>> of interest, bit if someohw has one of thoese super dooper ones that can
>> focus donw to a few khz that wold be even better, (like the palomar MW pre
>> selector)
>>
>
>Download in a few seconds program SELECT_1 from website below and run
>immediately. Also includes tuning coil design. Ideal for MW.
......
>
well, it is so nice to inform about my own site, although it has
nothing to do with the request, neither does your reply

A quick calculation for a tuned circuit gave the results of a single
circuitfilter covering 500-1793kHz. Not quite as sharp as requested,
the coil turn calculation might have been right, but what does it
help?

sri, OM

73
Jan-Martin

http://www.noding.com/la8ak/12345/n13.htm

3938. Re: $50+ speaker boxes ... why do people buy these?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-23 23:36:20 UTC
From: Mike Coslo <mcoslo@adelphia.net>
Message-ID: <efednWsy9YXpqCzdRVn-sw@adelphia.com>
Source record: 25875

Doug McLaren wrote:

> So I went to the Belton, TX hamfest yesterday, and picked up a few
> things ...
>
> But I saw a number of speaker boxes that people were asking as much as
> $70 for ... why would somebody pay this much for a speaker box? I
> just don't get it.
>
> It's just a box with a speaker in it. It's about the easiest thing in
> the world to make yourself, or you could pick up one that was used in
> something like a police car for around $10 (I saw some of those too.)
> Or you could use one from a computer speaker (though the $3 models are
> probably too crappy even for ham radio use.)
>
> Do people want something that matches their radio equipment? Are they
> collectors? Am I understimating the quality needed to accurately
> reproduce a 800 hz CW signal or a SSB conversation? :)

1. Yup they are overpriced. Never understimate peoples desire to
overpay for something. Remember Hagen Dasz ice cream?

2. Lotsa coffee today? ;^) just kidding of course...

- Mike KB3EIA -

3939. Re: Help - My Amp Supply LK-500ZB Linear got Zapped by Lightning!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-24 00:59:12 UTC
From: k9sqg@aol.com
Message-ID: <20040523205912.16730.00001834@mb-m12.aol.com>
Source record: 25876

Rob,

Well, the first thing would be a visual inspection of the top and bottom sides of the chassis, with the power cord unplugged of course. My guess is that one or more diodes has opened/shorted. An ohmeter check will confirm that, same for the electrolytics. Voltage checks of the transformer will tell if it has obvious damage.

Having said that, it would be best to replace all the diodes and rectifiers and anything else with physical or electrical problems. My experience with servicing gear that has taken a lightning strike or severe surge, is that there are failed and stressed components. Some that were stressed might fail in the near future. I used to fix TVs that had such misfortune, but after 2-3 repairs over 6 months, it was obvious that continued repairs were beyond the point of diminishing returns.

Hope it works out for you.

73s,

Evan

3940. Re: Loose connection inside D cell battery

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-24 03:24:50 UTC
From: hexter@blazenet.net
Message-ID: <10b2qo2e53h6vf0@corp.supernews.com>
Source record: 25877

In article <1gsqa01rutqt9blmhlc25fs28chpbuecrv@4ax.com>, gaschafer@comcast.net says...
>
>Anybody ever see a D cell flashlight battery with a poor connection
>inside?
>I had a flashlight that was giving me fits. The light would always
>fade out or quite at the most inopportune time. A shake or bang would
>sometimes get it working again.
>I cleaned battery connections and every other connection inside the
>flashlight. No help.
>
>Finally when I had the batteries out I happened to shake one and it
>sounded like liquid inside. There was a rattle in it! It was a
>duracell alkaline. The battery still had good voltage but an
>intermittent connection inside.
>
>New batteries solved the problem. Anyone else ever hear of a problem
>like that with D cells?
>
>73
>Gary K4FMX

I have had a huge problem with alkalines stored in the refrigerator. They work well after warming back up to room temp as would be expected. Then about three days later they just open circuit!!! Have had this problem so many times that I just buy smaller quantities of batteries now. Used to buy them by the case, and keep refrigerated to increase shelf life.

3941. Re: Help - My Amp Supply LK-500ZB Linear got Zapped by Lightning!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-24 03:37:57 UTC
From: farinasinsurance@sbcglobal.net
Message-ID: <p6esc.72425$iL1.18530@newssvr25.news.prodigy.com>
Source record: 25878

Rob, you may have answered your question...you say the tubes are HALF as bright..and the plate voltage is HALF of what its supposed to be? Does it normally run on 220-240 volts? I suspect a half side open or damaged pole pig transformer. The amplifier might be fine.....

"Rob" <noemail@pse.com> wrote in message news:ke5sc.3396$sr3.83938@news20.bellglobal.com...
> Recently my tower was hit by lightning. All my ham gear survived except
> one. Since I forgot to unplug my Amp Supply LK-500ZB Linear Amp from the AC
> power mains, the lightning found a nice way in.. (The rest of my ham gear
> was disconnected from the power mains and the antenna)
>
> I wasn't sure whether that amp was affected. But when I turned it on the
> plate voltage was about half the normal value and the tubes were half as
> bright.
>
> What is the best way to troubleshoot and repair an amp that was damaged by
> lightning NOT through the antenna BUT through the AC power mains?
>
> What components will likely need to be replaced? Just the caps? What about
> the transformer?
>
> Is it worth repairing in the first place?
>
> 73's
> Rob
>
>
>

3942. Re: Selecting oscillator harmonic on multi-mode line for ultra-wideband VCO?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-24 05:15:37 UTC
From: Scott Stephens <scottxs@comcast.net>
Message-ID: <Zxfsc.20387$JC5.1799589@attbi_s54>
Source record: 25879
Cross-posted to: sci.electronics.design,rec.radio.amateur.homebrew

ddwyer wrote:

> In article <vLWrc.13935$JC5.1310262@attbi_s54>, Scott Stephens
>
>>ddwyer wrote:
>>
>>>A multimode delay line oscillator can be
>>>achieved by introducing a peaked gain response at the required overtone.

> The delay line can be multioctave and the phase slope will be
> proportional the the delay. It may go through many 360 deg phase
> rotations over its bandwidth.

The phase slope is proportional to the delay. When I think of phase
slope, I think of inductance or capacitance, reactance based phase shift.

> An amplifier with much shallower phase slope

An amplifier with broad bandwidth, having the real, resistive impedance
greater than the reactive impedance?

can still have sufficient
> selectivity to determine which particular 360 deg rotation is
> oscillated. This has been done successfully with PAL bulk acoustic delay
> lines.

I've played around with ring oscillators made from 3 (or more)
transistors, 3 FETs and my favorite, 3 CMOS unbuffered inverter gates. I
find I can tune these sine-wave ring oscillators between 8 and 20 : 1
range, by changing the bias gate voltage and source current. Perhaps
more, after I try a few tricks. 20:1 isn't bad, but I don't see why I
shouldn't be able to get 100,000:1 out of a transconductance-tuned phase
shift oscillator. I guess you'd say these have a very shallow "phase
slope".

I was hoping to use them as a wide-band tuned circuit, by setting the
gain just under the oscillation point. But I found they are very
sensitive to harmonics.

I can bet a delay line oscillator is going to have this same problem then?

I've tried several ways to make a clean wide-range sine-wave oscillator
and regenerative variable tuned circuit.

--
Scott

****

DIY Piezo-Gyro, PCB Drill Bot & More Soon!

http://home.comcast.net/~scottxs/

****

3943. Re: Medium wave pre selector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-24 05:57:25 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <1o13b055legflvf9b49k4f98025tdfsv2o@4ax.com>
Source record: 25880

On Fri, 21 May 2004 21:52:06 +0200, "Richard" <translations@qdnet.pl>
wrote:

>I am looking for a circuit diagam for a MW pre selector, anything would be
>of interest, bit if someohw has one of thoese super dooper ones that can
>focus donw to a few khz that wold be even better, (like the palomar MW pre
>selector)

I have used for LF a parallel resonant circuit followed by a
(Darlington) emitter follower driving the 50 ohm line to the receiver.
Assuming hFE=100 for each transistor, the resonant circuit loading is
about 500 kohm, thus the loading is quite small. Since the antenna was
short compared to the wavelength and thus highly capacitive, a small
10-100 pF capacitor was used to connect to the hot side of the
resonant circuit.

Although the voltage gain is only 1, it works surprisingly well due to
the large (natural and artificial) field strengths in the LF and lower
MF bands.

When using some processor controlled receiver, it is a good idea to
move the preselector (and hence the antenna connection) as far as
possible from the receiver and connect them with a shielded cable, to
prevent the receiver processor radiation from entering the high
impedance antenna connection. A 1-2 m separation helps a lot, without
making it too uncomfortable to operate.

Paul OH3LWR

3944. Re: Problems with LSB on IC706MKII

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-24 06:55:56 UTC
From: "Bob M." <no@nospam.com>
Message-ID: <a6idnW2gu9_iASzdRVn-hw@bresnan.com>
Source record: 25881
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

"chafik CN8JV" <chafik.philo@eudoramail.com> wrote in message
news:cacbc942.0405150138.5c1bc16@posting.google.com...
> hello my friends
> I am using icom 706 MKII
> on LSB, I get bad reports about
> audio and modulation quality, and the output power is too low.
> but on USB the output power is normal with good audio quality
> and modulation!
> any idea please
> thanks 73 CN8JV

Is the radio aligned properly? It's easy to check but if it's out of
alignment, it needs to go to a radio shop to be fixed since proper
calibration tools are needed.

To hear if it's aligned right:
- In AM mode, tune to a time station, such as CHU or WWV.
- Now listen to the station in both LSB and USB modes. Is the sound of the
clock tick the same, or close? If so the rig is aligned properly. If they
don't sound the same, the rig is out of alignment.

3945. Re: Microwave Software

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-24 09:18:51 UTC
From: samsvl@nlr.nl
Message-ID: <Xns94F3731851F65samsvlnlrnl@137.17.128.14>
Source record: 25882

"Leland C. Scott" <kc8ldo@arrl.net> wrote in
news:04SdncK27cc1YTfdRVn_iw@comcast.com:

> Is there a source for Puff 2.1 in the USA currently. I know it is no
> longer avaiabe from Professor Dave Rutledge at Caltech Institute. I
> don't want to buy the two the books
>
> http://www.its.caltech.edu/%7Emmic/puffindex/puffform.html
>
> that have included it just for the software.

Try http://www.gerstlauer.de/puff/

Sam

3946. Re: Help - My Amp Supply LK-500ZB Linear got Zapped by Lightning!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-24 13:44:43 UTC
From: Rob <noemail@pse.com>
Message-ID: <g%msc.14976$sr3.241957@news20.bellglobal.com>
Source record: 25883

farinasinsurance@sbcglobal.net wrote:
> Rob, you may have answered your question...you say the tubes are HALF
> as bright..and the plate voltage is HALF of what its supposed to be?
> Does it normally run on 220-240 volts? I suspect a half side open or
> damaged pole pig transformer. The amplifier might be fine.....
>

Thanks for the post. I am using 240 vots to power the amp. (Any self respecting ham would!)

Yes, I think the transformer may be gone. Like most BIG heavy transformers for HF amps, it will likely be costly to replace the transformer. But I may give it a go.

Ca you explain what you mean by a "damaged pole pig transformer". I have never heard of the term "pole pig"

But after I replace the transformer, I am worried that I may end damaging the new transformer if another component has failed or is close to failure. (e.g. a AC Filter cap or diode).
Is this a realistic fear?

Rob

3947. HP 8750A normailzer on 141T ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-24 18:40:00 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <4krsc.225$936.123@newssvr24.news.prodigy.com>
Source record: 25885
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.boatanchors,rec.radio.amateur.equipment

Can the HP 8750A normalizer be used with the HP 141T? If so what kind of interface and cable is required. I have both but no interfaces, cables or manual on the 8750A If not has anyone figured out a way to store the spectrum analyzer images on a PC?.
tnx
Hank WD5JFR

3948. Re: HP 8750A normailzer on 141T ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-24 18:56:54 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <Wzrsc.227$Yb6.206@newssvr24.news.prodigy.com>
Source record: 25886
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.boatanchors,rec.radio.amateur.equipment

Oops, I forgot to mention that my 8750A has the Network Analyzer interface
and I can't justify the cable price at the glkinst site.

-
73
Hank WD5JFR
"Henry Kolesnik" <kolesnik@sbcglobal.net> wrote in message
news:4krsc.225$936.123@newssvr24.news.prodigy.com...
> Can the HP 8750A normalizer be used with the HP 141T? If so what kind of
> interface and cable is required. I have both but no interfaces, cables or
> manual on the 8750A If not has anyone figured out a way to store the
> spectrum analyzer images on a PC?.
> tnx
> Hank WD5JFR
>
>

3949. Re: Bi-directional amplifiers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-24 19:01:47 UTC
From: averyfineman@aol.com
Message-ID: <20040524150147.03106.00002017@mb-m03.aol.com>
Source record: 25887

In article <fcc11bcf.0405231032.1bd1187d@posting.google.com>,
farhan@phonestack.com (Ashhar Farhan) writes:

>are there any resources available on design of bidirectional amps on
>the net?

Telephone (wired) repeaters are an example. Those have been used
at rather wide bandwidths but none at RF that I know of.

>i have read the few paragraphs in SSD and EMRFD. I am looking for some
>better material.

What are "SSD" and "EMRFD" acronyms?

>In particular, I have the following questions:
>1) consider that we have two broad-band amps based on a single npn
>transistor with a Feedback resistor of Rf and emitter degeneration of
>Re. consider, further, that we simply connect them back to back and
>power one or the other, depending upon with direction you might want
>to amplify. Now, what is the total feedback resistance? is it Rf or
>Rf/2 (the Rf is between the inputs and the outputs and they are cross
>coupled, paralleling Rf resistors.

Analytically model it.

You are going to have to measure the OFF transistor characteristics
yourself since few parameters other than ESD (Electro-Static
Discharge) are given on datasheets.

But...the "off" transistor might get turned partly on by the other,
"on" amplifier output signal.

>2) Suppose that the output load of a bidirectional amplifier is RL and
>resistor from collector to Vcc is Rc. Now, does Rc have to same as RL?
>I guess this is required for best power transfer. But, when the
>amplifier is amplifying in the opposite direction, then the amp input
>is paralleled by the Rc. Thus, won't the input impedance of the amp
>drop by two?

Yes and no. :-)

>3) Will substituting a pi type attentuator for the load and feeding
>the input in the opposite direction through the same attenuator solve
>the problem?

A very few bidirectional amplifiers have been built at RF, all based
on using wideband "hybrid" transformer coupling to a line, both of
them "on." The amount of amplification is limited to just less than

the best directivity of the transformer network (connected as a directional coupler)...and the relative phase shift.

"Directivity" is the relative difference (usually expressed in db) between forward and reverse direction coupling.

The limiting problem in "hybrid" transformers is the resulting phase shifts over any frequency range. That's a separate problem which can be identified, measured, and used to model the repeater amplifier. The reason such types of bidirectional amplifiers are NOT production items is: (1) Need; (2) Ability to control the phase shift over quantity.

About the only source I know of for bidirectional amplifiers, besides the telephone industry (begun before 1920), is VHF-UHF coaxial cable TV service which has "up and down" path communication, both from the "head end" and to the "head end" (for subscriber signalling for such things as pay-per-view showings or for Internet broadband access).

Len Anderson
retired (from regular hours) electronic engineer person

3950. Re: $50+ speaker boxes ... why do people buy these?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-24 19:07:38 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <_Jrsc.231$dg6.30@newssvr24.news.prodigy.com>
Source record: 25888

When the radios were new you could by matching factory speakers for about
ten to twenty dollars and most hams being frugal used what they had on hand.
Now that many of those same radios are "collectable" there are as many
speakers around as people want. Supply low price is high, just like crude
oil. I saw the speakers as I was there .
--
73
Hank WD5JFR
"Doug McLaren" <dougmc@frenzy.com> wrote in message
news:%e6sc.19102$KO2.17624@fe2.texas.rr.com...
> So I went to the Belton, TX hamfest yesterday, and picked up a few
> things ...
>
> But I saw a number of speaker boxes that people were asking as much as
> $70 for ... why would somebody pay this much for a speaker box? I
> just don't get it.
>
> It's just a box with a speaker in it. It's about the easiest thing in
> the world to make yourself, or you could pick up one that was used in
> something like a police car for around $10 (I saw some of those too.)
> Or you could use one from a computer speaker (though the $3 models are
> probably too crappy even for ham radio use.)
>
> Do people want something that matches their radio equipment? Are they
> collectors? Am I understimating the quality needed to accurately
> reproduce a 800 hz CW signal or a SSB conversation? :)
>
> --
> Doug McLaren, dougmc@frenzy.com "I must get up. There is much evil to
do."

3951. Re: Helping a Blind Ham

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-24 20:23:57 UTC
From: Jim Menning <jmenning@new.rr.com>
Message-ID: <xRssc.47018$oQ6.14092@twister.rdc-kc.rr.com>
Source record: 25889
Cross-posted to: alt.binaries.pictures.radio,alt.binaries.schematics.electronic,alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.swap

"Bunnydawg" <bunnydawg@hotmail.com> wrote in message
news:eOpsc.14624$tb4.553207@news20.bellglobal.com...
> There was a post not long ago of a ham helping a blind ham looking for an
> audio version of a service manual.
> Anyone remember that one. I have some info that might help them. I
can't
> locate the post now.
> Robert
> VE3 something or other
>
>

Maybe this will help?

http://groups.google.com/groups?q=ham+blind&ie=UTF-8&hl=en

jim menning

3952. Re: Problems with LSB on IC706MKII

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-24 21:01:09 UTC
From: bg998@FreeNet.Carleton.CA
Message-ID: <c8tnql$ot4$1@freenet9.carleton.ca>
Source record: 25890

"Bob M." (no@nospam.com) writes:
>
> To hear if it's aligned right:
> - In AM mode, tune to a time station, such as CHU or WWV.
> - Now listen to the station in both LSB and USB modes. Is the sound of the
> clock tick the same, or close? If so the rig is aligned properly. If they
> don't sound the same, the rig is out of alignment.
>

I think this check won't work using CHU. CHU transmits partial carrier
and upper sideband only, no LSB. Should be OK with WWV though.
... Martin VE3OAT

3953. Re: Helping a Blind Ham

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-24 21:50:34 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c8tqrc$3pk$1@newshost.mot.com>
Source record: 25891
Cross-posted to: alt.binaries.pictures.radio,alt.binaries.schematics.electronic,alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.swap

"Bunnydawg" <bunnydawg@hotmail.com> wrote in message
news:eOpsc.14624$tb4.553207@news20.bellglobal.com...
> There was a post not long ago of a ham helping a blind ham looking for an
> audio version of a service manual.
> Anyone remember that one. I have some info that might help them. I can't
> locate the post now.
> Robert
> VE3 something or other

Also search for the HandiHam web
--
Steve N, K,9;d, c. i My email has no u's. site.

3954. Earthquake alerting by low-cost radio monitoring

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-24 22:40:00 UTC
From: johnbartley@email.com
Message-ID: <f90c7f43.0405241440.1a427870@posting.google.com>
Source record: 25892
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

This fellow, two decades ago, worked on a cheap radio monitoring system which was studied by the USGS. He noted the study showed 70% accuracy in finding when quakes were about to happen.

http://www.rexresearch.com/tate/tate.htm#radio

3955. Hot Price for Prototype PCB

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-24 23:27:40 UTC
From: tigeryesh@hotmail.com
Message-ID: <e04d9f77.0405241527.136a587b@posting.google.com>
Source record: 25894

ONLY US65 include shipping (Lead time 5 days, FedEx need 2-3 business
days from China to North America)
MULTI-Designs ON A SIGNAL PANEL IS NOT ALLOWED
NO LIMIT ON THE NUMBER OF VIAS
MAXIMUM ONE INNER CUT PER BOARD
FREE STEP AND REPEAT SERVICE IS PROVIDE, SCORE LINES IS ALLOWED
Minimum hole size 20mil, minimum clearance 8mil.
1or 2 layers ,FR4 material 0.062",1oz copper.
Green solder mask, white silkscreen.
Total area of all boards combined less than 155inch sq. Maximum size
per board 10X14.5inch.
For example, If the area of your boards is 10 inch sq, US65 Gold
Phoenix will make 15pcs for you!.

Our website is http://ca.goldphoenixpcb.com
email:sales@goldphoenixpcb.com

3956. Re: Earthquake alerting by low-cost radio monitoring

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-24 23:28:14 UTC
From: RadioGuy <nospam@nospam.com>
Message-ID: <iyvsc.61592$hH.1116739@bgtnsc04-news.ops.worldnet.att.net>
Source record: 25895
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

John Bartley I solved my XP problems w/ Service Pack Linux
<johnbartley@email.com> wrote in message
news:f90c7f43.0405241440.1a427870@posting.google.com...
> This fellow, two decades ago, worked on a cheap radio monitoring
> system which was studied by the USGS. He noted the study showed 70%
> accuracy in finding when quakes were about to happen.
>
> http://www.rexresearch.com/tate/tate.htm#radio

Very interesting post... thank you.

I wonder if monitoring ground conductivity or ground currents can forecast a
seismic event as well.

RG

3957. wanted s/h or new motorola 2n4427's

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 01:07:16 UTC
From: zindazenda <zen@lineisp.co.uk>
Message-ID: <1085449070.822213@smtp-1.griffin.com>
Source record: 25896
Cross-posted to: rec.radio.amateur.homebrew,uk.radio.amateur

hi there..

does anyone know where I can get hold of a quantity of MOTOROLA 2n4427's??
must be Motorola because other makes just don't work in the crt I am using!!

willing to take ex equipment if necessary..looking for quite a few but will
take ant amount..cash waiting..

thanks simon g0zen

3958. Re: Problems with LSB on IC706MKII

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 02:36:45 UTC
From: Clif Holland <radio.service@verizon.net>
Message-ID: <1jysc.22819$ZQ.3350@nwrddc03.gnilink.net>
Source record: 25897
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Minor problem with the alignment scenario. There is NO ALIGNMENT for the
carrier oscillators. They come from a DDS chip controlled by the uPC.

--
Clif Holland, KA5IPF
AVVid
Authorized Kenwood and Icom Service Center
816 W Shady Grove Rd
Irving, TX 75060

www.avvid.com

1-800-214-5779
972-870-0630 (local)

"Dave Holford" <mylastname@.deletethis.sympatico.ca> wrote in message
news:40B21503.B11F4847@.deletethis.sympatico.ca...
>
>
> "Bob M." wrote:
> >
> > "chafik CN8JV" <chafik.philo@eudoramail.com> wrote in message
> > news:cacbc942.0405150138.5c1bc16@posting.google.com...
> > > hello my friends
> > > I am using icom 706 MKII
> > > on LSB, I get bad reports about
> > > audio and modulation quality, and the output power is too low.
> > > but on USB the output power is normal with good audio quality
> > > and modulation!
> > > any idea please
> > > thanks 73 CN8JV
> >
> > Is the radio aligned properly? It's easy to check but if it's out of
> > alignment, it needs to go to a radio shop to be fixed since proper
> > calibration tools are needed.
> >
> > To hear if it's aligned right:
> > - In AM mode, tune to a time station, such as CHU or WWV.
> > - Now listen to the station in both LSB and USB modes. Is the sound of
the
> > clock tick the same, or close? If so the rig is aligned properly. If
they
> > don't sound the same, the rig is out of alignment.
>

>
> Don't try it on CHU. They transmit a carrier and USB only.
>
> Dave

3959. Re: Help - My Amp Supply LK-500ZB Linear got Zapped by Lightning!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 02:44:04 UTC
From: farinasinsurance@sbcglobal.net
Message-ID: <Upysc.72631$Rb4.26364@newssvr25.news.prodigy.com>
Source record: 25898

Rob..a "pole pig" is the transformer the power company has hanging on the pole or underground. Typically the primary is between 6.8KV and 16KV. The secondary is 120--0--120 volts AC. If you lost one leg of the transformer you get only 120 volts. If the power comapny bridged BOTH leads to one 120 leg..everything in the house on 120 works fine..but the 220-240 stuff either gets ZERO or half voltage. CHeck the outlet for TWO 120 legs (to neutral) and 240 between them. It's VERY suspicious that the tubes glow half bright AND the B+ is HALF what it should be. Does the Amp use seperate filament and B+ transformers?

"Rob" <noemail@pse.com> wrote in message news:g%msc.14976$sr3.241957@news20.bellglobal.com...
> farinasinsurance@sbcglobal.net wrote:
> > Rob, you may have answered your question...you say the tubes are HALF
> > as bright..and the plate voltage is HALF of what its supposed to be?
> > Does it normally run on 220-240 volts? I suspect a half side open or
> > damaged pole pig transformer. The amplifier might be fine.....
> >
>
> Thanks for the post. I am using 240 vots to power the amp. (Any self
> respecting ham would!)
>
> Yes, I think the transformer may be gone. Like most BIG heavy transformers
> for HF amps, it will likely be costly to replace the transformer. But I may
> give it a go.
>
> Ca you explain what you mean by a "damaged pole pig transformer". I have
> never heard of the term "pole pig"
>
> But after I replace the transformer, I am worried that I may end damaging
> the new transformer if another component has failed or is close to failure.
> (e.g. a AC Filter cap or diode).
> Is this a realistic fear?
>
> Rob
>
>

3960. Re: $50+ speaker boxes ... why do people buy these?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 03:32:49 UTC
From: Wes Stewart <n7ws@_arrl.net>
Message-ID: <1gd5b01agg55lcet588h0oubjkhlkcap7d@4ax.com>
Source record: 25899

On Sun, 23 May 2004 18:40:59 GMT, "Doug McLaren" <dougmc@frenzy.com>
wrote:

|So I went to the Belton, TX hamfest yesterday, and picked up a few
|things ...
|
|But I saw a number of speaker boxes that people were asking as much as
|$70 for ... why would somebody pay this much for a speaker box? I
|just don't get it.
|
|It's just a box with a speaker in it. It's about the easiest thing in
|the world to make yourself, or you could pick up one that was used in
|something like a police car for around $10 (I saw some of those too.)
|Or you could use one from a computer speaker (though the $3 models are
|probably too crappy even for ham radio use.)
|
|Do people want something that matches their radio equipment? Are they
|collectors? Am I understimating the quality needed to accurately
|reproduce a 800 hz CW signal or a SSB conversation? :)

Apparently not according to the Parts Express catalog I received in
today's mail.

Audiophiles have ears so good that they seem to be willing to spend
$100 per foot for copper wire. (No, that's not a typo). Of course
this is "special" wire whose properties include allowing each
frequency to find its own path of least resistance.

This seems to be important even when there is only one frequency (60
Hz) involved, because the same "patented technology" allows
"incredibly fast and accurate transfer of power, blah, blah..." in a 6
foot power cord that can be had for only $492. At least it has
connectors on it, the $100/foot stuff just has spade lugs on the ends
(gold-plated of course).

For some laughs see:

http://www.soundstringcable.com/ss_product.html

It's refreshing to see that they were thoughful enough to print arrows
on the cable jacket so the electrons don't become confused and travel
in the wrong direction. This ensures uniform current and signal flow
to and from all components.

N7WS

3961. Re: Help - My Amp Supply LK-500ZB Linear got Zapped by Lightning!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 03:56:25 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <10b5gutl2to6p7d@corp.supernews.com>
Source record: 25900

farinasinsurance@sbcglobal.net wrote:

> Rob..a "pole pig" is the transformer the power company has hanging on the
> pole or underground. Typically the primary is between 6.8KV and 16KV. The
> secondary is 120--0--120 volts AC. If you lost one leg of the transformer
> you get only 120 volts. If the power comapny bridged BOTH leads to one 120
> leg..everything in the house on 120 works fine..but the 220-240 stuff either
> gets ZERO or half voltage. CHeck the outlet for TWO 120 legs (to neutral)
> and 240 between them. It's VERY suspicious that the tubes glow half bright
> AND the B+ is HALF what it should be. Does the Amp use seperate filament and
> B+ transformers?
>
> "Rob" <noemail@pse.com> wrote in message
> news:g%msc.14976$sr3.241957@news20.bellglobal.com...
>
>>farinasinsurance@sbcglobal.net wrote:
>>
>>>Rob, you may have answered your question...you say the tubes are HALF
>>>as bright..and the plate voltage is HALF of what its supposed to be?
>>>Does it normally run on 220-240 volts? I suspect a half side open or
>>>damaged pole pig transformer. The amplifier might be fine.....
>>>
>>
>>Thanks for the post. I am using 240 vots to power the amp. (Any self
>>respecting ham would!)
>>
>>Yes, I think the transformer may be gone. Like most BIG heavy
>
> transformers
>
>>for HF amps, it will likely be costly to replace the transformer. But I
>
> may
>
>>give it a go.
>>
>>Ca you explain what you mean by a "damaged pole pig transformer". I have
>>never heard of the term "pole pig"
>>
>>But after I replace the transformer, I am worried that I may end damaging
>>the new transformer if another component has failed or is close to
>
> failure.
>

>>(e.g. a AC Filter cap or diode).
>>Is this a realistic fear?
>>
>>Rob
>>
>>
>
>
>

But if it were the pole transformer don't you think he would have
mentioned that half his lights don't work and that the stove, hot water
heater and dryer aren't working like they used to?

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

3962. Re: WTB: Electronic Workbench

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 04:33:21 UTC
From: Larry Gagnon <lagagnon@fakeuniserve.com>
Message-ID: <10b5j4hid2h8dc7@corp.supernews.com>
Source record: 25901

On Sat, 22 May 2004 06:35:35 -0400, David J Windisch <davidw@copper.net> wrote:
> No pirate copies, pls. Want to be able to register for support from
> interactiv if still available.
> TIA -- Dave, N3HE
>
>

Dave: may I suggest you try SuperSpice a try. Leaves EWB for dead and is cheaper also. http://www.anasoft.co.uk

Larry VE7EA
--
****
to reply via email remove "fake"

3963. Jennings UCSXF 1500 variable caps

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 04:41:08 UTC
From: agulesin@hotmail.com
Message-ID: <62155ce7.0405242041.2566fbcd@posting.google.com>
Source record: 25902

I have located some of these beautiful creatures, anyone interested?

As I'm not experienced with such things, I don't know if there is any
market for them. Let me have your offers.

3964. Helping a Blind Ham

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 04:53:37 UTC
From: Bunnydawg <bunnydawg@hotmail.com>
Message-ID: <eOpsc.14624$tb4.553207@news20.bellglobal.com>
Source record: 25884
Cross-posted to: alt.binaries.pictures.radio,alt.binaries.schematics.electronic,alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.swap

There was a post not long ago of a ham helping a blind ham looking for an audio version of a service manual.
Anyone remember that one. I have some info that might help them. I can't locate the post now.
Robert
VE3 something or other

3965. SSB AM FM Detector IC

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 06:06:20 UTC
From: John <jmort@despammed.com>
Message-ID: <c8vgq5$r5j$1@news6.svr.pol.co.uk>
Source record: 25906

Does anyone know of a multimode detector IC that will handle SSB, AM and FM? Looking at an old ARRL handbook I can see LM373. Is there a more modern chip?

Thanks

3966. Re: Earthquake alerting by low-cost radio monitoring

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 06:23:20 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <sDBsc.25544$fF3.661203@bgtnsc05-news.ops.worldnet.att.net>
Source record: 25903
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

"John Bartley I solved my XP problems w/ Service Pack Linux"
<johnbartley@email.com> wrote in message
news:f90c7f43.0405241440.1a427870@posting.google.com...
> This fellow, two decades ago, worked on a cheap radio monitoring
> system which was studied by the USGS. He noted the study showed 70%
> accuracy in finding when quakes were about to happen.
>
> http://www.rexresearch.com/tate/tate.htm#radio

"In studying several smaller earthquakes from 1985-1987, it appeared that the larger the earthquake, the larger and sooner the precursors appeared. The 6.0 earthquake of April 24, 1984 was preceded by a radio depression 6 days before the shock. The Loma Prieta Earthquake of about 7.0 magnitude was preceded by a much greater radio depression 60 days before. A 7.0 magnitude quake is 10 times greater than a 6.0. The 60-day precursor time for the 7.0 earthquake was 10 times the precursor time for the 6.0 earthquake. More data is needed to clarify this relationship."

He may really have something here, but, absent other evidence, how can you prove correlations between events six days apart, much less 60? Further, there is no indication of where the quakes will occur. Assuming signal levels are depressed, it should be possible to monitor signal levels from several regional broadcast stations from several locations, which might help pinpoint the source of the absorption (assuming that's what it is). His claimed accuracy of 70% is only significant if it is possible to designate the area(s) in which tectonic events are pending. The seismic situation in California would probably allow that much "accuracy" through random predictions that an earthquake is about to occur.

The Schlumberger brothers pioneered modern oil-reservoir location in the 1930s by measuring ground resistance during controlled underground explosions. I believe similar methods have been used to try to detect earthquakes. The problem with this method is, you have to cover the ground with closely spaced sensors. That's hard to do in the highly populated earthquake zones of California.

"PM"

3967. Re: Earthquake alerting by low-cost radio monitoring

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 08:18:14 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <ajDsc.14958$g71.8134@clgrps13>
Source record: 25904
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

I dunno if you'll find this interesting, but along the same lines, when I
DX LW NDB's, I nowticed the strongest stations dotted fault lines.

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

3968. WTD: Yaesu FT767GX PSU board wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 10:17:37 UTC
From: Smog <james@burrill.co.uk>
Message-ID: <c8v6gkjdu1@news6.svr.pol.co.uk>
Source record: 25905
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,uk.radio.amateur

Yaesu FT767GX PSU board wanted
Thanks

--

Jim Burrill (Smogthemog)
M1BMW
Kiteaholic

www.jbphonetech.info

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.690 / Virus Database: 451 - Release Date: 22/05/2004

3969. Re: Helping a Blind Ham

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 10:54:15 UTC
From: Bunnydawg <bunnydawg@hotmail.com>
Message-ID: <74vsc.24705$tb4.716948@news20.bellglobal.com>
Source record: 25893
Cross-posted to: alt.binaries.pictures.radio,alt.binaries.schematics.electronic,alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.swap

Thanks for your help gentleman. I may have found the right one.
I know he/she was looking for a talking manual. The problem is i belong to
way too many groups and i didn't have the information at the time.
Robert
VE3 something or other

"Steve Nosko" <suteuve.nosukowicuz@moutouroula.com> wrote in message
news:c8tqrc$3pk$1@newshost.mot.com...
>
> "Bunnydawg" <bunnydawg@hotmail.com> wrote in message
> news:eOpsc.14624$tb4.553207@news20.bellglobal.com...
> > There was a post not long ago of a ham helping a blind ham looking for
an
> > audio version of a service manual.
> > Anyone remember that one. I have some info that might help them. I
can't
> > locate the post now.
> > Robert
> > VE3 something or other
>
>
> Also search for the HandiHam web
> --
> Steve N, K,9;d, c. i My email has no u's. site.
>
>

3970. Radiowillem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 14:29:48 UTC
From: William <williamgoudsmid@home.nl>
Message-ID: <c8vl50hij1@news4.tilbu1.nb.home.nl>
Source record: 25907

Check it out www.radiowillem.tk (Dutch)
and push on Ga verder.
The music is English and wath you want.
Free willem@deventersweb.nl <<<<Mail you song.

Greetz Willem

3971. Re: SSB AM FM Detector IC

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 14:46:02 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c8vm7ajna1@freenet9.carleton.ca>
Source record: 25908

"John" (jmort@despammed.com) writes:
> Does anyone know of a multimode detector IC that will handle SSB, AM and FM?
> Looking at an old ARRL handbook I can see LM373. Is there a more modern
> chip?
>
> Thanks
>
>
>
The LM373 was a whole IF strip, a variable gain stage and then a fixed gain
stage feeding the detector. The detector itself is relatively simple.

A "Gilbert Cell" mixer can be a multi-mode detector. Obviously, it's
a product detector for SSB and CW. But put the incoming signal through
a limiter and use that as the "BFO" input and you've got an AM detector
(while the 373 has a separate AM detector, the application notes even
suggest this scheme). Limit the incoming signal, and then feed it
through a suitable phase shifter into the "BFO" input, and you've got an
FM detector.

"Gilbert Cell" mixers show up in plenty of places. The MC1330 AM detector,
and all kinds of FM detector ICs (where they are used as quadrature
detectors, as I describe above)

But I suspect at this late a date, an IC designed to be a multi-mode
detector or IF is realtively rare. There is not much demand for it.
So you have to create the function yourself.

Michael VE2BVW

3972. Re: SSB AM FM Detector IC

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 15:47:32 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <oUJsc.113845$iF6.10558163@attbi_s02>
Source record: 25909

> Does anyone know of a multimode detector IC that will handle SSB, AM and
FM?
> Looking at an old ARRL handbook I can see LM373. Is there a more modern
> chip?
>
I have some 373's and I think, some 273's as well if you'd like to try your
hand at one. (free to good home)

W4ZCB

3973. Re: SSB AM FM Detector IC

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 16:23:59 UTC
From: Leon Heller <leon_heller@hotmail.com>
Message-ID: <40b3731f$0$25329$cc9e4d1f@news-text.dial.pipex.com>
Source record: 25910

"John" <jmort@despammed.com> wrote in message
news:c8vgq5$r5j$1@news6.svr.pol.co.uk...
> Does anyone know of a multimode detector IC that will handle SSB, AM and
FM?
> Looking at an old ARRL handbook I can see LM373. Is there a more modern
> chip?

You can do all those modes with a DSP. 8-)

Leon
--
Leon Heller, G1HSM
http://www.geocities.com/leon_heller

3974. ICS501

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 19:14:01 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <10b76ndq214a8b8@corp.supernews.com>
Source record: 25911
Cross-posted to: sci.electronics.components,rec.radio.amateur.homebrew

I'm looking for a small handful of ICS501 (http://www.icst.com/) clock multiplier chips to complete a couple of "Montreal Fox" boards (http://www.qsl.net/ve2emm/pic-projects/mfox/mfx501-e.html) for a friend.

Before I try to fast-talk a distributor or the manufacturer out of some samples, does anybody have any of these sitting around, or know of a catalog distributor in the US that may carry them? I'll be happy to pay a reasonable price for two to five of them.

Thanks.

--

Tim Wescott, KG7LI
Wescott Design Services
http://www.wescottdesign.com

3975. Re: Yaesu FT767GX PSU board wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 20:55:43 UTC
From: mike <mike@nospam.co.uk>
Message-ID: <rgPsc.355$3s5.354@newsfe4-win>
Source record: 25912
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,uk.radio.amateur

is it really that stuffed?

mike

"Smog" <james@burrill.co.uk> wrote in message
news:c8v6gkjdu1@news6.svr.pol.co.uk...
> Yaesu FT767GX PSU board wanted
> Thanks
>
> --
>
> Jim Burrill (Smogthemog)
> M1BMW
> Kiteaholic
>
> www.jbphonetech.info
>
>
> ---
> Outgoing mail is certified Virus Free.
> Checked by AVG anti-virus system (http://www.grisoft.com).
> Version: 6.0.690 / Virus Database: 451 - Release Date: 22/05/2004
>
>

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.690 / Virus Database: 451 - Release Date: 22/05/2004

3976. Re: Yaesu FT767GX PSU board wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 22:00:27 UTC
From: Smog <james@burrill.co.uk>
Message-ID: <c90flokgu1@news6.svr.pol.co.uk>
Source record: 25913
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,uk.radio.amateur

www.jbphonetech.info
"mike" <mike@nospam.co.uk> wrote in message
news:rgPsc.355$3s5.354@newsfe4-win...
> is it really that stuffed?
>
> mike
>

Its "tripping" Mike ? Ive studied the schematics and its a little beyond
me, normally |I can suss most faults out but this one is a right pig. I
have totally disconnected the PSU from the rest of the radio and on switch
on it will just sit there and produce 13.5 and 24v but you put a load on the
24v output and it seems to trip and you have to disconnect the mains and
leave it for a while or discharge the caps until it will work again. In the
rig, with it all wired correctly, you wind up the power and again it trips
and you have to leave it to "reset" ???
Can anyone shed any light ?
If anyone wishes me to send them a file of the PSU schematic then please let
me know.
Thanks.
--

Jim Burrill (Smogthemog)
M1BMW
Kiteaholic

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Version: 6.0.690 / Virus Database: 451 - Release Date: 22/05/2004

3977. Re: Yaesu FT767GX PSU board wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 22:07:22 UTC
From: mike <mike@nospam.co.uk>
Message-ID: <CjQsc.371$3s5.15@newsfe4-win>
Source record: 25914
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,uk.radio.amateur

send it here
mike-g7bnf[at]ntlworld.com
change [at] for @

mike

"Smog" <james@burrill.co.uk> wrote in message
news:c90flokgu1@news6.svr.pol.co.uk...
> www.jbphonetech.info
> "mike" <mike@nospam.co.uk> wrote in message
> news:rgPsc.355$3s5.354@newsfe4-win...
> > is it really that stuffed?
> >
> > mike
> >
>
> Its "tripping" Mike ? Ive studied the schematics and its a little beyond
> me, normally |I can suss most faults out but this one is a right pig. I
> have totally disconnected the PSU from the rest of the radio and on switch
> on it will just sit there and produce 13.5 and 24v but you put a load on
the
> 24v output and it seems to trip and you have to disconnect the mains and
> leave it for a while or discharge the caps until it will work again. In
the
> rig, with it all wired correctly, you wind up the power and again it trips
> and you have to leave it to "reset" ???
> Can anyone shed any light ?
> If anyone wishes me to send them a file of the PSU schematic then please
let
> me know.
> Thanks.
> --
>
> Jim Burrill (Smogthemog)
> M1BMW
> Kiteaholic
>
>
>
>
>
> ---
> Outgoing mail is certified Virus Free.
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> Version: 6.0.690 / Virus Database: 451 - Release Date: 22/05/2004
>
>

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Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.690 / Virus Database: 451 - Release Date: 22/05/2004

3978. Re: Radiowillem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-25 23:36:53 UTC
From: Kyle2 <kyle@gtx.net>
Message-ID: <1ERsc.246$XI5.223@newsfe2-win>
Source record: 25915

Radio stations usually use a transmitter to broadcast - wannabe pirates use
a webstream which has nothing to do with radio!

"William" <williamgoudsmid@home.nl> wrote in message
news:c8vl50hij1@news4.tilbu1.nb.home.nl...
>
> Check it out www.radiowillem.tk (Dutch)
> and push on Ga verder.
> The music is English and wath you want.
> Free willem@deventersweb.nl <<<<Mail you song.
>
> Greetz Willem
>
>

3979. Re: $50+ speaker boxes ... why do people buy these?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-26 01:14:17 UTC
From: Bob <antispam@nospam.org>
Message-ID: <JbSsc.13014$eH1.6474484@newssvr28.news.prodigy.com>
Source record: 25916

I only wish I had been first with the monster cable type stuff to sell to "a sucker born every minute"
Bob

> For some laughs see:
>
> http://www.soundstringcable.com/ss_product.html
>
> It's refreshing to see that they were thoughful enough to print arrows
> on the cable jacket so the electrons don't become confused and travel
> in the wrong direction. This ensures uniform current and signal flow
> to and from all components.
>
> N7WS
>
>
>
>
>

3980. Non-directional tracking solution?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-26 06:01:34 UTC
From: washed_phenom@hotmail.com
Message-ID: <f8d01f7.0405252201.33fb4ee3@posting.google.com>
Source record: 25917

Hello,

I'm not certain this is the appropriate newsgroup for this question, but if it isn't, I'd appreciate any referrals to other forums.

In many posts dealing with "foxhunts" and radio tracking situations, I hear directional antennas discussed, or triangulation via a moving receiver. But what are the relevant parameters if the receiving stations are fixed?

Partly for the fun of it, and also for practical uses, I'd like to design a receiving system whereby a small transmitter could be located. This would not technically be a "tracking" situation, since the transmitter would not always be on. I'm imagining something like a garage door opener, where pushing the button can send a brief (but very strong if necessary - this may have power implications?) signal.

The reason I ask about the non-directional solution is because I have access to a plot of land approx. 300 x 300 feet square, with no restrictions on building antennas on the four corners of the property. I'm guessing such a system could be more accurate than a directional system at a given power level, but the technical aspects of the situation are beyond me.

I am a mathematician by trade, but know a smattering of electronics. It would seem, at least in theory, that the relevant parameters here are the distances between the 3-4 antennas (would a 4th help?), and the strength and frequency of the signal. I also realize that some processing of the signal would need to be done at the receiving end. Perhaps the triangulation can be handled by software?

Any advice, direction, URLs, or discussion is much appreciated.

-wp

3981. Re: Non-directional tracking solution?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-26 07:23:53 UTC
From: Markus L <uo9oew@lnubb.pbz>
Message-ID: <7FXsc.293$9V3.3699@ns2.gip.net>
Source record: 25918

Washed Phenom wrote:
> Partly for the fun of it, and also for practical uses, I'd like to
> design a receiving system whereby a small transmitter could be
> located. This would not technically be a "tracking" situation, since
> the transmitter would not always be on. I'm imagining something like
> a garage door opener, where pushing the button can send a brief (but
> very strong if necessary - this may have power implications?) signal.

Try this one:
http://members.aol.com/BmgEngInc/Adcock.html

73, Markus HB9BRJ

3982. Re: Yaesu FT767GX PSU board wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-26 08:15:03 UTC
From: Geoff <geoff@nospam.demon.co.uk>
Message-ID: <Xns94F55E1CAA53Ageoffmailnews@158.152.254.254>
Source record: 25919
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,uk.radio.amateur

"mike" <mike@nospam.co.uk> wrote in news:CjQsc.371$3s5.15@newsfe4-win:

> send it here
> mike-g7bnf[at]ntlworld.com
> change [at] for @

Likewise send a copy to | geoff at palaemon dot co dot uk | and I'll have a look.

Geoff

3983. Re: Radiowillem

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-26 14:59:13 UTC
From: Philip de Cadenet <Philstheboss@thebbc.fslife.co.uk>
Message-ID: <YHUbhBGBDLtAFwB3@philstheboss.freeserve.co.uk>
Source record: 25920

Kyle,

>Radio stations usually use a transmitter to broadcast - wannabe pirates use
>a webstream which has nothing to do with radio!

Some wannabees even use more powerful transmitters than yours.

Here's Magic and Energy FM in Ireland.

http://www.magic105.net/techtalk.html

Their target area is Belfast, N. Ireland, around 65 miles away. The
sheep in between are just a bonus.

With their directional array they also have listeners in parts of
Scotland!

Check out their picture links.

--
Philip de Cadenet G4ZOW
Transmitters 'R' Us
http://www.transmittersrus.com

3984. Re: Non-directional tracking solution?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-26 17:07:00 UTC
From: zlau@arrl.org
Message-ID: <be2068bb.0405260907.4774a58a@posting.google.com>
Source record: 25921

washed_phenom@hotmail.com (Washed Phenom) wrote in message
news:<f8d01f7.0405252201.33fb4ee3@posting.google.com>...

> Partly for the fun of it, and also for practical uses, I'd like to
> design a receiving system whereby a small transmitter could be
> located. This would not technically be a "tracking" situation, since
> the transmitter would not always be on. I'm imagining something like
> a garage door opener, where pushing the button can send a brief (but
> very strong if necessary - this may have power implications?) signal.
>
> The reason I ask about the non-directional solution is because I have
> access to a plot of land approx. 300 x 300 feet square, with no
> restrictions on building antennas on the four corners of the property.
> I'm guessing such a system could be more accurate than a directional
> system at a given power level, but the technical aspects of the
> situation are beyond me.
>
> I am a mathematician by trade, but know a smattering of electronics.
> It would seem, at least in theory, that the relevant parameters here
> are the distances between the 3-4 antennas (would a 4th help?), and
> the strength and frequency of the signal. I also realize that some
> processing of the signal would need to be done at the receiving end.
> Perhaps the triangulation can be handled by software?
>
> Any advice, direction, URLs, or discussion is much appreciated.

Accurate signal strength measurements are surprisingly difficult.
Ground reflections can combine to to double the signal strength,
or nearly cancel it out. Hams and broadcasters often use the term
"picket fencing" to describe the rapid fluctuations in signal strength
that occurs with fixed to mobile signal paths.

Not that your task is impossible, just hard. Perhaps a sufficient number
of signals can be simultaneously processed to statistically reduce the
signal combination/cancellation effect to an acceptable error.

Zack Lau W1VT

3985. Re: wanted s/h or new motorola 2n4427's

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-26 20:15:27 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c92u10$1lk$1@newshost.mot.com>
Source record: 25928
Cross-posted to: rec.radio.amateur.homebrew,uk.radio.amateur

Just happened to be looking for another tranny and saw the many of these
that I have. Wonder what that outfit sells them for.

--
Steve N, K,9;d, c. i My email has no u's.

"zindazenda" <zen@lineisp.co.uk> wrote in message
news:1085449070.822213@smtp-1.griffin.com...
> hi there..
>
> does anyone know where I can get hold of a quantity of MOTOROLA 2n4427's??
> must be Motorola because other makes just don't work in the crt I am
using!!
>
> willing to take ex equipment if necessary..looking for quite a few but
will
> take ant amount..cash waiting..
>
> thanks simon g0zen
>
>

3986. Re: Non-directional tracking solution?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-26 20:34:53 UTC
From: j999w@aol.com
Message-ID: <20040526163453.07231.00002283@mb-m02.aol.com>
Source record: 25922

Do you have any frequency ranges in mind? A VHF system would be vastly different in size than shortwave for example.

jw
K9RZZ

3987. Re: Non-directional tracking solution?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-26 21:30:22 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <10ba330974u20e7@corp.supernews.com>
Source record: 25923

Zack Lau wrote:

> washed_phenom@hotmail.com (Washed Phenom) wrote in message
news:<f8d01f7.0405252201.33fb4ee3@posting.google.com>...
>
>
>>Partly for the fun of it, and also for practical uses, I'd like to
>>design a receiving system whereby a small transmitter could be
>>located. This would not technically be a "tracking" situation, since
>>the transmitter would not always be on. I'm imagining something like
>>a garage door opener, where pushing the button can send a brief (but
>>very strong if necessary - this may have power implications?) signal.
>>
>>The reason I ask about the non-directional solution is because I have
>>access to a plot of land approx. 300 x 300 feet square, with no
>>restrictions on building antennas on the four corners of the property.
>> I'm guessing such a system could be more accurate than a directional
>>system at a given power level, but the technical aspects of the
>>situation are beyond me.
>>
>> I am a mathematician by trade, but know a smattering of electronics.
>>It would seem, at least in theory, that the relevant parameters here
>>are the distances between the 3-4 antennas (would a 4th help?), and
>>the strength and frequency of the signal. I also realize that some
>>processing of the signal would need to be done at the receiving end.
>>Perhaps the triangulation can be handled by software?
>>
>>Any advice, direction, URLs, or discussion is much appreciated.
>
>
> Accurate signal strength measurements are surprisingly difficult.
> Ground reflections can combine to to double the signal strength,
> or nearly cancel it out. Hams and broadcasters often use the term
> "picket fencing" to describe the rapid fluctuations in signal strength
> that occurs with fixed to mobile signal paths.
>
> Not that your task is impossible, just hard. Perhaps a sufficient number
> of signals can be simultaneously processed to statistically reduce the
> signal combination/cancellation effect to an acceptable error.
>
> Zack Lau W1VT

Doing it by carrier phase would be better, if you could arrange a phase
reference. With hard-mounted receivers (or with a 2nd transmitter in a
known location) you can broadcast a time reference and do a reverse-GPS

sorta thing.

The higher the carrier the better the measurement, but with a lot 100 meters on a side you probably also want to send some sort of time reference (you do get to design the transmitter as well, right?).

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

3988. How determine pin-outs of car radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-27 03:07:23 UTC
From: mcalhoun@ksu.edu
Message-ID: <c93m1b$58l@unix2.cc.ksu.edu>
Source record: 25924

I'm looking for suggestions (preferably other than "Trace the internal wiring, Idiot!" or "Next time, buy a radio with a manual, Idiot!) on how to determine the pin-outs of a Delco AM/FM radio "about 10 years old" that came with NO manual and has NO identification other than MTD-1316 stamped into the metal on the rear.

On the rear, in addition to the standard antenna jack, there is one 13-pin recessed (mostly?) male connector (I do NOT have the matching connector) for which (I'm hoping) someone will recognize the pin-outs. If <=> represents a horizontal flat "pin", <o> represents a slight dimple (but NOT a hole) in the plastic which holds the <=> pins, <0> represents an actual hole which goes through the plastic, and everything else represents the shell and keying plastic, the plug kinda looks like this:

```
__________________
/ = = = | 0 | = = = \
| o o o o o o o |
| = = = | = | = = = |
+-------------------+
```

I'm NOT going to try to "draw" an actual ASCII picture of the front of the radio, but it has the following controls sorta in the indicated positions:

```
+---------------------------+
+---+ TREB SET | |
|PWR| | |
+---+ BASS AM-FM | |
| |
BAL +---------------------------+
UpArow UpArow ==== ==== ==== ==== ====
VOL FADE TUNE
DnArow DnArow SEEK RCL SCAN
========= ======= =========
```

CONCLUSIONS SO FAR:
* It is obviously digitally-tuned and probably has only five digital memories for each band.
* The BALance control implies the radio has at least two speakers.
* The FADE control implies the radio has four speakers.
* Because the PoWeR switch BARELY depresses and does NOT have two distinct positions (instead, it has a plastic-covered hole probably for a pilot-light to show through), the switch probably controls some electronic circuit to turn the radio on and off.

GUESSING:
* Each group of three = = = pins probably belongs to one speaker,

and an internal examination may show the middle pin is ground.
* The HOLE in the top row EITHER
* doesn't have a connector hidden behind the plastic (in which
case the chassis will be GROUND) OR
* if there is a hidden connector, it will be GROUND (like a U-GROUND
outlet) (My reasoning: one would NOT want the matching connector
to have a hot 12-volt pin sticking out like a sore thumb!)
* The pin immediately below the hole will then be for +12 volts.
* Since all 13 pins are now "accounted" for, there probably is no
antenna-control power wire.

I am definitely open to other possibilities!

--Myron, W0PBV.
--
Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge
PhD EE (retired). "Barbershop" tenor. CDL(PTXS). W0PBV. (785) 539-4448
NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle, Pistol)

3989. Re: Non-directional tracking solution?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-27 03:25:23 UTC
From: washed_phenom@hotmail.com
Message-ID: <f8d01f7.0405261925.5d1db66c@posting.google.com>
Source record: 25925

washed_phenom@hotmail.com (Washed Phenom) wrote in message news:<f8d01f7.0405252201.33fb4ee3@posting.google.com>...

>
> Any advice, direction, URLs, or discussion is much appreciated.
>

Thanks for the replies so far. They've been helpful, and have sent me on some interesting Google searches learning a lot about RDF in general. Some more specifics:

I have no preferred frequency ranges, but that is more out of ignorance than flexibility! In terms of transmitter power, in my first post I mentioned that a continuous signal wasn't necessary if that would help matters. It seemed plausable to me that a transmitter which used its power to transmit a short, strong signal could be detected at a much longer range than a weaker signal.

The reply regarding carrier phase was interesting, and sent me on a tour of GPS basics. Half the fun of this project is going to be learning new stuff. As I understand it, the reason you called this a "reverse GPS" is because the multiple receivers are in known locations instead of multiple transmitters. It would be feasible to build a second transmitter (a time reference?) and place it somewhere in the 100 yard square. There is a house roughly in the center of the property which would be where the "guts" of the processing equipment would be anyway. How does the carrier phase solution compare to VHF and shortwave in terms of power requirements, size of transmitter, etc?

Just to get a better sense of whether the range and resolutions I'm looking at are feasible, suppose you wanted to locate your local college radio station's transmitter. I just googled a few college stations and found two FM stations that transmit at 300 and 400 watts. The 300 watt station claims to cover 700 square miles. Of course I realize that: 1) "covering an area" may not be equivalent to "area within which their location can be pinpointed", and 2) Even if I could generate such power in a portable transmitter, I would need to choose bands so as not to run afoul of the FCC. (Just how much transmitting power can be generated from a garage door sized unit is another issue, and another reason the brief "burst" signal sounded preferable). Anyway, I was sidetracked there. To get back to the main question, if you had antennas at 4 corners of a 300 x 300 ft square lot, are there any good thumbnail estimates of how accurate you could be at locating the 300 watt college station, and how this accuracy varied as a function of the distance to the station?

In addition to being a fun way to learn new things and tinker with electronics, this project is also motivated by someone I care a great deal about who often works in isolated outdoor locations and doesn't own a cell phone or GPS. I know when she is at these sites, but worry she will be unable to call for help if something happens. Can she be located by her pushing a button and at what range?

She's already suggested building a Bat-Signal, but that is beyond by technical expertise. Also, she said that buying her a cell phone and GPS would be cheaper than building this monstrosity, but I like intellectual challenges and need to keep my mad scientist reputation well-exercised. :)

Thank you again, and please continue the excellent discussion.

-wp

3990. cmsg cancel <c93m1b$58l@unix2.cc.ksu.edu>

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-27 04:34:37 UTC
From: mcalhoun@ksu.edu
Message-ID: <c93r4t$71o@unix2.cc.ksu.edu>
Source record: 25926

```
cancel <c93m1b$58l@unix2.cc.ksu.edu> in newsgroup rec.radio.amateur.homebrew

This article was cancelled from within NN version 6.5.0 #2 (NOV)
--
Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge
PhD EE (retired). "Barbershop" tenor. CDL(PTXS). W0PBV. (785) 539-4448
NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle, Pistol)
```

3991. Re: How determine pin-outs of car radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-27 06:18:22 UTC
From: j999w@aol.com
Message-ID: <20040527021822.07961.00001373@mb-m04.aol.com>
Source record: 25927

Did you seach "Delco wiring diagram" on Google? Lots of hits. I found my Subaru radio diagram.

jw
K9RZZ

3992. Retro HB: home-made projection type tuning scale (+ slow motion drive) ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-27 07:35:21 UTC
From: n1jpr@hotmail.com
Message-ID: <95a201e0.0405262335.77ffebeb@posting.google.com>
Source record: 25929

Do you know of anyone using a transparent scale scale + lamp + lens + screen to PROJECT the tuning scale in a homemade device? This would be so retro cool!

I'd even be tempted to write in the names of a selection of broadcasters, coastal stations, nets, QPR windows, USN fax, GCSS, whatever....

I'd rather not mess with film and sprockets (a la Racal, was it?), while I would ask the local glass shop to cut me a glass pane disk to my liking, like a foot across.

As an added benefit, the disk itself would be rigid and stable enough to act as slow motion drive: I would turn it through a standard sized rubber covered shaft leaning against its rim, with some nice big knob on it.

For the scale proper, I'd start with a log scale using one of a number available free programs, print it on a transparency, and maybe add frequency marks (& icons, logos, etc.?) manually in a later version.

3993. Millionaire pays you for giving away his ebook for free!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-27 14:33:36 UTC
From: Yvon <yveNOSPAMdes45@yahoo.ca>
Message-ID: <cwqtc.1269$lo2.756@news20.bellglobal.com>
Source record: 25938

Hi foo bar,

I simply can't believe this works !!! But it really does!
I'm totally amazed!

It works so fine and you just became part of it, just like that,
without even knowing! Can you believe it?

You're at the same point I was last week. Just one more step and

YOU'LL RECEIVE A PAYCHECK as I have!

Listen to what happened:

Stephan Ducharme, the famous "FreeAdGuru" took up a challenge.

Stephan is doing this to prove that you don't need a website
to make money on the Internet !

foo bar I'm telling you, when this man gets mad, it rocks !

Stephan says:

"I have been surfing the web searching how to make money online
for over 3 years, day and night till 5A.M., with no results.

I wanted so much to succeed. I remember falling asleep on my
keyboard a few times.

I have seen so many web site owners working one entire month
for 10 to 100 bucks in net profits.
It is nonsense to work hours for nothing.
It has to stop !!!

I have made over a MILLION dollars in the past weeks.
And I have decided to reveal how it is done.

So Stephan has just created a RED HOT AUDIO EBOOK
Millionaire at 31...on the Internet

And ... foo bar You DO have Stephan's permission to give
it away to all your friends FOR FREE!

Yes, you heard me right!

You really can post the ebook to all your friends at no cost
to them and chances are YOU WILL EVEN RECEIVE A PAYCHECK
in your mailbox, just for doing that!!!

Imagine, getting paid by giving away something for FREE!

Do like I did:

Send it by email, through ICQ, MSN, in forums, newsgroups,
chat rooms, make ebook swaps.

I'm sure you know a lot of people interested in knowing
about a young 31 years old man revealing his secrets
on how he has just became a MILLIONAIRE from his PC at home.

Simply spread the news everywhere, it's OK!

And YES, The mind-boggling part is this:

YOU WILL GET PAID

Completely awesome!

I have made HUNDREDS OF DOLLARS in the very first few HOURS!!!

1. Click here to receive the letter to forward to your friends:

http://freeadguru.com/cgi-bin/i.pl?c=r&i=18549

2. This link will enroll you as an affiliate. It's very simple.
You simply need to enter your name and address telling
Stephan where to send your paychecks to.

It will take you 5 MINUTES max.

I JUST RECEIVED A PAYCHECK WHICH PAID THIS MONTH'S HOUSE MORTGAGE

My goal is to replace my job income because I don't want to be
kept in endless traffic jams anymore. I want to stay in my
warm bed on Monday mornings with Sabre and have the money
needed to have 5 days off a week instead of only 2!
Only 2 days off a week?! That's no fun.

More and more people are achieving this goal with the
Internet. Today, I'm standing in line and I'm the next one to
succeed. Come with me! Everybody's coming along this time
because it's actually working!

You're certainly asking yourself how this works? How can we
make money by giving away something for free?

The idea is prodigious...

Stephan is a genius mind!!

See, some of your friends will absolutely LOVE Stephan's Audio
ebook where he talks about how he just went from ground zero
to being a millionaire in weeks, thanks to the Internet.

After listening to Stephan's free audio ebook, your friends
will want to know more, so they will buy Stephan's famous
course "How To Get 1 Million Visitors On Your Website Without
Paying A Dime In Advertising - VERSION 2" available at:

http://moneyhome.com/cgi-bin/i.pl?c=a&i=18549

where he reveals ALL his secrets and shows us how he is
doing it STEP-BY-STEP.

The fun part is that by walking in the same footsteps
he's walking in, we're making it to the top too, as Stephan
is giving us up to 40% of the profits.

He is making OVER 1 MILLION dollars right now, and more than
$400,000.00 HAS BEEN SENT TO PEOPLE JUST LIKE YOU AND ME!

How can you start making money?

It's FREE.

Simply do these 3 little baby steps:

1. Register as an affiliate by going to:

http://freeadguru.com/cgi-bin/i.pl?c=r&i=18549

Where you will enter your name and your address.

2. You'll access your personalized area. Click on "Step-by-Step"
instructions to see the pre-written ads ready for you to
"Copy" and "paste".

(Or Look in the "Links" page. Link #1 will be the give-away free
access to the AUDIO ebook.

Or Look in the "Ads" page to select the pre-written ad you prefer
to send to your friends.)

3. Give that link to everybody you know. (Copy and paste)

A. Go into your email box and send it to everyone who has ever
sent you email. (Click on reply, paste your affiliate access
link to the free ebook. Click send.)

B. Go into your ICQ, MSN contact list and forward it to
everyone.

C. If you have friends in newsgroups, chat rooms and forums,
send them the audio ebook access too.

They will thank you.
Voil�. Finished. Wait for your paychecks.

Stephan will take care of everything from there and
you will receive a paycheck in your mailbox only for having
given away his RED HOT NEW Audio ebook for FREE!

Everyone who wants a second source of income will buy
Stephan's course.

Everyone who wants visitors on their website will buy
Stephan's course. (which is EVERY website owner on the
Internet... Tens of Millions of people NEED this course!)

And You get paid every time!

Think of the possibilities! The market is so wide right now
and the demand is so big that we are all making very good money.

To your quick success,

Yvon

P.S. Start with this baby step. click here RIGHT NOW:

http://freeadguru.com/cgi-bin/i.pl?c=r&i=18549

MAF Anti-Spam ID: 20040311091209E5r6GpL9

3994. Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-27 15:31:09 UTC
From: raodeepthi2000@yahoo.com
Message-ID: <1d955dfa.0405270731.1498b600@posting.google.com>
Source record: 25930

Hi!
I need help understanding a conventional phase/frequency detector.I consists of 6 two input NAND gates and 3 three input NAND gates.It compares the phase and generates UP and DOWN signals.I was wondering why the dead zone is high specially when there is a large reset delay path.
Deepthi

3995. Re: How determine pin-outs of car radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-27 15:55:45 UTC
From: farinasinsurance@sbcglobal.net
Message-ID: <5cotc.73528$R95.28067@newssvr25.news.prodigy.com>
Source record: 25931

For the mating connector go to WAL*MART. In the auto section they have "conversion" plugs for GM cars/radios. Some of them have a wiring diagram included. If that doesnt do the trick look in a manual (at Autozone or pep boys) for a wiring diagram. The radios used in GM cars are pretty standard and interchangable...good luck.

<mcalhoun@ksu.edu> wrote in message news:c93m1b$58l@unix2.cc.ksu.edu...
> I'm looking for suggestions (preferably other than "Trace the internal
> wiring, Idiot!" or "Next time, buy a radio with a manual, Idiot!) on how
> to determine the pin-outs of a Delco AM/FM radio "about 10 years old"
> that came with NO manual and has NO identification other than MTD-1316
> stamped into the metal on the rear.
>
> On the rear, in addition to the standard antenna jack, there is one 13-pin
> recessed (mostly?) male connector (I do NOT have the matching connector)
> for which (I'm hoping) someone will recognize the pin-outs. If <=>
> represents a horizontal flat "pin", <o> represents a slight dimple (but
> NOT a hole) in the plastic which holds the <=> pins, <0> represents an
> actual hole which goes through the plastic, and everything else represents
> the shell and keying plastic, the plug kinda looks like this:
> ____________________
> / = = = | 0 | = = = \
> | o o o o o o o |
> | = = = | = | = = = |
> +--------------------+
>
> I'm NOT going to try to "draw" an actual ASCII picture of the front of
> the radio, but it has the following controls sorta in the indicated
> positions:
> +----------------------------+
> +---+ TREB SET | |
> |PWR| | |
> +---+ BASS AM-FM | |
> | |
> BAL +----------------------------+
> UpArow UpArow ==== ==== ==== ==== ====
> VOL FADE TUNE
> DnArow DnArow SEEK RCL SCAN
> ========= ======= =========
>
> CONCLUSIONS SO FAR:
> * It is obviously digitally-tuned and probably has only five digital
> memories for each band.
> * The BALance control implies the radio has at least two speakers.

> * The FADE control implies the radio has four speakers.
> * Because the PoWeR switch BARELY depresses and does NOT have two
> distinct positions (instead, it has a plastic-covered hole probably
> for a pilot-light to show through), the switch probably controls
> some electronic circuit to turn the radio on and off.
>
> GUESSING:
> * Each group of three = = = pins probably belongs to one speaker,
> and an internal examination may show the middle pin is ground.
> * The HOLE in the top row EITHER
> * doesn't have a connector hidden behind the plastic (in which
> case the chassis will be GROUND) OR
> * if there is a hidden connector, it will be GROUND (like a U-GROUND
> outlet) (My reasoning: one would NOT want the matching connector
> to have a hot 12-volt pin sticking out like a sore thumb!)
> * The pin immediately below the hole will then be for +12 volts.
> * Since all 13 pins are now "accounted" for, there probably is no
> antenna-control power wire.
>
> I am definitely open to other possibilities!
>
> --Myron, W0PBV.
> --
> Five boxes preserve our freedoms: soap, ballot, witness, jury, and
cartridge
> PhD EE (retired). "Barbershop" tenor. CDL(PTXS). W0PBV. (785)
539-4448
> NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle,
Pistol)

3996. Re: Non-directional tracking solution?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-27 15:57:36 UTC
From: mikea@mikea.ath.cx
Message-ID: <c9535g$d3j$5@puck.litech.org>
Source record: 25932

Tim Wescott <tim@wescottnospamdesign.com> wrote:

> Doing it by carrier phase would be better, if you could arrange a phase
> reference. With hard-mounted receivers (or with a 2nd transmitter in a
> known location) you can broadcast a time reference and do a reverse-GPS
> sorta thing.

I thought about the reverse-GPS approach, but couldn't figure out how to determine absolute position. The most I could come up with was that you'd know times-of-arrival at the various receivers, and that would give you deltas from the earliest time-of-arrival. But until you know the distance of the transmitter from any one of the receivers, you can't determine position w.r.t. _any_ of them. As soon as you have distance from one of the receivers and N deltas, you have a fix in (min(N-1,3)) dimensions -- assuming that the processor knows where all the receivers (or antennas, at least) is in that space.

So what am I missing?

--
Mike Andrews
mikea@mikea.ath.cx
Tired old sysadmin

3997. Re: Non-directional tracking solution?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-27 16:20:19 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <10bc5a34ffvf14e@corp.supernews.com>
Source record: 25933

Mike Andrews wrote:

> Tim Wescott <tim@wescottnospamdesign.com> wrote:
>
>
>>Doing it by carrier phase would be better, if you could arrange a phase
>>reference. With hard-mounted receivers (or with a 2nd transmitter in a
>>known location) you can broadcast a time reference and do a reverse-GPS
>>sorta thing.
>
>
> I thought about the reverse-GPS approach, but couldn't figure out how
> to determine absolute position. The most I could come up with was that
> you'd know times-of-arrival at the various receivers, and that would
> give you deltas from the earliest time-of-arrival. But until you know
> the distance of the transmitter from any one of the receivers, you
> can't determine position w.r.t. _any_ of them. As soon as you have
> distance from one of the receivers and N deltas, you have a fix in
> (min(N-1,3)) dimensions -- assuming that the processor knows where all
> the receivers (or antennas, at least) is in that space.
>
> So what am I missing?
>

OK, maybe reverse LORAN. If you know the difference in the times of arrival between two stations you can plot the hyperbolic surface where your transmitter must lie. With four stations you should have six different surfaces. The intersections won't agree, but you can get a maximum likelihood estimation of the transmitter's position in three-dimensional space.

Being a mathematician by trade would make this easier, and more fun...

Actually three receivers would do it unambiguously most of the time, but four would be more accurate at the cost of a bunch more math.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

3998. Re: Non-directional tracking solution?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-27 16:39:31 UTC
From: mikea@mikea.ath.cx
Message-ID: <c955k3$d3j$6@puck.litech.org>
Source record: 25934

Tim Wescott <tim@wescottnospamdesign.com> wrote:
> Mike Andrews wrote:

> > I thought about the reverse-GPS approach, but couldn't figure out how
> > to determine absolute position. The most I could come up with was that
> > you'd know times-of-arrival at the various receivers, and that would
> > give you deltas from the earliest time-of-arrival. But until you know
> > the distance of the transmitter from any one of the receivers, you
> > can't determine position w.r.t. _any_ of them. As soon as you have
> > distance from one of the receivers and N deltas, you have a fix in
> > (min(N-1,3)) dimensions -- assuming that the processor knows where all
> > the receivers (or antennas, at least) is in that space.

> OK, maybe reverse LORAN. If you know the difference in the times of
> arrival between two stations you can plot the hyperbolic surface where
> your transmitter must lie. With four stations you should have six
> different surfaces. The intersections won't agree, but you can get a
> maximum likelihood estimation of the transmitter's position in
> three-dimensional space.

> Being a mathematician by trade would make this easier, and more fun...

While I do computer science now, rather than math, my degree is the
5-year Bachelor's in math, for what _that's_ worth. Every now and
again I get to actually use a bit of real math at work, generally to
the amazement of the in-juh-nears here at WeBuildHighways.

My point here is definitely not to wave my degree, as I'm quite sure
that others here have degrees more advanced than mine, or do math for
a living instead of as a hobby, etc., but to point out that having
a math background didn't make it any easier for me. It's still fun,
though.

> Actually three receivers would do it unambiguously most of the time, but
> four would be more accurate at the cost of a bunch more math.

Seems to me that N+1 receivers gives you an unambiguous fix in
(min(N-1,3))-space: 2 receivers locate the transmitter on a line, 3
locate it on a plane, and 4 locate it in 3 dimensions. Since we only
get to sense 3 spatial dimensions, more than 4 receivers are useful
only to provide an overdetermined solution, which may permit more
precision.

Of course, the "closer" the receivers are to one another as seen by
the transmitter (think of the solid angle that the receiver array
subtends from the transmitter), the more ill-conditioned the matrix of
coefficients that one uses to determine the position.

An interesting variation on the problem would be one in which the receivers also received or derived some precise time signal, such as GPS time, and the transmitter to be located transmitted a signal which contained a precise time referenced to the same standard.

This turns out to provide a good location for the transmitter, I believe.

--
Mike Andrews
mikea@mikea.ath.cx
Tired old sysadmin

3999. Re: Non-directional tracking solution?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-27 16:54:04 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <10bc79bm3gq5dd7@corp.supernews.com>
Source record: 25935

Mike Andrews wrote:
> Tim Wescott <tim@wescottnospamdesign.com> wrote:
>
>>Mike Andrews wrote:
>
>
>>>I thought about the reverse-GPS approach, but couldn't figure out how
>>>to determine absolute position. The most I could come up with was that
>>>you'd know times-of-arrival at the various receivers, and that would
>>>give you deltas from the earliest time-of-arrival. But until you know
>>>the distance of the transmitter from any one of the receivers, you
>>>can't determine position w.r.t. _any_ of them. As soon as you have
>>>distance from one of the receivers and N deltas, you have a fix in
>>>(min(N-1,3)) dimensions -- assuming that the processor knows where all
>>>the receivers (or antennas, at least) is in that space.
>
>
>>OK, maybe reverse LORAN. If you know the difference in the times of
>>arrival between two stations you can plot the hyperbolic surface where
>>your transmitter must lie. With four stations you should have six
>>different surfaces. The intersections won't agree, but you can get a
>>maximum likelihood estimation of the transmitter's position in
>>three-dimensional space.
>
>
>>Being a mathematician by trade would make this easier, and more fun...
>
>
> While I do computer science now, rather than math, my degree is the
> 5-year Bachelor's in math, for what _that's_ worth. Every now and
> again I get to actually use a bit of real math at work, generally to
> the amazement of the in-juh-nears here at WeBuildHighways.
>
> My point here is definitely not to wave my degree, as I'm quite sure
> that others here have degrees more advanced than mine, or do math for
> a living instead of as a hobby, etc., but to point out that having
> a math background didn't make it any easier for me. It's still fun,
> though.
>
>
>>Actually three receivers would do it unambiguously most of the time, but
>>four would be more accurate at the cost of a bunch more math.
>
>

> Seems to me that N+1 receivers gives you an unambiguous fix in
> (min(N-1,3))-space: 2 receivers locate the transmitter on a line, 3
> locate it on a plane, and 4 locate it in 3 dimensions. Since we only
> get to sense 3 spatial dimensions, more than 4 receivers are useful
> only to provide an overdetermined solution, which may permit more
> precision.
>
> Of course, the "closer" the receivers are to one another as seen by
> the transmitter (think of the solid angle that the receiver array
> subtends from the transmitter), the more ill-conditioned the matrix of
> coefficients that one uses to determine the position.
>
> An interesting variation on the problem would be one in which the
> receivers also received or derived some precise time signal, such as
> GPS time, and the transmitter to be located transmitted a signal which
> contained a precise time referenced to the same standard.
>
> This turns out to provide a good location for the transmitter, I
> believe.
>

But if you put GPS into the transmitter for the time signal why not just have it get it's own position and transmit it, ala APRS locators?

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

4000. Re: Non-directional tracking solution?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-27 17:04:24 UTC
From: mikea@mikea.ath.cx
Message-ID: <c9572o$d3j$7@puck.litech.org>
Source record: 25936

Tim Wescott <tim@wescottnospamdesign.com> wrote:
> Mike Andrews wrote:

[snip]

> > An interesting variation on the problem would be one in which the
> > receivers also received or derived some precise time signal, such as
> > GPS time, and the transmitter to be located transmitted a signal which
> > contained a precise time referenced to the same standard.

> > This turns out to provide a good location for the transmitter, I
> > believe.

> But if you put GPS into the transmitter for the time signal why not just
> have it get it's own position and transmit it, ala APRS locators?

(Shhhhhh! Pay no attention to the man behind the curtain.)

That, of course, is an elegant solution to the problem, but I didn't
consider it because it appeared to be outside the postulates given.

--
Mike Andrews
mikea@mikea.ath.cx
Tired old sysadmin

4001. project & skills database www.inforelation.com

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-27 18:30:47 UTC
From: Inforelation - Mike Baran <noupsampromotion@nouinforelation.psamcom>
Message-ID: <c95d0g$g1k$13@atlantis.news.tpi.pl>
Source record: 25937

Dear newsgroup member!

My name is Mike Baran. I am the author of www.inforelation.com database.
It helps You offer Your specific experience, skills or knowledge
and in exchange contact people with specific experience,
knowledge and skills in each science field !
You can also organize project team with them!
This service is at present free of charge.

Best regards,
Mike Baran

P.S. If you find www.inforelation.com useful, please inform your friends.

DATA PROTECTION

At inforelation your registration e-mail is not presented to others. Do not
put your email (or telephone) into your messages to avoid the potential
misuse.

4002. Re: Bi-directional amplifiers

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-27 19:40:13 UTC
From: msix@oldplato.nmia.com
Message-ID: <3ee98$40b6441d$402a8028$31122@nmia.allthenewsgroups.com>
Source record: 25939

Avery wrote:
>In article <fcc11bcf.0405231032.1bd1187d@posting.google.com>,
>farhan@phonestack.com (Ashhar Farhan) writes:

>>are there any resources available on design of bidirectional amps on
>>the net?

Look at the SBE-33 and SBE-34 ckts. They used them...
GL John W7ZFB

4003. Re: How determine pin-outs of car radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-27 22:02:40 UTC
From: marsgal42@hotmail.com
Message-ID: <d42b5a72.0405271402.5dd6da80@posting.google.com>
Source record: 25940

mcalhoun@ksu.edu wrote in message news:<c93m1b$58l@unix2.cc.ksu.edu>...
> I'm looking for suggestions (preferably other than "Trace the internal
> wiring, Idiot!" or "Next time, buy a radio with a manual, Idiot!) on how
> to determine the pin-outs of a Delco AM/FM radio "about 10 years old"
> that came with NO manual and has NO identification other than MTD-1316
> stamped into the metal on the rear.
>
> (snip...)
>
> I am definitely open to other possibilities!

Since Delco is GM's electronics arm, why not try a
GM dealer? Or a car audio place?

You may have to trace the wiring, otherwise. There is
nothing wrong with doing so, nor is it in any way
idiotic.

Laura Halliday VE7LDH "Que les nuages soient notre
Grid: CN89mg pied a terre..."
ICBM: 49 16.05 N 122 56.92 W - Hospital/Shafte

4004. Re: Non-directional tracking solution?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-27 22:25:40 UTC
From: Allan Butler <ka0ies@hotmail.com>
Message-ID: <EVttc.8553$n_6.3292@attbi_s53>
Source record: 25941

If you want to build something that will locate the roving transmitter on your plot of land that is 300 foot by 300 foot it might not be too hard to do if you can get your four receivers to do a little bit of timing computations for you.

Set the roving unit up to send a pulse on a regular basis. It doesn't have to carry any data or anything like that and it wouldn't have to be too powerful either.

There are a few assumptions that can be made that are pretty definate.

1. The distance from two diagonal corners of the square is the maximum distance the transmitter can be from the receiver and still be in the area that is designated as home.

2. The transmitter should be home. If the calculations are coming out wrong then the transmitter has violated the bondary of home.

3. All four of the receivers must be set to a very accurate clock so that they are all using the same reference.

I don't have a calculator with me that will let me do the calculation to find the diagonal distance across the square so I will use 450 feet as the rough number for the maximum distance from any receiver.

The first receiver detects the transmit pulse and it is known that the transmitter is within 450 feet of that receiver. That starts a clock. The second receiver detects the transmit pulse and the time since the clock started is noted. The third receiver detects the transmit pulse and the time since the first receiver detected the signal is noted. With this much information the position of the transmitter can be determined on a two dimensional plot. The fourth receiver could be used for a sanity check to make certain that the transmitter is in the expected location and it would allow better coverage for when only three receivers can detect the signal.

The space between clock start and second receive detect is the difference in distance between these two receivers. The next detect is the difference in distance between the first receiver and the third. And lastly the fourth detect sets the distance between the fourth receiver and the first. If the math is done right there will be four circles drawn each has the center at the corner of your property. When the drawings are made they will all cross in only one place. There will be other places where two or three circles cross.

The nice thing about doing it this way is that there is nothing mechanical and with todays computing power that is available a solution can be had within milliseconds of the transmitter putting out a pulse.

An idea for the accurate clock could be to use a receiver at each receiver in the square to receive a local TV station and use the synch pulses as a reference. Just don't forget the propagation delay is from one side of the square to the other and figure that in.

Another option would be to put a GPS receiver at each corner and use the clock from these as your reference.

Or you could use a common receiver site and one clock feeds all four detectors. Just remember that there will need to be four receiver antennas and corresponding feed lines to take care of.

4005. Re: How determine pin-outs of car radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-27 22:31:09 UTC
From: R J Carpenter <rcarpen@erols.com>
Message-ID: <40b67a0f$0$3117$61fed72c@news.rcn.com>
Source record: 25942

"Laura Halliday" <marsgal42@hotmail.com> wrote in message
news:d42b5a72.0405271402.5dd6da80@posting.google.com...
>
> Since Delco is GM's electronics arm, why not try a
> GM dealer? Or a car audio place?

Delco was spun off some years ago and renamed Delphi. That might be the
place to look.

Just as Ford spun off its parts business as Visteon.

[Laura.. Didn't see you at Dayton this year.]

4006. Re: Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 00:32:09 UTC
From: averyfineman@aol.com
Message-ID: <20040527203209.07368.00000158@mb-m24.aol.com>
Source record: 25943

In article <1d955dfa.0405270731.1498b600@posting.google.com>,
raodeepthi2000@yahoo.com (Deepthi) writes:

>Hi!
> I need help understanding a conventional phase/frequency detector.I
>consists of 6 two input NAND gates and 3 three input NAND gates.It
>compares the phase and generates UP and DOWN signals.I was wondering
>why the dead zone is high specially when there is a large reset delay
>path.
> Deepthi

The "conventional phase-frequency detector" I know is the basic
circuit of the Motorola MC4044 package. That one is explained in
detail - in the form of a timing chart of ALL gate states with little
arrows indicating which gate acts on other gates - in the
September, 1982, issue of HAM RADIO Magazine in the "Digital
Techniques" column titled "Inside A Phase-Frequency Detector
(MC4044)." The particular timing diagram is rather straightforward
waveform diagrams rather than the symbolic logic-state graphics
others have used. I am the author of that column.

The "dead zone" you mention is due to differential gate delays
and can be minimized with high-speed logic families. It has
several causes depending on whether the signal input is leading
or lagging the reference input. The waveform diagram lets you
select either one and, with a schematic, see the path that causes
the differential gate delay.

Len Anderson
retired (from regular hours) electronic engineer person

4007. Re: Non-directional tracking solution?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 00:32:11 UTC
From: averyfineman@aol.com
Message-ID: <20040527203211.07368.00000159@mb-m24.aol.com>
Source record: 25944

In article <10bc5a34ffvf14e@corp.supernews.com>, Tim Wescott
<tim@wescottnospamdesign.com> writes:

>Mike Andrews wrote:
>
>> Tim Wescott <tim@wescottnospamdesign.com> wrote:
>>
>>>Doing it by carrier phase would be better, if you could arrange a phase
>>>reference. With hard-mounted receivers (or with a 2nd transmitter in a
>>>known location) you can broadcast a time reference and do a reverse-GPS
>>>sorta thing.
>>
>> I thought about the reverse-GPS approach, but couldn't figure out how
>> to determine absolute position. The most I could come up with was that
>> you'd know times-of-arrival at the various receivers, and that would
>> give you deltas from the earliest time-of-arrival. But until you know
>> the distance of the transmitter from any one of the receivers, you
>> can't determine position w.r.t. _any_ of them. As soon as you have
>> distance from one of the receivers and N deltas, you have a fix in
>> (min(N-1,3)) dimensions -- assuming that the processor knows where all
>> the receivers (or antennas, at least) is in that space.
>>
>> So what am I missing?
>
>OK, maybe reverse LORAN. If you know the difference in the times of
>arrival between two stations you can plot the hyperbolic surface where
>your transmitter must lie. With four stations you should have six
>different surfaces. The intersections won't agree, but you can get a
>maximum likelihood estimation of the transmitter's position in
>three-dimensional space.
>
>Being a mathematician by trade would make this easier, and more fun...
>
>Actually three receivers would do it unambiguously most of the time, but
>four would be more accurate at the cost of a bunch more math.

This sort of thing was attempted in 1960-1961 by Ramo-Wooldridge
Corporation (the corporation that spun off what was to become TRW)
on HF direction finding using "time of arrival."

Essentially that project failed due to a need of absolute group-delay
control in the receivers, specifically in the IF chain.

While the same local oscillator could feed the mixers and be well
isolated from one another to prevent signal coupling around the

wrong path, the group-delay or relative phase shift of the various IF chains defeated the theoretical concept.

To stay within a 100m (or so) square, one has to work with the phases of the wavefronts so a superheterodyne type of receiver is not too swift unless each IF section is an absolute duplicate of the others. It might be possible with a DC (Direct Conversion) or "zero-IF" type, working with a specific audio tone (as an example), but that's more stuff for analysis.

Group delay in tuned amplifiers is not normally measured, nor was it a factor in the military R-391 receivers used for this project at R-W. My body was involved to the extent of others' wants to set up equal group delays but still others' wants had me on the short list for what is now termed "downsizing." [R-W eventually went kaput despite being the origin of STL and, eventually the space factory of TRW] As far as I know the project never made it to full promise.

Len Anderson
retired (from regular hours) electronic engineer person

4008. Re: SSB AM FM Detector IC

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 05:39:55 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <LgAtc.27519$SQ2.5451@edtnps89>
Source record: 25945

Behold, Leon Heller signalled from keyed 4-1000A filament:

> "John" <jmort@despammed.com> wrote in message
> news:c8vgq5$r5j$1@news6.svr.pol.co.uk...
>> Does anyone know of a multimode detector IC that will handle SSB, AM
>> and
> FM?
>> Looking at an old ARRL handbook I can see LM373. Is there a more
>> modern chip?
>
> You can do all those modes with a DSP. 8-)
>
> Leon

How many 12AU7's do I need to make that? ;-p

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

4009. Re: SSB AM FM Detector IC

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 06:01:02 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c96kiumfq1@freenet9.carleton.ca>
Source record: 25946

Gregg (nospam@unknown.org) writes:
> Behold, Leon Heller signalled from keyed 4-1000A filament:
>
>> "John" <jmort@despammed.com> wrote in message
>> news:c8vgq5$r5j$1@news6.svr.pol.co.uk...
>>> Does anyone know of a multimode detector IC that will handle SSB, AM
>>> and
>> FM?
>>> Looking at an old ARRL handbook I can see LM373. Is there a more
>>> modern chip?
>>
>> You can do all those modes with a DSP. 8-)
>>
>> Leon
>
> How many 12AU7's do I need to make that? ;-p
>
Well, you wouldn't be using 12AU7's.

At the very least, you'd be using Compactrons to get maximum tube
count per envelope.

But likely, Nuvistors or sub-miniature tubes would be the only way
to do it, if it could be done, since they are so much smaller.

Michael VE2BVW

4010. What Tube to use???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 07:36:08 UTC
From: Rick Frazier <rick@rickfrazier.com>
Message-ID: <40B6EC1F.DA2E620C@rickfrazier.com>
Source record: 25797

I'm thinking about building an HF linear, primarily for SSB use, and am having difficulty in choosing an appropriate tube (or tubes).

I want to be able to get full legal output (U.S.A.) with input of 55-65 watts max, so as to not tax an Icom 751a or 746Pro which would be driving. I'd prefer to be able to get to 160m, but could probably live with 20-10m if I had to. I want something that can "loaf along" without strain to prevent overtaxing components.

I may have access to a transformer that can provide 2100-2300 volts AC at several amperes, so I suppose I'm looking for a tube (or tubes) that can work with 2800 to 3300 VDC on the plate(s). (At the high end, it may be possible to provide 3200 volts and as much as 5 amperes of current... so at legal limits, the HV power supply should be able to keep up with little or no voltage sag.) Of course, something capable of high power output that can run along at way less than full output is preferred to another that has to run at the ragged edge to provide the same output. (It goes without saying that close monitoring is required to make sure the legal limits aren't exceeded, but that should be part of good operating practice anyway, IMHO.)

In your opinion, which commonly available tubes sound appropriate? I'm particularly interested in hearing from hams that have built units with similar DC supplies.

This is likely to be a long term project, with minimum amount of time to work on it at a time, and likely extensive amounts of time to find appropriate components at a reasonable cost (think beer budget and champagne dreams)..

Thanks
Rick AH7H

4011. Re: SSB AM FM Detector IC

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 09:18:35 UTC
From: David J Windisch <davidw@copper.net>
Message-ID: <40b7042e_2@newsfeed.slurp.net>
Source record: 25798

All of the available lot plus the next production run ;o)
73, Dave, N3HE

"Gregg" <nospam@unknown.org> wrote in message
news:LgAtc.27519$SQ2.5451@edtnps89...
SNIP
> How many 12AU7's do I need to make that? ;-p
>
> --
> Gregg
> *It's probably useful, even if it can't be SPICE'd*
> http://geek.scorpiorising.ca

4012. Re: SSB AM FM Detector IC

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 10:41:20 UTC
From: J M Noeding <la8ak@online.no>
Message-ID: <s1ncb0pt86m1uqdi8m7hbt2lqgpnjkphtf@4ax.com>
Source record: 25799

On Tue, 25 May 2004 15:47:32 GMT, "Harold E. Johnson"
<W4ZCB@mchsi.com> wrote:

>
>> Does anyone know of a multimode detector IC that will handle SSB, AM and
>FM?
>> Looking at an old ARRL handbook I can see LM373. Is there a more modern
>> chip?
>>
>I have some 373's and I think, some 273's as well if you'd like to try your
>hand at one. (free to good home)
>
>W4ZCB
>
It was a thread short while ago, you may also find some info on my
page http://home.online.no/~la8ak/c11.htm - unfortunately I had to PC
crashes this year so I cannot give more info, but believe Pete KE9OA
had some boards using somewhat more up-to-date solution

73
jm

4013. FA:ARRL + CQ Surplus conversion

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 13:23:08 UTC
From: Heytubeguy <heytubeguy@worldnet.att.net>
Message-ID: <03Htc.3455$_k3.75487@bgtnsc05-news.ops.worldnet.att.net>
Source record: 25800

See at :

http://cgi6.ebay.com/ws/eBayISAPI.dll?ViewSellersOtherItems&userid=heytubeguy&completed=0&sort=3&since=-1&include=0&page=1&rows=25

+ other items as well--tnx , heytubeguy

4014. FA: 1947 CALL BOOK

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 13:24:27 UTC
From: Heytubeguy <heytubeguy@worldnet.att.net>
Message-ID: <f4Htc.3462$_k3.75870@bgtnsc05-news.ops.worldnet.att.net>
Source record: 25801

See at :

http://cgi6.ebay.com/ws/eBayISAPI.dll?ViewSellersOtherItems&userid=heytubeguy&completed=0&sort=3&since=-1&include=0&page=1&rows=25

+ other items as well--tnx , heytubeguy

4015. Re: What Tube to use???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 13:46:35 UTC
From: Highland Ham <abgm0csz.kn6whyz@ntlworld.com>
Message-ID: <YiItc.227$ap3.108@newsfe6-gui.server.ntli.net>
Source record: 25802

> In your opinion, which commonly available tubes sound appropriate? I'm
> particularly interested in hearing from hams that have built units with
> similar DC supplies.
>
> This is likely to be a long term project, with minimum amount of time to
> work on it at a time, and likely extensive amounts of time to find
> appropriate components at a reasonable cost (think beer budget and
> champagne dreams)..
==========
If second hand tubes are not considered I suggest to have a look at the
Svetlana web site.
If valves can provide the wanted power at 29 MHz ,they certainly can do at
1.8 MHz.

If Eimac or similar tubes are available like the 3-500Z , 2 of those in
parallel are fine and so is a single 8877 or 3CX1500

Ref ARRL Handbook 1995 (and probably others) ,chapter 13

Good Luck with your project

Frank GM0CSZ / KN6WH

4016. Re: Non-directional tracking solution?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 14:20:25 UTC
From: mikea@mikea.ath.cx
Message-ID: <c97hr9$d4$5@puck.litech.org>
Source record: 25803

Allan Butler <ka0ies@hotmail.com> wrote:

[snip preconditions]

> The first receiver detects the transmit pulse and it is known that the
> transmitter is within 450 feet of that receiver. That starts a clock. The
> second receiver detects the transmit pulse and the time since the clock
> started is noted. The third receiver detects the transmit pulse and the
> time since the first receiver detected the signal is noted. With this much
> information the position of the transmitter can be determined on a two
> dimensional plot. The fourth receiver could be used for a sanity check to
> make certain that the transmitter is in the expected location and it would
> allow better coverage for when only three receivers can detect the signal.

> The space between clock start and second receive detect is the difference in
> distance between these two receivers. The next detect is the difference in
> distance between the first receiver and the third. And lastly the fourth
> detect sets the distance between the fourth receiver and the first. If the
> math is done right there will be four circles drawn each has the center at
> the corner of your property. When the drawings are made they will all cross
> in only one place. There will be other places where two or three circles
> cross.

But for this to work, as I pointed out in another post, you need to
know the true distance from the transmitter to any one or more of the
receivers already, or (equivalently) you need to know the exact time
of transmission relative to the receiver clock. Otherwise all you
have is the delta-Time Of Arrival (TOA) from the receiver that gets
the pulse first to the other receivers, and that's not sufficient to
locate the transmitter.

Even where the maximum distance is known, you still need the true
distance from the transmitter to any one receiver at a minimum. If
you don't have that, you can't draw any circles.

Or I'm missing something obvious. I really don't think I am, but if
someone can point out what I'm missing I _will_ be grateful.

--
Mike Andrews
mikea@mikea.ath.cx
Tired old sysadmin

4017. Re: Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 14:26:41 UTC
From: Rick Karlquist N6RK <richard@karlquist.removethis.com>
Message-ID: <B_Htc.4677$pt3.1214@attbi_s03>
Source record: 25804

There are various fixes for the dead zone problem.
In the mid-1970's, Fairchild (the original company)
sold an "11C44" phase detector that got rid of the
dead zone by injecting a narrow pulse so that the
phase detector pulses would never have to try to
go to zero width. Eric Breeze holds the patent
on this technique; if interested read his patent.
Analog Devices makes that AD9901 phase detector
which gets around the dead zone by first dividing
the frequency by 2. However, it is not suitable
for a frequency synthesizer because of the large
spurious sidebands resulting from this technique.
Motorola had some patents on the circuits in its
MC145159 that dealt with the dead zone and sampling
sidebands. It also used a divide by 2 technique, that
was not documented; (we figured it out by observing
the chip's output). That chip may have been inherited by
On Semiconductor. It was originally developed for
some division of GE.

Rick N6RK

"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040527203209.07368.00000158@mb-m24.aol.com...
> In article <1d955dfa.0405270731.1498b600@posting.google.com>,
> raodeepthi2000@yahoo.com (Deepthi) writes:
>
> >Hi!
> > I need help understanding a conventional phase/frequency detector.I
> >consists of 6 two input NAND gates and 3 three input NAND gates.It
> >compares the phase and generates UP and DOWN signals.I was wondering
> >why the dead zone is high specially when there is a large reset delay
> >path.
> > Deepthi
>
> The "conventional phase-frequency detector" I know is the basic
> circuit of the Motorola MC4044 package. That one is explained in
> detail - in the form of a timing chart of ALL gate states with little
> arrows indicating which gate acts on other gates - in the
> September, 1982, issue of HAM RADIO Magazine in the "Digital
> Techniques" column titled "Inside A Phase-Frequency Detector
> (MC4044)." The particular timing diagram is rather straightforward
> waveform diagrams rather than the symbolic logic-state graphics
> others have used. I am the author of that column.
>

> The "dead zone" you mention is due to differential gate delays
> and can be minimized with high-speed logic families. It has
> several causes depending on whether the signal input is leading
> or lagging the reference input. The waveform diagram lets you
> select either one and, with a schematic, see the path that causes
> the differential gate delay.
>
> Len Anderson
> retired (from regular hours) electronic engineer person

4018. Re: Help - My Amp Supply LK-500ZB Linear got Zapped by Lightning!!

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 14:45:45 UTC
From: gabe <gabe@nospams.com>
Message-ID: <40B75097.461A7EC0@nospams.com>
Source record: 25805

Hi,

Perhaps he has gas appliances ?

The dryer motor and timer is on 120 but heater element is 240
so his clothes would take longer to dry.

I agree with other post that he could have lost another part in the amp
or the main transformer has a short in the primary.

He could remove the transformer and bench test it using
small ac power supply to input 1-10 volts to the transformer primary
to test is in a safe way.

73 gabe

> But if it were the pole transformer don't you think he would have
> mentioned that half his lights don't work and that the stove, hot water
> heater and dryer aren't working like they used to?
>

4019. FS: Old Radio Related Books

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 14:59:00 UTC
From: oldbooks78@aol.com
Message-ID: <20040528105900.13391.00000063@mb-m04.aol.com>
Source record: 25806

I currently have the following old radio-related books for sale. Postage (Media Mail within the US, at cost elsewhere) is $2.50 for the first book, and $1 for each additional item. The books are:

Worldwide Publications "White's Radio Log, Vol. I, Number I" Worldwide Publications, c1982. The 136 page softbound book is in good+ condition, clean with no page tears or pen marks. Not dated, but looks to be from the early 1980's. A directory of North American AM, FM, and TV stations including world-wide shortwave stations. Available for $3.

American Radio Relay League "The A.R.R.L. Antenna Book" American Radio Relay League, 1960. Nineth edition. The 320+ page softbound book is in good condition. The covers show some wear from previous use, there are a few bent page tips, and there is a previous owners address label inside the front cover. A good solid reading copy of this informative text on radio antenna technology. Available for $4.

Woodruff, H. Charles "Short-Wave Listener's Guide" Howard Sams & Co., Radio Shack, 1976. Sixth edition. The 136 page softbound book is in very good condition, clean with no page tearts or pen marks, and a strong binding. A collective list of worldwide shortwave radio stations listed alphabetically, by area, by frequency, and more. Available for $4.

Siegel, Hy "All About CB Two-Way Radio" Radio Shack, 1976, Soft Cover. The 112 page softbound book is in very good condition, clean with no page tears or pen marks. Nicely illustrated. Available for $3.

Frost, J..M. (Editor) "World Radio TV Handbook, The Authorative Directory of International Radio and Television (Volume 39, 1985)" Billboard Publications, 1985. The 600 page softbound book is in very good condition, clean with no page tears or pen marks except for a previous owners name and date at the top of the Table of Contents. Available for $3.

Federal Telephone and Radio Corporation "Reference Data for Radio Engineers, 2nd edition" Federal Telephone and Radio Corporation, 1946, Second edition. The 322+ page hardbound book is in about very good condition, clean with no page tears or pen marks except for a previous owners name stamp inside the covers. Green cloth covers. A nice early radio reference text. Available for $7.

Glasgow, R.S. "Principles of Radio Engineering" McGraw-Hill, 1936, First edition, eighth printing. The 520 page hardbound book is in very good condition, clean with no page tears or pen marks except for a previous owners name inside the front cover, and a few light pencil marks/notes in the text. Available for $8.

Nilson, Arthur R. and J.L. Hornung "Practical Radio Communication; Principles, Systems, Equipment, Operations" McGraw-Hill, 1943, Second edition. The 927 page

hardbound book is in very good condition, clean with no page tears or pen marks except for a preperty stamp inside the front and rear covers. A nice early radio text. Available for $8.

Everitt, William Littell "Communication Engineering" McGraw-Hill, 1937. The 727 page hardbound book is in about very good condition. Clean with no page tears or pen marks except for a previous owners name and address inside the front cover, and a few passages underlined in pencil. A nice early text on the science of the radio. Available for $8.

Institute of Radio Engineers "1933 Report of the Standards Committee of The Institute of Radio Engineers" Institute of Radio Engineers, 1933. The 225 page softbound book is in good+ condition, clean with no page tears or pen marks except for a previous owners name on the front cover. Some wear to the spine paper, but not too bad. Page tips in rear lower corner bent outwards somewhat. A neat look at standards development for the radio in the early 1930's. Available for $8.

Federal Telephone and Radio Corporation "Reference Data for Radio Engineers, 1st edition" Federal Telephone and Radio Corporation, 1943, First edition, second printing. The 200 page hardbound book is in good+ condition, clean with no page tears or pen marks except for a previous owners name inside the front cover. The pages are a bit wavey along the bottom edge, possibly from minor moisture exposure. Otherwise very nice. Green cloth covers over flexible boards. A nice early radio reference text. Available for $10.

Morecroft, John H. "Elements of Radio Communication" John Wiley & Sons, 1929. The 269 page hardbound book is in good+ condition. There is a previous owners name inside the front and rear covers, and light pencil marks/notes on many of the pages. Dust jacket has extensive tape reinforcement along the edges. A nice early text on the radio. Available for $10.

Smith, F. Langford "The Radiotron Designer's Handbook, 3rd Edition" The Wireless Press, 1941. The 352 page hardbound book is in about very good condition, clean with no page tears or pen marks except for a previous owners name and address inside the front cover. A nice vintage look at radio design. Available for $10.

Saveskie, Peter N. "Radio Propagation Handbook" New York, NY, U.S.A.: T A B Books, 1980, 1st Edition. Red boards. The 499 page hardbound book is in very good condition. There are address labels from the previous owner inside the front and rear covers, and an embossed property stamp on the title page, otherwise very nice. ISBN: 083069949X Available for $15.

Or, all of the above for $80 post paid (within the US). If interested in any of the above, please email to "Oldbooks78@aol.com" to reserve. Thanks.

Dave

4020. Re: What Tube to use???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 15:31:37 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <10bemqlih1dn8f4@corp.supernews.com>
Source record: 25807

Highland Ham wrote:

>>In your opinion, which commonly available tubes sound appropriate? I'm
>>particularly interested in hearing from hams that have built units with
>>similar DC supplies.
>>
>>This is likely to be a long term project, with minimum amount of time to
>>work on it at a time, and likely extensive amounts of time to find
>>appropriate components at a reasonable cost (think beer budget and
>>champagne dreams)..
>
> ==
> If second hand tubes are not considered I suggest to have a look at the
> Svetlana web site.
> If valves can provide the wanted power at 29 MHz ,they certainly can do at
> 1.8 MHz.
>
> If Eimac or similar tubes are available like the 3-500Z , 2 of those in
> parallel are fine and so is a single 8877 or 3CX1500
>
> Ref ARRL Handbook 1995 (and probably others) ,chapter 13
>
> Good Luck with your project
>
> Frank GM0CSZ / KN6WH
>
>
>
>

Alas, the Svetlana site has expired -- Svetlana USA is not owned by the
company that owns the Svetlana factory, and they've had a falling out.
The Svetlana factory in Russia now markets their tubes as "circle C"
(the Tubes Formerly Known As Svetlana?), but all the nifty articles
aren't accessible.

The ARRL makes sure to include a few linear projects in each handbook,
so there's plenty of choices. I'd make concrete suggestions, but 5
watts is QRO for me.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

4021. Re: Non-directional tracking solution?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 15:36:55 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <10ben4lam10rree@corp.supernews.com>
Source record: 25808

Mike Andrews wrote:

> Allan Butler <ka0ies@hotmail.com> wrote:
>
> [snip preconditions]
>
>
>>The first receiver detects the transmit pulse and it is known that the
>>transmitter is within 450 feet of that receiver. That starts a clock. The
>>second receiver detects the transmit pulse and the time since the clock
>>started is noted. The third receiver detects the transmit pulse and the
>>time since the first receiver detected the signal is noted. With this much
>>information the position of the transmitter can be determined on a two
>>dimensional plot. The fourth receiver could be used for a sanity check to
>>make certain that the transmitter is in the expected location and it would
>>allow better coverage for when only three receivers can detect the signal.
>
>
>>The space between clock start and second receive detect is the difference in
>>distance between these two receivers. The next detect is the difference in
>>distance between the first receiver and the third. And lastly the fourth
>>detect sets the distance between the fourth receiver and the first. If the
>>math is done right there will be four circles drawn each has the center at
>>the corner of your property. When the drawings are made they will all cross
>>in only one place. There will be other places where two or three circles
>>cross.
>
>
> But for this to work, as I pointed out in another post, you need to
> know the true distance from the transmitter to any one or more of the
> receivers already, or (equivalently) you need to know the exact time
> of transmission relative to the receiver clock. Otherwise all you
> have is the delta-Time Of Arrival (TOA) from the receiver that gets
> the pulse first to the other receivers, and that's not sufficient to
> locate the transmitter.
>
> Even where the maximum distance is known, you still need the true
> distance from the transmitter to any one receiver at a minimum. If
> you don't have that, you can't draw any circles.
>
> Or I'm missing something obvious. I really don't think I am, but if
> someone can point out what I'm missing I _will_ be grateful.
>

If you know the positions of any two receivers, and the time delta between the reception of the pulses from the transmitters, the set of possible positions of the transmitter lies on a hyperbola that intersects the line between the two receivers.

With two pairs of receivers you get two hyperbolas and two intersections -- and three receivers gives you three pairings to calculate with.

So you don't need to know the absolute time of the transmitted pulse, just the difference.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

4022. Re: What Tube to use???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 17:13:01 UTC
From: j999w@aol.com
Message-ID: <20040528131301.12038.00000032@mb-m19.aol.com>
Source record: 25809

Depends on how much bragging you plan on doing about your amp. Some folks wouldn't be caught dead with anything less than a pair of 8877's, just to keep ahead of their peers. "I tell you what ... I can run full legal limit with only 1/2 watt drive". Personally, I have run a pair of 3-500's for years without any undo strain on the components. Look at the photo's of the "big gun" DX multi-ops ... W3LPL, K0RF, and the like, many run some beat up, homebrew, single band amp running a pair of 3-500z's, to 6/6/6 at 200 ft. So you see where their money goes.

Plus, have you looked at the cost of tubes lately?

Check out the contesting.com (I beleive) archives of the [AMPS] email list. That should provide hours of reading towards your project.

GOOD LUCK!

jw
K9RZZ

4023. MHW 612 "data-sheet" wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 17:57:51 UTC
From: sv1bsx@yahoo.gr
Message-ID: <65985460.0405280957.47a2bf07@posting.google.com>
Source record: 25810

Hi,

I have constructed a VHF PA for 2m Band with MHW612, but the efficiency seems to be very low. Has anyone the "data sheet" of Motorola from that module? I was looking for around Internet without success.

73, Mak SV1BSX

4024. fs or trade IC 718

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 19:16:36 UTC
From: nightowls627@aol.comnojunk
Message-ID: <20040528151636.02657.00000088@mb-m28.aol.com>
Source record: 25811

Looking to sell my less than year old, hardly used IC718. My mode of choice is cw and I would like to get an elecraft k1 or kx1. The 718 has the dsp card installed and includes manual, schematics. If traded for k1, I will throw in a rascal glx used for digital modes.- -400.00 plus shipping Thanks so much.

73
Greg
ki4bbl@arrl.net

4025. Re: What Tube to use???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 19:33:02 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <OtMtc.22$pX3.16@clgrps12>
Source record: 25812

Behold, Tim Wescott signalled from keyed 4-1000A filament:

> Highland Ham wrote:
>
>>>In your opinion, which commonly available tubes sound appropriate? I'm
>>>particularly interested in hearing from hams that have built units with
>>>similar DC supplies.
>>>
>>>This is likely to be a long term project, with minimum amount of time
>>>to work on it at a time, and likely extensive amounts of time to find
>>>appropriate components at a reasonable cost (think beer budget and
>>>champagne dreams)..
>>
>> == If second hand tubes are not
>> considered I suggest to have a look at the Svetlana web site. If valves
>> can provide the wanted power at 29 MHz ,they certainly can do at 1.8
>> MHz.
>>
>> If Eimac or similar tubes are available like the 3-500Z , 2 of
>> those in parallel are fine and so is a single 8877 or 3CX1500
>>
>> Ref ARRL Handbook 1995 (and probably others) ,chapter 13
>>
>> Good Luck with your project
>>
>> Frank GM0CSZ / KN6WH
>>
>>
>>
>>
>>
> Alas, the Svetlana site has expired

Not if you know where to look ;-)

http://www.svetlana.com/docs/tubeframe.html

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

4026. Re: What Tube to use???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 19:42:33 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <10bf5h58r4pr291@corp.supernews.com>
Source record: 25814

Gregg wrote:
> Behold, Tim Wescott signalled from keyed 4-1000A filament:
>
>
>>Highland Ham wrote:
>>
>>
>>>>In your opinion, which commonly available tubes sound appropriate? I'm
>>>>particularly interested in hearing from hams that have built units with
>>>>similar DC supplies.
>>>>
>>>>This is likely to be a long term project, with minimum amount of time
>>>>to work on it at a time, and likely extensive amounts of time to find
>>>>appropriate components at a reasonable cost (think beer budget and
>>>>champagne dreams)..
>>>
>>>== If second hand tubes are not
>>>considered I suggest to have a look at the Svetlana web site. If valves
>>>can provide the wanted power at 29 MHz ,they certainly can do at 1.8
>>>MHz.
>>>
>>>If Eimac or similar tubes are available like the 3-500Z , 2 of
>>>those in parallel are fine and so is a single 8877 or 3CX1500
>>>
>>>Ref ARRL Handbook 1995 (and probably others) ,chapter 13
>>>
>>>Good Luck with your project
>>>
>>>Frank GM0CSZ / KN6WH
>>>
>>>
>>>
>>>
>>>
>>
>>Alas, the Svetlana site has expired
>
>
> Not if you know where to look ;-)
>
> http://www.svetlana.com/docs/tubeframe.html
>

How cool. There has to be some kind of saga behind this whole Svetlana business.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

4027. Re: Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 19:43:26 UTC
From: averyfineman@aol.com
Message-ID: <20040528154326.09069.00000098@mb-m17.aol.com>
Source record: 25813

In article <B_Htc.4677$pt3.1214@attbi_s03>, "Rick Karlquist N6RK"
<richard@karlquist.removethis.com> writes:

>There are various fixes for the dead zone problem.
>In the mid-1970's, Fairchild (the original company)
>sold an "11C44" phase detector that got rid of the
>dead zone by injecting a narrow pulse so that the
>phase detector pulses would never have to try to
>go to zero width. Eric Breeze holds the patent
>on this technique; if interested read his patent.
>Analog Devices makes that AD9901 phase detector
>which gets around the dead zone by first dividing
>the frequency by 2. However, it is not suitable
>for a frequency synthesizer because of the large
>spurious sidebands resulting from this technique.
>Motorola had some patents on the circuits in its
>MC145159 that dealt with the dead zone and sampling
>sidebands. It also used a divide by 2 technique, that
>was not documented; (we figured it out by observing
>the chip's output). That chip may have been inherited by
>On Semiconductor. It was originally developed for
>some division of GE.

The "dead zone problem" is less a problem and more a
state of mind. :-)

When implemented with a charge-pump circuit (voltage
& time converter to current) between the PFD and loop
filter, it rather disappears into the woodwork of the whole
PLL. The phase difference between signal and reference
is proportional to the control voltage of the VCO producing
the basic frequency. There is ALWAYS going to be a
signal versus reference phase offset when the entire loop is
in lock so this dreaded "dead zone problem" will only show
up in a very narrow range of controlled frequency.

General intuitive thought on any PLL or other synthesizer
closed loop is that the relative phase between signal and
reference is zero. It isn't. If it was, then the VCO could not
be controlled. As a very rough indicator of VCO frequency,
that signal v. reference offset phase exists for quick scope
checking...when the control voltage range of the VCO is
known. Good for a quick bench check.

In practical terms, that dreaded "dead zone" isn't visible in a
real-world example.

Case in point: 23+ years ago, Rocketdyne Division of
Rockwell International (now a Division of Boeing) was beginning
work on a Deformable Mirror for laser work (they had a sizeable
optics group) that used a 1 MHz signal out of optics to indicate
the light phase error of an optical interferometer. I rigged up a
74H family phase-frequency detector circuit as the heart of that,
an integrator out of that into an A-to-D converter to get a digital
version for computer data manipulation. By all the careful
measurement, the expected dead zone didn't show up on any
graphing and the standard lab time interval counters could
resolve, accurately, 2 nanoseconds using time averaging.
[translates to rather less than a degree of phase error] The
optical physicists had been hopping up and down about "dead
zone" in meetings but the actual circuit performance didn't show it.

One reason for the non-observation of any dead zone is that the
digital gates forming the PFD were so lightly loaded in other-gate
capacitance that their propagation delays all tended to be the
same. Datasheet values of propagation delay of gates are all given
as maximums, rather worst-case things with lots of pFds connected
to outputs, etc. Put on half a prototype board, loaded only by other
gates of the PFD and the resistor input of an op-amp integrator, the
capacitance loading was minimal. [project was successful, and
spawned more work on deformable mirrors]

It can be an interesting academic problem to achieve a zero dead-
dead zone effect in a PFD, but thats about it. When working at
the comparison frequency of less than a few MHz, the PFD dead
zone due to differential propagation delays of the gates disappears
into the woodwork when using 74LS or faster digital families.

There's plenty to be concerned about in any frequency synthesizer
subsystem, but a phase-frequency detector gate structure is a
very minor problem in my opinion.

DDS and fractional-N loops in synthesizers have their own problems
such as spurious output, but those problems can't really be traced
to any PFD dead-zone effect. A PFD is wonderful as a control loop
element in that it can control a VCO (of the loop) from way off the
frequency and bring it into a lock phase range...from either worst-
case start-up frequency. [way back in the beginning of radio time,
lock loops had to use sawtooth sweep circuits to cure that start-up
condition, and couldn't control beyond +/- 90 degrees of phase
shift...PFDs easily handle +/-180 degrees]

Len Anderson
retired (from regular hours) electronic engineer person

4028. Re: What Tube to use???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 20:00:27 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <vTMtc.1732$CI7.1731@newssvr22.news.prodigy.com>
Source record: 25815

You'll save time and money by getting a used Heathkit SB-220 for about
$500.00 or less and add 160 to it, or a Drake L-7 about $700.00 or more..
Both use two 3-500Z and are well engineered linears. And after you're tired
of it you can get most of your money back. Even if you put time in effort
in you'll get very little back. So get a 220 or L-7 and start collecting
parts for your dream when you find them cheap. JMHO

--
73
Hank WD5JFR
"Rick Frazier" <rick@rickfrazier.com> wrote in message
news:40B6EC1F.DA2E620C@rickfrazier.com...
> I'm thinking about building an HF linear, primarily for SSB use, and am
> having difficulty in choosing an appropriate tube (or tubes).
>
> I want to be able to get full legal output (U.S.A.) with input of 55-65
> watts max, so as to not tax an Icom 751a or 746Pro which would be
> driving. I'd prefer to be able to get to 160m, but could probably live
> with 20-10m if I had to. I want something that can "loaf along" without
> strain to prevent overtaxing components.
>
> I may have access to a transformer that can provide 2100-2300 volts AC
> at several amperes, so I suppose I'm looking for a tube (or tubes) that
> can work with 2800 to 3300 VDC on the plate(s). (At the high end, it
> may be possible to provide 3200 volts and as much as 5 amperes of
> current... so at legal limits, the HV power supply should be able to
> keep up with little or no voltage sag.) Of course, something capable
> of high power output that can run along at way less than full output is
> preferred to another that has to run at the ragged edge to provide the
> same output. (It goes without saying that close monitoring is required
> to make sure the legal limits aren't exceeded, but that should be part
> of good operating practice anyway, IMHO.)
>
> In your opinion, which commonly available tubes sound appropriate? I'm
> particularly interested in hearing from hams that have built units with
> similar DC supplies.
>
> This is likely to be a long term project, with minimum amount of time to
> work on it at a time, and likely extensive amounts of time to find
> appropriate components at a reasonable cost (think beer budget and
> champagne dreams)..
>
> Thanks
> Rick AH7H

>
>

4029. Re: SSB AM FM Detector IC

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 20:17:31 UTC
From: J M Noeding <la8ak@online.no>
Message-ID: <sa6eb0t6sark0qaep2pj8i60ctinrqam4r@4ax.com>
Source record: 25816

On 28 May 2004 06:01:02 GMT, et472@FreeNet.Carleton.CA (Michael Black)
wrote:

>>
>Well, you wouldn't be using 12AU7's.
>
>At the very least, you'd be using Compactrons to get maximum tube
>count per envelope.
>
>But likely, Nuvistors or sub-miniature tubes would be the only way
>to do it, if it could be done, since they are so much smaller.
>
> Michael VE2BVW

I'd suggest you to try the universal and easy to solder detector - 6H6
and let the software compensate for the missed electronic skills

JM

4030. Re: FS: Old Radio Related Books

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 21:21:30 UTC
From: Allen Windhorn <Allen.Windhorn@LSUSA.com>
Message-ID: <u8yfc5jw5.fsf@LSUSA.com>
Source record: 25817

oldbooks78@aol.com (Oldbooks78) writes:

> ... Smith, F. Langford "The Radiotron Designer's Handbook, 3rd
> Edition" The Wireless Press, 1941. The 352 page hardbound book is in
> about very good condition, clean with no page tears or pen marks
> except for a previous owners name and address inside the front
> cover. A nice vintage look at radio design. Available for $10.

I have one of these and it has some very useful formulas for
calculating inductance of various oddball coil configurations.

Regards,
Allen

4031. FA: MULTIPLE LOTS of Various Electronic Components

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 21:37:50 UTC
From: jrakar@jrakar.com
Message-ID: <a4610d73.0405281337.10cda70c@posting.google.com>
Source record: 25818

```
==========================================================================

Please check out our MULTIPLE LOTS of Various Electronic Components
on eBay this week:

LOT of Various Electronic Components :: Lot # 1
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4660&item=3818076769

LOT of Various Electronic Components :: Lot # 2
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4660&item=3818076931

LOT of Various Electronic Components :: Lot # 3
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4660&item=3818077156

LOT of Various Electronic Components :: Lot # 4
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4660&item=3818077339

LOT of Various Electronic Components :: Lot # 5
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4660&item=3818077603

LOT of Various Electronic Components :: Lot # 6
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4660&item=3818077900

LOT of Various Electronic Components :: Lot # 7
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4660&item=3818078115

LOT of Various Electronic Components :: Lot # 8
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4660&item=3818257820

LOT of Various Electronic Components :: Lot # 9
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4660&item=3818258008

LOT of Various Electronic Components :: Lot # 10
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4660&item=3818258188

LOT of Various Electronic Components :: Lot # 11
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4660&item=3818258379

LOT of Various Electronic Components :: Lot # 12
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4660&item=3818258590

LOT of Various Electronic Components :: Lot # 13
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4660&item=3818385342

LOT of Various Electronic Components :: Lot # 14
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4660&item=3818385615

LOT of Various Electronic Components :: Lot # 15
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4660&item=3818385857
```

LOT of Various Electronic Components :: Lot # 16
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4660&item=3818386180

LOT of Various Electronic Components :: Lot # 17
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4660&item=3818386783

LOT of Various Electronic Components :: Lot # 18
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4660&item=3818387226

LOT of Various Electronic Components :: Lot # 19
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4660&item=3818387428

LOT of Various Electronic Components :: Lot # 20
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4660&item=3818387687

Thanks,

Jerry

==========

Please also check out our Web pages:

Main Electronic Components page at:
http://www.jrakar.com/glw/electronics/ec.htm

Capacitors for Sale page at:
http://www.jrakar.com/glw/electronics/caps.htm

Crystals for Sale page at:
http://www.jrakar.com/glw/electronics/crystals.htm

DIP Switches for Sale page at:
http://www.jrakar.com/glw/electronics/dipswitches.htm

ICs for Sale page at:
http://www.jrakar.com/glw/electronics/ics.htm

Relays for Sale page at:
http://www.jrakar.com/glw/electronics/relays.htm

Sockets for Sale page at:
http://www.jrakar.com/glw/electronics/sockets.htm

Main Web Page at: www.jrakar.com

:: Thank You ::

==========

4032. Re: Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 22:20:42 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c98e3s$1jl$1@newshost.mot.com>
Source record: 25820

"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040528154326.09069.00000098@mb-m17.aol.com...
> In article <B_Htc.4677$pt3.1214@attbi_s03>, "Rick Karlquist N6RK"
> <richard@karlquist.removethis.com> writes:
>
> >There are various fixes for the dead zone problem.
> >In the mid-1970's, Fairchild (the original company)
> >sold an "11C44" phase detector that got rid of the
> >dead zone by injecting a narrow pulse so that the
> >phase detector pulses would never have to try to
> >go to zero width. Eric Breeze holds the patent
> >on this technique; if interested read his patent.
> >Analog Devices makes that AD9901 phase detector
> >which gets around the dead zone by first dividing
> >the frequency by 2. However, it is not suitable
> >for a frequency synthesizer because of the large
> >spurious sidebands resulting from this technique.
> >Motorola had some patents on the circuits in its
> >MC145159 that dealt with the dead zone and sampling
> >sidebands. It also used a divide by 2 technique, that
> >was not documented; (we figured it out by observing
> >the chip's output). That chip may have been inherited by
> >On Semiconductor. It was originally developed for
> >some division of GE.
>
> The "dead zone problem" is less a problem and more a
> state of mind. :-)
>
> When implemented with a charge-pump circuit (voltage
> & time converter to current) between the PFD and loop
> filter, it rather disappears into the woodwork of the whole
> PLL. The phase difference between signal and reference
> is proportional to the control voltage of the VCO producing
> the basic frequency. There is ALWAYS going to be a
> signal versus reference phase offset when the entire loop is
> in lock so this dreaded "dead zone problem" will only show
> up in a very narrow range of controlled frequency.
>
> General intuitive thought on any PLL or other synthesizer
> closed loop is that the relative phase between signal and
> reference is zero. It isn't. If it was, then the VCO could not
> be controlled. As a very rough indicator of VCO frequency,
> that signal v. reference offset phase exists for quick scope
> checking...when the control voltage range of the VCO is

> known. Good for a quick bench check.
>
> In practical terms, that dreaded "dead zone" isn't visible in a
> real-world example.
>
> Case in point: 23+ years ago, Rocketdyne Division of
> Rockwell International (now a Division of Boeing) was beginning
> work on a Deformable Mirror for laser work (they had a sizeable
> optics group) that used a 1 MHz signal out of optics to indicate
> the light phase error of an optical interferometer. I rigged up a
> 74H family phase-frequency detector circuit as the heart of that,
> an integrator out of that into an A-to-D converter to get a digital
> version for computer data manipulation. By all the careful
> measurement, the expected dead zone didn't show up on any
> graphing and the standard lab time interval counters could
> resolve, accurately, 2 nanoseconds using time averaging.
> [translates to rather less than a degree of phase error] The
> optical physicists had been hopping up and down about "dead
> zone" in meetings but the actual circuit performance didn't show it.
>
> One reason for the non-observation of any dead zone is that the
> digital gates forming the PFD were so lightly loaded in other-gate
> capacitance that their propagation delays all tended to be the
> same. Datasheet values of propagation delay of gates are all given
> as maximums, rather worst-case things with lots of pFds connected
> to outputs, etc. Put on half a prototype board, loaded only by other
> gates of the PFD and the resistor input of an op-amp integrator, the
> capacitance loading was minimal. [project was successful, and
> spawned more work on deformable mirrors]
>
> It can be an interesting academic problem to achieve a zero dead-
> dead zone effect in a PFD, but thats about it. When working at
> the comparison frequency of less than a few MHz, the PFD dead
> zone due to differential propagation delays of the gates disappears
> into the woodwork when using 74LS or faster digital families.
>
> There's plenty to be concerned about in any frequency synthesizer
> subsystem, but a phase-frequency detector gate structure is a
> very minor problem in my opinion.
>
> DDS and fractional-N loops in synthesizers have their own problems
> such as spurious output, but those problems can't really be traced
> to any PFD dead-zone effect. A PFD is wonderful as a control loop
> element in that it can control a VCO (of the loop) from way off the
> frequency and bring it into a lock phase range...from either worst-
> case start-up frequency. [way back in the beginning of radio time,
> lock loops had to use sawtooth sweep circuits to cure that start-up
> condition, and couldn't control beyond +/- 90 degrees of phase
> shift...PFDs easily handle +/-180 degrees]
>

> Len Anderson
> retired (from regular hours) electronic engineer person

Len - Avery, whomever,
Our experiences differ. When designing PLL synths back then for two-war radio, we always saw the dead zone. In a type 2 loop (hope I'm remembering my control theory correctly) the extra integration allows the VCO to float around within the dead zone, causing a low freq rumble at times. You could watch the phase wandering around on a scope on the two PD inputs. We would force some small leakage current just to hold it up against one side of the dead zone. Perhaps the types of requirements causes the difference. We were in the audio range with the PD reference freq and lock times in the tens of ms. if I recall correctly.
If I recall, the Fairchild chip did a better job of matching the delays. The small overlap causing a narrow pulse to occur seemed like a small issue - not much energy at the ref freq for some applications. Our synthesizers were of such requirements that there was a very tight balance between lock time and spurious. The loop filtering took much care to get the lock time and keep reference spurs down.
I designed and built what I still believe is the first 2-meter synth hand held in 1973. 8.0 ma current max drain (varied 'tween 6.5 and 8 across the band), 70dB spurious (the radio originally was 43 dB). 5kc resolution. In a Motorola HT-220. Still have it. A year later I got tired of doing the dip-switches and designed a keyboard entry system. That fella with the HT-220 site didn't put it on. He does have Dale Heatherington's (sp) though (got a couple of them also).
--
Steve N, K,9;d, c. i My email has no u's.

4033. Re: Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 22:41:39 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <DePtc.1710$hB2.1306@nwrdny03.gnilink.net>
Source record: 25819

Dead-zone = phase noise. Very little dead-zone = very little phase noise.
Bigger dead-zone = bigger phase noise.
You can interpolate the rest for yourself.

Joe
W3JDR

"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040528154326.09069.00000098@mb-m17.aol.com...
> In article <B_Htc.4677$pt3.1214@attbi_s03>, "Rick Karlquist N6RK"
> <richard@karlquist.removethis.com> writes:
>
> >There are various fixes for the dead zone problem.
> >In the mid-1970's, Fairchild (the original company)
> >sold an "11C44" phase detector that got rid of the
> >dead zone by injecting a narrow pulse so that the
> >phase detector pulses would never have to try to
> >go to zero width. Eric Breeze holds the patent
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> in lock so this dreaded "dead zone problem" will only show
> up in a very narrow range of controlled frequency.
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> closed loop is that the relative phase between signal and
> reference is zero. It isn't. If it was, then the VCO could not
> be controlled. As a very rough indicator of VCO frequency,
> that signal v. reference offset phase exists for quick scope
> checking...when the control voltage range of the VCO is
> known. Good for a quick bench check.
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> Rockwell International (now a Division of Boeing) was beginning
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> optics group) that used a 1 MHz signal out of optics to indicate
> the light phase error of an optical interferometer. I rigged up a
> 74H family phase-frequency detector circuit as the heart of that,
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> version for computer data manipulation. By all the careful
> measurement, the expected dead zone didn't show up on any
> graphing and the standard lab time interval counters could
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> [translates to rather less than a degree of phase error] The
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> element in that it can control a VCO (of the loop) from way off the

> frequency and bring it into a lock phase range...from either worst-
> case start-up frequency. [way back in the beginning of radio time,
> lock loops had to use sawtooth sweep circuits to cure that start-up
> condition, and couldn't control beyond +/- 90 degrees of phase
> shift...PFDs easily handle +/-180 degrees]
>
> Len Anderson
> retired (from regular hours) electronic engineer person

4034. Re: Non-directional tracking solution?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-28 22:44:30 UTC
From: Steve Nosko <suteuve.nosukowicuz@moutouroula.com>
Message-ID: <c98fgh$1pr$1@newshost.mot.com>
Source record: 25821

"Tim Wescott" <tim@wescottnospamdesign.com> wrote in message
news:10ben4lam10rree@corp.supernews.com...
> Mike Andrews wrote:
>
> > Allan Butler <ka0ies@hotmail.com> wrote:
> >
> > [snip preconditions]
> >

Withoug the previous parts of the thread this may be duplication since I
don't know the original constraints...but

I have always wanted to build a model rocket altitude transponder using this
concept:

On-board the rocket we have a "transponder"... a one transistor superregen
Rx on, say 10 or 6 Meters. I hae a schematic around here somewhere for a
one tranny FM broadcast receiver from Pop Tronics. Have it's demodulated
signal modulate a 2 meter TX. This can be a 9 or 12 Mhz. xtal osc and 2
meter tuned circuit (gets you a few miles on the ground from a tower
receiver).
On the ground you have the "Ground Station" 10 or 6 meter mobile. Since
you can have lots of power, the crummy Rx onboard the rocket is no problem.
From the mobile, transmit a tone. Measure the time delay of a zero crossing
of the transponded tone. A simple freq counter can be made to do this if it
had (I forget the official name--triggered event counter maybe??) the
ability to start counting on the TX tone's edge and stop on the RX tone's
edge. Just a few chips for this.
You pick the frequency that the counter is counting to display feet or
whatever units you like.
What's-it, something like a nano second per foot?
You also need a delay in the proper place to account for the "zero distance"
delay of the receivers & transmitters.
Seems like one other "Ground" receiver is all that's needed to triangulate
the location horizontally...

There was an article in QST within the last year or so where some fellas
measured the delay through a, I think, 2M repeater versus distance...same
concept, 'cept they just used a dual trace scope..

--
Steve N, K,9;d, c. i My email has no u's..

4035. Re: MHW 612 "data-sheet" wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 00:21:02 UTC
From: Highland Ham <abgm0csz.kn6whyz@ntlworld.com>
Message-ID: <Uj8uc.45$911.14@newsfe5-gui.server.ntli.net>
Source record: 25846

> I have constructed a VHF PA for 2m Band with MHW612, but the efficiency
seems
> to be very low. Has anyone the "data sheet" of Motorola from that module?
I was
> looking for around Internet without success.
==========
A few years ago I bought 3 pcs at a flea market (connection diagramme
showing external components included)
The diagramme shows . Supply voltage 12 -15 Input 200 mW @ 50 Ohms
Output 20 W @ 50 Ohms.
Would also be very interested in spec sheet.
Question : Has this module linear characteristics ,hence can it be used for
SSB or is it just for AM & FM ?

Frank GM0CSZ / KN6WH

4036. dds + pic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 01:30:56 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <WDRtc.5465$Yf6.4533@bignews1.bellsouth.net>
Source record: 25822

Has anybody here attempted to use a pic to control a dds chip (and wrote the software himself)? I was looking at G3XJP's article on his 'pic-n-mix' vfo using an 16C84 to control an AD9850. I can't belive he was able to get all that functionality into just 1k of code and 64 bytes of eeprom. (you can find his article as an apnote on the Analog Devices web site ... AN-557 is the number)

I'm thinking of using the AD9954 dds chip instead of the 9850.

I'm just starting to look at what's required in code to get from a BCD input to the DDS word. Keep in mind G3XJP didn't hard code his clock as a constant, it can be adjusted. The formula to get the DDS word involves some math with fractional parts, it can be done in interger math with some scaling or lookup tables, but there isn't much room in a pic. I just ordered some 16F88's with 4k of program space and 256 bytes of eeprom so I would have a little more room.

Any starting ideas would be welcome!

4037. Re: dds + pic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 02:01:16 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <M9Stc.1172$LS6.559@nwrdny01.gnilink.net>
Source record: 25823

It's really not difficult at all once you understand the DDS serial message structure. I did it in PICBasic with a 14F675 and a AD9850 DDS for my HF Lab System, including a 9600 baud software UART and a few routines that do analog capture and log detector calibration (http://mysite.verizon.net/jdrocci/). The whole code footprint was about 600 words if I recall, and it could be much smaller if it were coded in assembly, as the Basic compiler loads a number of subroutines that don't always get called. If you're daunted by the math involved, PICBasic might be the way to go as it includes multiply & divide capabilities.

Joe
W3JDR

"Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message news:WDRtc.5465$Yf6.4533@bignews1.bellsouth.net...
> Has anybody here attempted to use a pic to control a dds chip (and
> wrote the software himself)? I was looking at G3XJP's article on
> his 'pic-n-mix' vfo using an 16C84 to control an AD9850. I can't
> belive he was able to get all that functionality into just 1k of
> code and 64 bytes of eeprom. (you can find his article as an apnote
> on the Analog Devices web site ... AN-557 is the number)
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>
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> a BCD input to the DDS word. Keep in mind G3XJP didn't hard code
> his clock as a constant, it can be adjusted. The formula to
> get the DDS word involves some math with fractional parts, it can
> be done in interger math with some scaling or lookup tables, but
> there isn't much room in a pic. I just ordered some 16F88's with
> 4k of program space and 256 bytes of eeprom so I would have a little
> more room.
>
> Any starting ideas would be welcome!
>

4038. Re: dds + pic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 02:26:16 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <fpStc.5895$YZ4.1056@bignews2.bellsouth.net>
Source record: 25824

W3JDR wrote:
> It's really not difficult at all once you understand the DDS serial message
> structure. I did it in PICBasic with a 14F675 and a AD9850 DDS for my HF Lab
> System, including a 9600 baud software UART and a few routines that do
> analog capture and log detector calibration
> (http://mysite.verizon.net/jdrocci/). The whole code footprint was about 600
> words if I recall, and it could be much smaller if it were coded in
> assembly, as the Basic compiler loads a number of subroutines that don't
> always get called. If you're daunted by the math involved, PICBasic might be
> the way to go as it includes multiply & divide capabilities.
>
> Joe
> W3JDR
>
I'm not familiar with the picbasic, unless thats an extension of the
basic stamp product. I'm fairly good with assembler code, though the
pic processor is new to me (I'm more familiar with the 8051, 80x86
and other Intel processors). The pic seems to be a much simpler
instruction set (more RISC like). Compared to the 8051, the
instructions per clock on the pic look a little better than the
8051 so performance should be good.

The work that needs to be done seems clear to me, the best way to
write the needed basic routines in assembler (for the pic anyway)
will take some study, to get the fewest lines of code required to
fit in the limited space. If anybody has good binary to bcd and
32 bit multiply and divide routines alread written it would help
not to have to re-invent those wheels. (Maybe a search on google
is in order here).

My pet-pieve on ham projects published in magazines are those
authors that DONT make their source code available, but sell
burned proms or pics. Publishing a construction article using
a micro without the source code available is like NOT providing
the schematic, but offering a PCB!!! How are hams going to
improve the state of the art if we don't share!!!

Ok off the soap box!

>
> "Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
> news:WDRtc.5465$Yf6.4533@bignews1.bellsouth.net...
>
>>Has anybody here attempted to use a pic to control a dds chip (and
>>wrote the software himself)? I was looking at G3XJP's article on

>>his 'pic-n-mix' vfo using an 16C84 to control an AD9850. I can't
>>belive he was able to get all that functionality into just 1k of
>>code and 64 bytes of eeprom. (you can find his article as an apnote
>>on the Analog Devices web site ... AN-557 is the number)
>>
>>I'm thinking of using the AD9954 dds chip instead of the 9850.
>>
>>I'm just starting to look at what's required in code to get from
>>a BCD input to the DDS word. Keep in mind G3XJP didn't hard code
>>his clock as a constant, it can be adjusted. The formula to
>>get the DDS word involves some math with fractional parts, it can
>>be done in interger math with some scaling or lookup tables, but
>>there isn't much room in a pic. I just ordered some 16F88's with
>>4k of program space and 256 bytes of eeprom so I would have a little
>>more room.
>>
>>Any starting ideas would be welcome!
>>
>
>
>

4039. Re: Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 02:57:07 UTC
From: averyfineman@aol.com
Message-ID: <20040528225707.13325.00000268@mb-m12.aol.com>
Source record: 25825

In article <DePtc.1710$hB2.1306@nwrdny03.gnilink.net>, "W3JDR" <joe@roccis.com>
writes:

>Dead-zone = phase noise. Very little dead-zone = very little phase noise.
>Bigger dead-zone = bigger phase noise.
>You can interpolate the rest for yourself.

I have to disagree with some of that.

First of all, a "dead zone" or the almost-exactly-in-phase condition,
occurs at only one VCO frequency where the control voltage sets
up the frequency for that in-phase condition.

Yes, at that exact frequency, there COULD be some phase noise.
But, the phase noise may NOT be from this "dead zone" effect.
Phase noise can come from MANY different sources. If it occurs
well away from the in-same-phase "dead zone" then the phase
noise is NOT caused by any "dead zone."

The relative phase between signal and reference inputs to a PFD
correspond to the VCO control voltage (times the charge-pump or
integrator circuit constants). Signal and reference phases when
in lock will always be offset from one another, one leading and one
lagging. A good loop will show a constant offset of phases even
when both inputs hold a constant phase.

Len Anderson

4040. Re: Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 02:57:10 UTC
From: averyfineman@aol.com
Message-ID: <20040528225710.13325.00000269@mb-m12.aol.com>
Source record: 25826

In article <c98e3s$1jl$1@newshost.mot.com>, "Steve Nosko"
<suteuve.nosukowicuz@moutouroula.com> writes:

>"Avery Fineman" <averyfineman@aol.com> wrote in message
>news:20040528154326.09069.00000098@mb-m17.aol.com...
>> In article <B_Htc.4677$pt3.1214@attbi_s03>, "Rick Karlquist N6RK"
>> <richard@karlquist.removethis.com> writes:
>>
>> >There are various fixes for the dead zone problem.
>> >In the mid-1970's, Fairchild (the original company)
>> >sold an "11C44" phase detector that got rid of the
>> >dead zone by injecting a narrow pulse so that the
>> >phase detector pulses would never have to try to
>> >go to zero width. Eric Breeze holds the patent
>> >on this technique; if interested read his patent.
>> >Analog Devices makes that AD9901 phase detector
>> >which gets around the dead zone by first dividing
>> >the frequency by 2. However, it is not suitable
>> >for a frequency synthesizer because of the large
>> >spurious sidebands resulting from this technique.
>> >Motorola had some patents on the circuits in its
>> >MC145159 that dealt with the dead zone and sampling
>> >sidebands. It also used a divide by 2 technique, that
>> >was not documented; (we figured it out by observing
>> >the chip's output). That chip may have been inherited by
>> >On Semiconductor. It was originally developed for
>> >some division of GE.
>>
>> The "dead zone problem" is less a problem and more a
>> state of mind. :-)
>>
>> When implemented with a charge-pump circuit (voltage
>> & time converter to current) between the PFD and loop
>> filter, it rather disappears into the woodwork of the whole
>> PLL. The phase difference between signal and reference
>> is proportional to the control voltage of the VCO producing
>> the basic frequency. There is ALWAYS going to be a
>> signal versus reference phase offset when the entire loop is
>> in lock so this dreaded "dead zone problem" will only show
>> up in a very narrow range of controlled frequency.
>>
>> General intuitive thought on any PLL or other synthesizer
>> closed loop is that the relative phase between signal and
>> reference is zero. It isn't. If it was, then the VCO could not

>> be controlled. As a very rough indicator of VCO frequency,
>> that signal v. reference offset phase exists for quick scope
>> checking...when the control voltage range of the VCO is
>> known. Good for a quick bench check.
>>
>> In practical terms, that dreaded "dead zone" isn't visible in a
>> real-world example.
>>
>> Case in point: 23+ years ago, Rocketdyne Division of
>> Rockwell International (now a Division of Boeing) was beginning
>> work on a Deformable Mirror for laser work (they had a sizeable
>> optics group) that used a 1 MHz signal out of optics to indicate
>> the light phase error of an optical interferometer. I rigged up a
>> 74H family phase-frequency detector circuit as the heart of that,
>> an integrator out of that into an A-to-D converter to get a digital
>> version for computer data manipulation. By all the careful
>> measurement, the expected dead zone didn't show up on any
>> graphing and the standard lab time interval counters could
>> resolve, accurately, 2 nanoseconds using time averaging.
>> [translates to rather less than a degree of phase error] The
>> optical physicists had been hopping up and down about "dead
>> zone" in meetings but the actual circuit performance didn't show it.
>>
>> One reason for the non-observation of any dead zone is that the
>> digital gates forming the PFD were so lightly loaded in other-gate
>> capacitance that their propagation delays all tended to be the
>> same. Datasheet values of propagation delay of gates are all given
>> as maximums, rather worst-case things with lots of pFds connected
>> to outputs, etc. Put on half a prototype board, loaded only by other
>> gates of the PFD and the resistor input of an op-amp integrator, the
>> capacitance loading was minimal. [project was successful, and
>> spawned more work on deformable mirrors]
>>
>> It can be an interesting academic problem to achieve a zero dead-
>> dead zone effect in a PFD, but thats about it. When working at
>> the comparison frequency of less than a few MHz, the PFD dead
>> zone due to differential propagation delays of the gates disappears
>> into the woodwork when using 74LS or faster digital families.
>>
>> There's plenty to be concerned about in any frequency synthesizer
>> subsystem, but a phase-frequency detector gate structure is a
>> very minor problem in my opinion.
>>
>> DDS and fractional-N loops in synthesizers have their own problems
>> such as spurious output, but those problems can't really be traced
>> to any PFD dead-zone effect. A PFD is wonderful as a control loop
>> element in that it can control a VCO (of the loop) from way off the
>> frequency and bring it into a lock phase range...from either worst-
>> case start-up frequency. [way back in the beginning of radio time,
>> lock loops had to use sawtooth sweep circuits to cure that start-up

>> condition, and couldn't control beyond +/- 90 degrees of phase
>> shift...PFDs easily handle +/-180 degrees]
>>
>> Len Anderson
>> retired (from regular hours) electronic engineer person
>
>Len - Avery, whomever,
> Our experiences differ. When designing PLL synths back then for two-war
>radio, we always saw the dead zone.

"Two-war radio?" PRC-25? Term not understood. Experience has
hands-on with everything from a PRC-8 to a PRC-104, but little with
the PRC-25 or -77.

>In a type 2 loop (hope I'm remembering
>my control theory correctly) the extra integration allows the VCO to float
>around within the dead zone, causing a low freq rumble at times. You could
>watch the phase wandering around on a scope on the two PD inputs.

If the loop is set for something like a 10 to 50 mSec lock-in time,
one has to look quick to see the actual lock-in. If the loop is
designed properly (VCO control voltage gain, time relative to the
reference frequency), there should not be any "wander."

In order to see the settling time from a large step-function of
frequency change, you need to sync a scope from the step
source and watch the jump-and-settle of the control voltage like
a damped sinewave. That's a quick check of loop control
action. Storage scope (old way) or digital scope (muy better)
are the best way to view that.

>We would
>force some small leakage current just to hold it up against one side of the
>dead zone. Perhaps the types of requirements causes the difference. We
>were in the audio range with the PD reference freq and lock times in the
>tens of ms. if I recall correctly.

Most of the older PLLs had reference frequencies of 1 to 5 KHz.
That's a period of 1.0 mS to 200 uS. Without about 5 to 10
cycles for settling-in (to near invisibility), that would be about
10 to 2 mS, rather quick.

> If I recall, the Fairchild chip did a better job of matching the delays.
>The small overlap causing a narrow pulse to occur seemed like a small
>issue - not much energy at the ref freq for some applications. Our
>synthesizers were of such requirements that there was a very tight balance
>between lock time and spurious. The loop filtering took much care to get
>the lock time and keep reference spurs down.

Regardless of the loop filter type, those are always fussy to avoid
pickup contamination of the VCO control line. But, knowing the
control voltage characteristics (delta-V v. frequency) over a range,
the design is strictly textbook formula stuff. It helps greatly if the

VCO control characteristics are linear versus frequency AND the division ratio maximum to minimum number is as small as possible.

I've seen a few applications where both the control voltage characteristics were very non-linear AND the division ratio of the PLL greater than 2:1 with the end result being an almost impossible lock at the extreme ends of the tuning range. One case was alleviated by extra circuitry from the division control to generate a DC bias summed with the control voltage. Not too swift since it took more parts, but better than failure.

In my own case, the filtering and shielding around the PFD to VCO had to be rather severe in order to keep it stable (too much high-energy circuitry rather nearby). Once that was achieved, there was no wandering at a 1 KHz reference input with proper values of known control voltage constants and accurate calculation of loop filter values. It was "tight."

Len Anderson

4041. Re: Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 03:31:14 UTC
From: Rick Karlquist N6RK <richard@karlquist.removethis.com>
Message-ID: <6uTtc.3779$3x.1975@attbi_s54>
Source record: 25827

Everyone please read the 11C44 datasheet at:

http://ira.club.atnet.at/rd/11c44/11C44.html

before declaring there is no dead zone. See figure 11.

Rick N6RK

"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040528154326.09069.00000098@mb-m17.aol.com...
> In article <B_Htc.4677$pt3.1214@attbi_s03>, "Rick Karlquist N6RK"
> <richard@karlquist.removethis.com> writes:
>
> >There are various fixes for the dead zone problem.
> >In the mid-1970's, Fairchild (the original company)
> >sold an "11C44" phase detector that got rid of the
> >dead zone by injecting a narrow pulse so that the
> >phase detector pulses would never have to try to
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> >on this technique; if interested read his patent.
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> >On Semiconductor. It was originally developed for
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> Case in point: 23+ years ago, Rocketdyne Division of
> Rockwell International (now a Division of Boeing) was beginning
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> optics group) that used a 1 MHz signal out of optics to indicate
> the light phase error of an optical interferometer. I rigged up a
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> [translates to rather less than a degree of phase error] The
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> zone" in meetings but the actual circuit performance didn't show it.
>
> One reason for the non-observation of any dead zone is that the
> digital gates forming the PFD were so lightly loaded in other-gate
> capacitance that their propagation delays all tended to be the
> same. Datasheet values of propagation delay of gates are all given
> as maximums, rather worst-case things with lots of pFds connected
> to outputs, etc. Put on half a prototype board, loaded only by other
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> to any PFD dead-zone effect. A PFD is wonderful as a control loop

> element in that it can control a VCO (of the loop) from way off the
> frequency and bring it into a lock phase range...from either worst-
> case start-up frequency. [way back in the beginning of radio time,
> lock loops had to use sawtooth sweep circuits to cure that start-up
> condition, and couldn't control beyond +/- 90 degrees of phase
> shift...PFDs easily handle +/-180 degrees]
>
> Len Anderson
> retired (from regular hours) electronic engineer person

4042. Re: Non-directional tracking solution?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 03:49:02 UTC
From: washed_phenom@hotmail.com
Message-ID: <f8d01f7.0405281949.1e8c7123@posting.google.com>
Source record: 25828

washed_phenom@hotmail.com (Washed Phenom) wrote in message news:<f8d01f7.0405252201.33fb4ee3@posting.google.com>...

>
> Any advice, direction, URLs, or discussion is much appreciated.
>

I'm still following this thread with interest and looking up things that I don't understand. The recent exchanges of the past day have gone quite over my head, but I'm reaching.

In my travels, I found this link. It seems this setup is using two antennas, but I'm wondering if a similar 4-antenna solution could be used for what I am trying to do. It would seem that the ability to use a common PC audio card and readily available software would be a big bonus. Comments welcome, particularly if this idea is way-off what I'd need! The URL:

http://www.vlf.it/rdfsoftware/rdf.html

4043. Re: Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 04:01:11 UTC
From: Rick Karlquist N6RK <richard@karlquist.removethis.com>
Message-ID: <bWTtc.11435$eY2.451@attbi_s02>
Source record: 25829

Let me try again to explain dead zone.

Many PLL's never experience the dead zone because the loop
filter is constructed using op amps with high (10 mV)
offset voltage specs. This offset forces the loop to
lock up outside the dead zone. If you use a low offset op amp,
and then put in an offset adjust pot to take out any
residual offset from the phase detector, you can observe
the spurious sidebands at the phase detection frequency
null out. However, you will then find that the loop bandwidth
has changed substantially, because you are in the dead zone
region. The VCO will get more phase noise because the
loop wanders around (like a bang-bang loop) in the dead
zone, and/or the change in loop bandwidth has de-optimized
the suppression of VCO noise by the PLL. I have
personally observed this and other engineers I have
mentored have also observed it (after first arguing with
me that it wouldn't happen). By the way, the pot
tweaking to null sidebands doesn't hold over temperature
(no surprise) so it's still bogus even without the dead zone
issue.

To correct previous misinformation about the 11C44: the
gates are not better matched; rather there is an extra pulse
injection circuit as described in Eric Breeze's patent. This
information is from a conversion with Eric Breeze 28 years
ago. The 11C44 hasn't been available for many years but
that was due to mismanagement of Fairchild (which
was bought by National) rather than lack of merit of
the 11C44. (There was a lot of great technology at
Fairchild screwed up by mismanagement).

Rick N6RK

"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040528225707.13325.00000268@mb-m12.aol.com...
> In article <DePtc.1710$hB2.1306@nwrdny03.gnilink.net>, "W3JDR"
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> writes:
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> >You can interpolate the rest for yourself.
>
> I have to disagree with some of that.

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> First of all, a "dead zone" or the almost-exactly-in-phase condition,
> occurs at only one VCO frequency where the control voltage sets
> up the frequency for that in-phase condition.
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> Yes, at that exact frequency, there COULD be some phase noise.
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> integrator circuit constants). Signal and reference phases when
> in lock will always be offset from one another, one leading and one
> lagging. A good loop will show a constant offset of phases even
> when both inputs hold a constant phase.
>
> Len Anderson

4044. Re: Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 04:01:12 UTC
From: Rick Karlquist N6RK <richard@karlquist.removethis.com>
Message-ID: <cWTtc.7287$pt3.7223@attbi_s03>
Source record: 25830

If you build a PLL with a low offset op amp (not the usual
ones with 10 mV offset spec) and then use a pot to tweak
out the residual phase detector output offset voltage, you
will see the sidebands on the VCO null out at a certain setting
of the pot. At this setting, you will typically be in or near
the dead zone. Although the spurious sidebands are impressively
low, the loop bandwidth will now be unpredictable, which
may de-optimize the phase noise. Also, there may be a lot
of low frequency residual FM on the VCO because the loop
is acting like a bang bang loop. Many engineers have never
seen this happen, because it is unlikely to happen by accident.
BTW, the pot setting won't hold very well over temperature.

Rick N6RK

"Avery Fineman" <averyfineman@aol.com> wrote in message
news:20040528225707.13325.00000268@mb-m12.aol.com...
> In article <DePtc.1710$hB2.1306@nwrdny03.gnilink.net>, "W3JDR"
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> in lock will always be offset from one another, one leading and one
> lagging. A good loop will show a constant offset of phases even
> when both inputs hold a constant phase.
>
> Len Anderson

4045. Re: DC saturation for ferrite cores

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 04:09:00 UTC
From: Rick Karlquist N6RK <richard@karlquist.removethis.com>
Message-ID: <w1Utc.7334$pt3.5869@attbi_s03>
Source record: 25831

I have observed this phenomenon as well but it seems
to be mainly an issue with beads or shapes with small
holes. The bead magnetizes from the inside out.
Larger "toroids" with sizeable center holes don't magnetize
as easily. This make sense physics-wise since Ampere's
law says H is inversely proportional to radius.

Rick N6RK

"J M Noeding" <la8ak@online.no> wrote in message
news:aph1b0tkt0n7njhpcsl46o0f3sn74rd79d@4ax.com...
> Reposted due to changed URL
>
> Hi
> have noted the following measurement (from LA7MI) forAmidon
> FB43-4301, and wonder if someone knows more available data for actual
> ferrite- and iron-powder cores to be used in transmitters?
>
> For a Amidon FB43-4301 the inductance drops by 50% for 1.2At. 3At for
> 75% reduction. One should keep the DC-current below the value of 0.5A
> to keep the reduction below 0.5. In the example above this rule is
> used, but the best is to use push-pull arrangement and the DC
> magnitation is kept to a minimum level. The inductance reduction is
> stored and the effect is called remanence, cores used for direct
> current should have air-gap
>
> Will write a page - http://www.noding.com/la8ak/12345/n12.htm (changed
> URL) for constructing RF power amplifier based on an article written
> by LA7MI and distributed to a local London radio club in 1992
>
> 73
> Jan-Martin
> LA8AK
> http://home.online.no/~la8ak/c.htm
>

4046. Re: dds + pic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 10:39:13 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <lLZtc.1469$LS6.535@nwrdny01.gnilink.net>
Source record: 25832

Ken,
PICBasic isn't a "Basic Stamp". It's a true compiler that you program in Basic and it produces PIC object code that can be programmed into any PIC. There are also several "C" compilers that have similar capabilities. I like PICBasic because it takes care of all the initialization housekeeping, has a watchdog timer, and contains many useful high-level directives for things like software A-D conversion, software UART, SPI serial I/O, math, & much more. The best product is made by made by Micro Engineering Labs (www.melabs.com) and they call it PICBasic Pro, but their product is a little pricey. There's also a $20 version from www.oshonsoft.com that's essentially the same. Both compilers make PIC programming a breeze, and also produce relatively tight & fast code. Also, you can mix Basic & assembler in your source program if you wish.

Joe
W3JDR

"Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:fpStc.5895$YZ4.1056@bignews2.bellsouth.net...
> W3JDR wrote:
> > It's really not difficult at all once you understand the DDS serial
message
> > structure. I did it in PICBasic with a 14F675 and a AD9850 DDS for my HF
Lab
> > System, including a 9600 baud software UART and a few routines that do
> > analog capture and log detector calibration
> > (http://mysite.verizon.net/jdrocci/). The whole code footprint was about
600
> > words if I recall, and it could be much smaller if it were coded in
> > assembly, as the Basic compiler loads a number of subroutines that don't
> > always get called. If you're daunted by the math involved, PICBasic
might be
> > the way to go as it includes multiply & divide capabilities.
> >
> > Joe
> > W3JDR
> >
> I'm not familiar with the picbasic, unless thats an extension of the
> basic stamp product. I'm fairly good with assembler code, though the
> pic processor is new to me (I'm more familiar with the 8051, 80x86
> and other Intel processors). The pic seems to be a much simpler
> instruction set (more RISC like). Compared to the 8051, the
> instructions per clock on the pic look a little better than the
> 8051 so performance should be good.
>

> The work that needs to be done seems clear to me, the best way to
> write the needed basic routines in assembler (for the pic anyway)
> will take some study, to get the fewest lines of code required to
> fit in the limited space. If anybody has good binary to bcd and
> 32 bit multiply and divide routines alread written it would help
> not to have to re-invent those wheels. (Maybe a search on google
> is in order here).
>
> My pet-pieve on ham projects published in magazines are those
> authors that DONT make their source code available, but sell
> burned proms or pics. Publishing a construction article using
> a micro without the source code available is like NOT providing
> the schematic, but offering a PCB!!! How are hams going to
> improve the state of the art if we don't share!!!
>
> Ok off the soap box!
>
>
>
> >
> > "Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
> > news:WDRtc.5465$Yf6.4533@bignews1.bellsouth.net...
> >
> >>Has anybody here attempted to use a pic to control a dds chip (and
> >>wrote the software himself)? I was looking at G3XJP's article on
> >>his 'pic-n-mix' vfo using an 16C84 to control an AD9850. I can't
> >>belive he was able to get all that functionality into just 1k of
> >>code and 64 bytes of eeprom. (you can find his article as an apnote
> >>on the Analog Devices web site ... AN-557 is the number)
> >>
> >>I'm thinking of using the AD9954 dds chip instead of the 9850.
> >>
> >>I'm just starting to look at what's required in code to get from
> >>a BCD input to the DDS word. Keep in mind G3XJP didn't hard code
> >>his clock as a constant, it can be adjusted. The formula to
> >>get the DDS word involves some math with fractional parts, it can
> >>be done in interger math with some scaling or lookup tables, but
> >>there isn't much room in a pic. I just ordered some 16F88's with
> >>4k of program space and 256 bytes of eeprom so I would have a little
> >>more room.
> >>
> >>Any starting ideas would be welcome!
> >>
> >
> >
> >

4047. Looking for spare parts for HP 8558B Spectrum Analyzer

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 11:55:45 UTC
From: &#65533;ke Stenberg <noemail@noemail.se>
Message-ID: <c99to1$h3e$1@hudsucker.umdac.umu.se>
Source record: 25833
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Hi,

I'm looking for spare parts for a HP 8558B Spectrum Analyzer. I need the
following: complete reference level knob, fine tuning knob, and front screen
for CRT.

73 de &#65533;ke SM2FNI

(Jag s&#65533;ker reservdelar till en spectrum Analyzer HP8558B. Jag beh&#65533;ver
f&#65533;ljande: logreferens ratten och fine tuning ratten.
Dessutom beh&#65533;ver jag frontsk&#65533;rmen p&#65533; CRT r&#65533;ret.)

4048. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 13:09:18 UTC
From: Henry Kolesnik <kolesnik@sbcglobal.net>
Message-ID: <2Y%tc.1241$sJ2.646@newssvr23.news.prodigy.com>
Source record: 25834
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

Mark
Any more info on the jumpy HPs appreciated.
--
73
Hank WD5JFR
"qrk" <SpamTrap@reson.com> wrote in message
news:kd4oa0ldgi0j07dsiodvjgd524lpqkdl0m@4ax.com...
> On 19 May 2004 06:08:37 -0700, skavanagh72nospam@yahoo.ca (Steve
> Kavanagh) wrote:
>
> >Thanks for all your comments. Since speculation has started here is
> >what I know about the capacitors.
> >
> >Those used in the 2.5 GHz source are surplus from a company that makes
> >high quality stuff. They were probably procured to a military or
> >space specification but I am not sure. The 10.5 GHz source was
> >manufactured by MA/COM about 20 years ago. All of them are the usual
> >deep maroon (is that the right word ?) to brown colour.
> >
> >Keep in mind I am being pretty picky. I consider short term frequency
> >jumps of much over 100 Hz to be unsatisfactory - that is 10-40 parts
> >per billion depending on which source is considered. The largest
> >observed jumps are about ten times this. Of course, since these are
> >crystal oscillators, the corresponding capacitance jumps must be much
> >larger, since the crystal should dominate the oscillator stability. I
> >would not consider them "crappy", just not as good as one might be led
> >to expect. I have used capacitors from the same provenance as those
> >in the 2.5 GHz source in LC oscillators at a few MHz with no observed
> >problems. The smooth portion of the warm-up drift is reasonably
> >normal in both cases...only the jumpiness is unusual.
> >
> >Steve
>
> Crystals can also jump. Just look at HP oven oscillators used in the
> GPS time/frequency references. Very jumpy. A collegue tried 5
> oscillators in the GPS time/freq reference and all were jumpy to
> various degrees. He was noting sub-ppb jumps.
>
> Mark

4049. Re: dds + pic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 14:06:06 UTC
From: xpyttl <xpyttl_NOSPAM@earthling.net>
Message-ID: <10bh66hd1sig5a4@corp.supernews.com>
Source record: 25835

"Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:WDRtc.5465$Yf6.4533@bignews1.bellsouth.net...

> Has anybody here attempted to use a pic to control a dds chip (and
> wrote the software himself)?

Wander on over to
http://www.amqrp.org/elmer160/board/index.html
and click the 'Test Software.ZIP' link. In the source is just a few lines
to control the DDS. That particular program does everything but the kitchen
sink, and the DDS part is just a tiny fraction. The advantage here is that
the DDS code is split out, and you can see just how simple it really is.

Then, click on the 'VFO Software.ZIP' link. That piece of code for the same
hardware is really focused on the VFO capability, and has all sorts of
features.

I think Craig still has the original code still in there from WB2V that
allows you to calibrate your oscillator against WWV. If not, the original
'SigGen' code does. Google for SigGen, WB2V, WB9KZY or AA0ZZ.

..

4050. FS: Custom Cloclks with your Call, Picture, etc, Cheep>Neat-o

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 14:24:41 UTC
From: rlucch2098@aol.com
Message-ID: <20040529102441.09837.00000119@mb-m06.aol.com>
Source record: 25836

All info w/samples is here>
www.myradioroom.com
73...
Rich WA2RQY

4051. Re: dds + pic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 15:07:47 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <ID1uc.14586$3X4.8617@bignews5.bellsouth.net>
Source record: 25837

xpyttl wrote:
> "Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
> news:WDRtc.5465$Yf6.4533@bignews1.bellsouth.net...
>
>
>>Has anybody here attempted to use a pic to control a dds chip (and
>>wrote the software himself)?
>
>
> Wander on over to
> http://www.amqrp.org/elmer160/board/index.html
> and click the 'Test Software.ZIP' link. In the source is just a few lines
> to control the DDS. That particular program does everything but the kitchen
> sink, and the DDS part is just a tiny fraction. The advantage here is that
> the DDS code is split out, and you can see just how simple it really is.
>
> Then, click on the 'VFO Software.ZIP' link. That piece of code for the same
> hardware is really focused on the VFO capability, and has all sorts of
> features.
>
> I think Craig still has the original code still in there from WB2V that
> allows you to calibrate your oscillator against WWV. If not, the original
> 'SigGen' code does. Google for SigGen, WB2V, WB9KZY or AA0ZZ.
>
> ..
>
>
The amqrp.org site has lots of good stuff there, thanks.

Google turned up http://www.njqrp.org/ham-pic/projects.htm
Lots of good code there. Best way to learn how to program
a new micro is to look at code already written for it. Thanks!

4052. Re: dds + pic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 15:09:41 UTC
From: Richard Hosking <richardh@iinet.net.au>
Message-ID: <40B8A7B5.4030604@iinet.net.au>
Source record: 25838

I have a design with source code for the Atmel AT90S8535 and AD9854 at
http://members.iinet.net.au/~richardh/Direct%20Digital%20Synthesizer%20using%20the%20AD9854%20quadrature%20DDS.htm

(sorry about the address - I must get around to redoing the site one day)

Richard

Ken Scharf wrote:
> W3JDR wrote:
>
>> It's really not difficult at all once you understand the DDS serial
>> message
>> structure. I did it in PICBasic with a 14F675 and a AD9850 DDS for my
>> HF Lab
>> System, including a 9600 baud software UART and a few routines that do
>> analog capture and log detector calibration
>> (http://mysite.verizon.net/jdrocci/). The whole code footprint was
>> about 600
>> words if I recall, and it could be much smaller if it were coded in
>> assembly, as the Basic compiler loads a number of subroutines that don't
>> always get called. If you're daunted by the math involved, PICBasic
>> might be
>> the way to go as it includes multiply & divide capabilities.
>>
>> Joe
>> W3JDR
>>
> I'm not familiar with the picbasic, unless thats an extension of the
> basic stamp product. I'm fairly good with assembler code, though the
> pic processor is new to me (I'm more familiar with the 8051, 80x86
> and other Intel processors). The pic seems to be a much simpler
> instruction set (more RISC like). Compared to the 8051, the
> instructions per clock on the pic look a little better than the
> 8051 so performance should be good.
>
> The work that needs to be done seems clear to me, the best way to
> write the needed basic routines in assembler (for the pic anyway)
> will take some study, to get the fewest lines of code required to
> fit in the limited space. If anybody has good binary to bcd and
> 32 bit multiply and divide routines alread written it would help
> not to have to re-invent those wheels. (Maybe a search on google
> is in order here).
>
> My pet-pieve on ham projects published in magazines are those

> authors that DONT make their source code available, but sell
> burned proms or pics. Publishing a construction article using
> a micro without the source code available is like NOT providing
> the schematic, but offering a PCB!!! How are hams going to
> improve the state of the art if we don't share!!!
>
> Ok off the soap box!
>
>
>
>>
>> "Ken Scharf" <wa2mzeNOTTHIS@bellsouth.net> wrote in message
>> news:WDRtc.5465$Yf6.4533@bignews1.bellsouth.net...
>>
>>> Has anybody here attempted to use a pic to control a dds chip (and
>>> wrote the software himself)? I was looking at G3XJP's article on
>>> his 'pic-n-mix' vfo using an 16C84 to control an AD9850. I can't
>>> belive he was able to get all that functionality into just 1k of
>>> code and 64 bytes of eeprom. (you can find his article as an apnote
>>> on the Analog Devices web site ... AN-557 is the number)
>>>
>>> I'm thinking of using the AD9954 dds chip instead of the 9850.
>>>
>>> I'm just starting to look at what's required in code to get from
>>> a BCD input to the DDS word. Keep in mind G3XJP didn't hard code
>>> his clock as a constant, it can be adjusted. The formula to
>>> get the DDS word involves some math with fractional parts, it can
>>> be done in interger math with some scaling or lookup tables, but
>>> there isn't much room in a pic. I just ordered some 16F88's with
>>> 4k of program space and 256 bytes of eeprom so I would have a little
>>> more room.
>>>
>>> Any starting ideas would be welcome!
>>>
>>
>>
>>

4053. Re: Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 18:54:41 UTC
From: averyfineman@aol.com
Message-ID: <20040529145441.18863.00000210@mb-m02.aol.com>
Source record: 25839

In article <bWTtc.11435$eY2.451@attbi_s02>, "Rick Karlquist N6RK"
<richard@karlquist.removethis.com> writes:

>Let me try again to explain dead zone.
>
>Many PLL's never experience the dead zone because the loop
>filter is constructed using op amps with high (10 mV)
>offset voltage specs. This offset forces the loop to
>lock up outside the dead zone.

With any phase-frequency detector, the width of the output
rectangular wave (from the digital portion) is proportional
to the control voltage output. That width can be converted
to a DC control voltage by a charge pump (pins 4, 5, 10, 11
in either the MC4044 or 11C44 package) or done externally
in an integrator such as with an op-amp.

When locked, the signal and reference inputs of the PFD will
be in-phase but the relative phases are offset in time. It is
that offset which eventually produces the control voltage that
brings the VCO into the in-phase condition.

A "dead zone" does indeed exist in all such circuits but it
will take effect ONLY in the VCO frequency region where the
phases of signal and reference input are the same or very
nearly the same. At any other VCO frequency the "dead zone"
has no effect since the phase offsets of signal and reference
are away from that "dead zone." Note: The signal and reference
phases will be "in-phase" meaning that they are both on the
same frequency but the signal is offset in phase from the
reference.

The "offset" of any extra circuit elements to an op-amp used
in coupling the PFD to the VCO can be used as a stop-gap
cure for the "dead-zone" but that still is effective only in the
phase relationship of the signal v. reference inputs where they
are nearly the same phase.

>If you use a low offset op amp,
>and then put in an offset adjust pot to take out any
>residual offset from the phase detector, you can observe
>the spurious sidebands at the phase detection frequency
>null out.

Observation shows the entirety of the loop action. It does
not pin down a cause of the spurious outputs. Those spurious

outputs can be caused by a number of different things.

>However, you will then find that the loop bandwidth
>has changed substantially, because you are in the dead zone
>region. The VCO will get more phase noise because the
>loop wanders around (like a bang-bang loop) in the dead
>zone, and/or the change in loop bandwidth has de-optimized
>the suppression of VCO noise by the PLL.

The VCO control voltage curve sets part of the loop filter's
frequency response and is called the "gain" of the loop
feedback. Bandwidth is dependent primarily by the
reference frequency plus the lock-in response time desired.
Too much "gain" and the whole loop goes into oscillation,
never settling down; too little and the loop takes a very long
time to lock in (and may never do so). Curvature of the slope
of the PFD output (converted from time to voltage) affects the
"gain" and thus the total closed-loop condition.

>I have
>personally observed this and other engineers I have
>mentored have also observed it (after first arguing with
>me that it wouldn't happen).

The "dead zone" does indeed exist but I'm simply saying that
(1). It isn't an ogre ready to strike fear in use; (2). It doesn't
effect a PLL lock over all VCO frequencies...just that narrow
range of VCO frequencies where the relative phase offsets of
the signal and reference inputs to the PFD are about the same.

The original question involved a six 2-input, two 3-input, and
(one 4-input) gate EQUIVALENT of the '44. That original '44
design is an elegant one, a sort of gigantic flip-flop on steroids
which will work over a +/-180 degree range. It is far superior to
the old types of phase detectors which had only a +/- 90 degree
operating range. The time characteristics (or phase relationship
of input rectangular signals) of such a circuit can be much
improved by using faster-responding digital logic families. By
using 74F or 74H or other very fast gates, the "dead zone" can
be made very small, enough to essentially forget about any such
effects on the overall PLL with a 10 KHz or lower reference
frequency.

If there is anxiety over the PFD operation, it can be examined
with a 'scope and a stable, delayed signal pulse synced from
the reference input. The '44 circuit type doesn't need square
waves but can operate solely on leading edges. With a time-
interval-averaging counter, the signal input phase can be set/
characterized very accurately as well as the output pulse width.
Lacking a time counter, a 'scope (hopefully with delayed time
base function) can be used for coarser measurement. The
'scope will display the "dead zone" condition.

>To correct previous misinformation about the 11C44: the
>gates are not better matched; rather there is an extra pulse
>injection circuit as described in Eric Breeze's patent.

That's not included in the diagram shown on the 11C44 data sheet website you referenced. That gate diagram and charge pump and Darlington bipolar circuits are exactly as in the original Motorola '44 data sheet. Either PFD gate arrangement can be duplicated using "discrete" logic gates.

In my opinion there's an elegant simplicity of the '44 gate arrangement which adequately fulfills its purpose of not only operating over a +/- 180 degree input phase offset but also staying on extremes of low or high frequency signal input condition, ideal for PLL start-up. I'd like to know the original circuit designer to send thanks for such elegance in circuitry.

Other manufacturers (such as RCA and Intersil) have duplicated the '44 PFD gate arrangement with success. It can be copied with ordinary logic gates without problem. If there is a region of a PLL to concentrate on, I'd say it is in the pulse width to DC control voltage following circuit and the loop filter (and its shielding and isolation).

Len Anderson
retired (from regular hours) electronic engineer person

4054. Regenerative Tube Receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 19:24:07 UTC
From: whru@msn.com
Message-ID: <e52bdeaf.0405291124.355a04b0@posting.google.com>
Source record: 25840

Hi everybody,
I would like to build a regenerative shortwave tube receiver using the
1U4 and 3A5 battery tubes. I know this is a very vague description of
the project. At one point I had a schematic that was sent to me by an
OM in VE land but I misplaced (lost) it. If anybody has something
along this line please let me know.
Thanks
73
Fred
wb6iiq

4055. Metcal RF generator

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 19:33:07 UTC
From: Chuck Olson <chuckolson01@REMOVETHIScomcast.net>
Message-ID: <Tz5uc.14050$eY2.3710@attbi_s02>
Source record: 25841

My Metcal RFG-30 soldering system power supply quit on me a week or so ago, so yesterday I decided to look into
the problem. After removing 8 screws holding two bottom covers I was able to slide out the front and back dress panels for very limited access to fasteners. I couldn't find any way to unfasten the top cover which would allow separating the two halves of the case, but that turned out to be unnecessary. The single power transistor, an IRF130 TO-3 case FET was mounted with nuts on studs that came up through the mounting holes. One end had a Nylon shoulder washer under the nut but the other end made electrical contact with the case and was found to be barely finger tight. Since that had to be the drain connection to the device, I gently firmed up that fastener and reattached the cables to test the unit - - back in operation. I was particularly impressed with the toroidal power transformer in the base - - that had to cost the manufacturer some serious cash. If anyone knows how to remove the plastic top panel, that knowledge will help improve the serviceability of this excellent product.

Chuck W6PKP

4056. Re: Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 21:10:13 UTC
From: Rick Karlquist N6RK <richard@karlquist.removethis.com>
Message-ID: <V_6uc.10374$pt3.1100@attbi_s03>
Source record: 25842

> I'd like to know the original
> circuit designer to send thanks for such elegance in circuitry.
>

I've never been able to find any historical reference to the MC4044
designer. It seems to be one of those lost pieces of history.

Rick N6RK

4057. Re: Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 21:22:48 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <c9auv8$s68$1@freenet9.carleton.ca>
Source record: 25845

"Rick Karlquist N6RK" (richard@karlquist.removethis.com) writes:
>> I'd like to know the original
>> circuit designer to send thanks for such elegance in circuitry.
>>
>
> I've never been able to find any historical reference to the MC4044
> designer. It seems to be one of those lost pieces of history.
>
> Rick N6RK
>
>
It's Jim Thompson, over in sci.electronics.design

He did some other famous ICs, like the MC1488 and MC1489 RS-232
pair, and I believe he did the MC1468 ECL VCO.

Michael VE2BVW

4058. Re: Regenerative Tube Receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 21:24:13 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <10bhvrmq3b7qscc@corp.supernews.com>
Source record: 25843

Fred wrote:
> Hi everybody,
> I would like to build a regenerative shortwave tube receiver using the
> 1U4 and 3A5 battery tubes. I know this is a very vague description of
> the project. At one point I had a schematic that was sent to me by an
> OM in VE land but I misplaced (lost) it. If anybody has something
> along this line please let me know.
> Thanks
> 73
> Fred
> wb6iiq

If you buy the RCA Receiving tube manual (RC-19, I think it's the 1959 version) from Antique Electronic Supply it has a schematic for one using two 1U4's and a 3V4. You need the book anyway...

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

4059. Re: Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 21:26:53 UTC
From: Tim Wescott <tim@wescottnospamdesign.com>
Message-ID: <10bi00mn4ltmjd5@corp.supernews.com>
Source record: 25844

Rick Karlquist N6RK wrote:

>> I'd like to know the original
>> circuit designer to send thanks for such elegance in circuitry.
>>
>
>
> I've never been able to find any historical reference to the MC4044
> designer. It seems to be one of those lost pieces of history.
>
> Rick N6RK
>
>

There is a discussion on sci.electronics.design on this same subject (spawned by Deepthi as well). Turns out that one of the regulars over there, Jim Thompson, is 1/2 of the designer of this part, and the 12xxx series replacement for it.

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

4060. Re: Regenerative Tube Receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 22:12:57 UTC
From: Bill Hennessy <elhen704@yahoo.com>
Message-ID: <40B90AE9.7020207@yahoo.com>
Source record: 25697

Fred wrote:
> Hi everybody,
> I would like to build a regenerative shortwave tube receiver using the
> 1U4 and 3A5 battery tubes. I know this is a very vague description of
> the project. At one point I had a schematic that was sent to me by an
> OM in VE land but I misplaced (lost) it. If anybody has something
> along this line please let me know.
> Thanks
> 73
> Fred
> wb6iiq

If you go to Antique Electronic Supply you will find some books by
Lindsay on this. Lindsay also has his own web site. Their are some
kits on the Anitque site too.

Bill N5NOB

4061. VIRUS

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-29 23:36:44 UTC
From: Billybob <billybob@home.net>
Message-ID: <889uc.8121$fw6.5410@fe39.usenetserver.com>
Source record: 25698
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

VIRUS
<udlvet@comcast.net> wrote in message news:sD6uc.19695$Ly.13114@attbi_s01...
> X Pics of my sister sticking a cucumber up herself X
>
>

>
>

4062. Re: MHW 612 "data-sheet" wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 00:22:43 UTC
From: Paul_Morphy <nopaul_morphy2@coolgoose.com>
Message-ID: <nP9uc.91815$hH.1653321@bgtnsc04-news.ops.worldnet.att.net>
Source record: 25699

"Highland Ham" <abgm0csz.kn6whyz@ntlworld.com> wrote in message
news:Uj8uc.45$911.14@newsfe5-gui.server.ntli.net...
> Question : Has this module linear characteristics ,hence can it be used
for
> SSB or is it just for AM & FM ?

According to the RF Parts site, which doesn't offer much more info than you
provided, it's a Class C module.

73,

"PM"

4063. HP-606a TEK 535a parts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 01:20:27 UTC
From: Robert Mozeleski <moz@ncx.com>
Message-ID: <34mdnRyPS9oP2STdRVn-jw@nni.com>
Source record: 25701
Cross-posted to: alt.ham-radio.marketplace,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,rec.radio.swap

I have some pictures up of the parts and complete units.
12 different coils, 6 labeled as
transformer:osc,50-170kc,165-560kc,530-1800kc,1.76-6.0mc,5.8-19.2mc,19-65mc.
6 labeled as transformer:ampl.50-170kc,165-560kc,530-1800kc,1.76-6.0mc,5.8-19.2mc,19-65mc.
http://userweb.ncx.com/moz/osc.jpg
Interstage audio transformer,running off the 12at7 audio oscillator.
http://userweb.ncx.com/moz/int.jpg
Variable cap, marked in parts list as 442 pf, measured about 465.
http://userweb.ncx.com/moz/var.jpg
Power transformer,115/230 pri,secondary as
174v 620ma
278v 77ma
24v 1.21a
6.3v 3.2a
6.3v 3.0a
http://userweb.ncx.com/moz/pwr.jpg
Any and all parts for HP606A signal generators.The 4 on the lower left are solid state
(Logimetrics AN/GRM50C 50khz-80mhz)with
nixies, 3 of them work, one has a broken power switch,$40 ea plus ship(a lot lighter than
the HP's)
http://userweb.ncx.com/moz/parts.jpg
Complete units for $40 plus ship.
http://userweb.ncx.com/moz/comp.jpg

"Robert Mozeleski" <moz@ncx.com> wrote in message news:afadnYpbj5sOCyvdRVn-vw@nni.com...
> I have many of these HP 606A signal generators being parted out. Also have complete ones
for sale but you wouldn't want to pay
> shipping on these. 50kc-65mhz. Send me an email if you need meters,knobs,tubes,
transformers, whatever. Also have a few
Tektronix
> 535a scopes being parted out with various plug-ins.
>
>

4064. Re: Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 01:33:01 UTC
From: Rick Karlquist N6RK <richard@karlquist.removethis.com>
Message-ID: <gRauc.20747$Ly.16788@attbi_s01>
Source record: 25700

Thanks.....QSY'ing to sci.electronics

"Michael Black" <et472@FreeNet.Carleton.CA> wrote in message
news:c9auv8$s68$1@freenet9.carleton.ca...
> "Rick Karlquist N6RK" (richard@karlquist.removethis.com) writes:
> >> I'd like to know the original
> >> circuit designer to send thanks for such elegance in circuitry.
> >>
> >
> > I've never been able to find any historical reference to the MC4044
> > designer. It seems to be one of those lost pieces of history.
> >
> > Rick N6RK
> >
> >
> It's Jim Thompson, over in sci.electronics.design
>
> He did some other famous ICs, like the MC1488 and MC1489 RS-232
> pair, and I believe he did the MC1468 ECL VCO.
>
>
> Michael VE2BVW
>
>

4065. Re: Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 03:02:38 UTC
From: crabtreejr@aol.com
Message-ID: <20040529230238.04256.00000099@mb-m25.aol.com>
Source record: 25702

Hello All

Rick Karlquist. N6RK, richard@karlquist.removethis.com on 5/28/04 wrote:
>Everyone please read the 11C44 datasheet at:
>
>http://ira.club.atnet.at/rd/11c44/11C44.html
>
>before declaring there is no dead zone. See figure 11.
>
>Rick N6RK
>
>"Avery Fineman" <averyfineman@aol.com> wrote in message
>news:20040528154326.09069.00000098@mb-m17.aol.com...
>> In article <B_Htc.4677$pt3.1214@attbi_s03>, "Rick Karlquist N6RK"
>> <richard@karlquist.removethis.com> writes:
>>
>> >There are various fixes for the dead zone problem.
>> >In the mid-1970's, Fairchild (the original company)
>> >sold an "11C44" phase detector that got rid of the
>> >dead zone by injecting a narrow pulse so that the
>> >phase detector pulses would never have to try to
>> >go to zero width. Eric Breeze holds the patent
>> >on this technique; if interested read his patent.
>> >Analog Devices makes that AD9901 phase detector
>> >which gets around the dead zone by first dividing
>> >the frequency by 2. However, it is not suitable
>> >for a frequency synthesizer because of the large
>> >spurious sidebands resulting from this technique.
>> > SNIP >

See also 'The PLL Dead Zone and How to Avoid it', A. Hill & J. Surber, RF Design, March 1992, pp131-134. The authors were with Analog Devices and compared the performance of the AD9901 with that of the MC4044.

My understanding of the AD9901 is that it behaves as a edge controlled frequency detector, until it gets close enough in frequency, when it switches to being an EXOR phase detector.

I am struggling to understand the comment above that the AD9901 is not suitable for use in frequency synthesisers because of the large spurious sidebands arising from its use. What causes the additional sidebands ?

Elsewhere in this thread there seems to have been some debate on the operation of the phase frequency detector. IMHO if the phase detector has a tri-state output then the loop over time must lock with no phase difference between the reference and controlled signals, ie 0 degrees.

73 John KC0GGH

4066. Re: Metcal RF generator

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 07:18:50 UTC
From: Pete KE9OA <p.gianak@worldnet.att.net>
Message-ID: <uVfuc.9827$_k3.230015@bgtnsc05-news.ops.worldnet.att.net>
Source record: 25703

I know, with the PS2A series, you have to remove the plastic overlay on the top panel to remove it, but I am not sure about the newer units. Actually, it is a pretty cool design, using a PWM scheme to control the power output. I've got a couple of the units.....I keep one at work (the small 400kHz unit) and the other one at home (the 13.58MHz unit).
These units do have short circuit and open circuit protection.

Pete

"Chuck Olson" <chuckolson01@REMOVETHIScomcast.net> wrote in message news:Tz5uc.14050$eY2.3710@attbi_s02...
> My Metcal RFG-30 soldering system power supply quit on me a week or so ago,
> so yesterday I decided to look into
> the problem. After removing 8 screws holding two bottom covers I was able
> to slide out the front and back dress panels for very limited access to
> fasteners. I couldn't find any way to unfasten the top cover which would
> allow separating the two halves of the case, but that turned out to be
> unnecessary. The single power transistor, an IRF130 TO-3 case FET was
> mounted with nuts on studs that came up through the mounting holes. One end
> had a Nylon shoulder washer under the nut but the other end made electrical
> contact with the case and was found to be barely finger tight. Since that
> had to be the drain connection to the device, I gently firmed up that
> fastener and reattached the cables to test the unit - - back in operation.
> I was particularly impressed with the toroidal power transformer in the
> base - - that had to cost the manufacturer some serious cash. If anyone
> knows how to remove the plastic top panel, that knowledge will help improve
> the serviceability of this excellent product.
>
> Chuck W6PKP
>
>

4067. Re: SSB AM FM Detector IC

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 07:20:34 UTC
From: Pete KE9OA <p.gianak@worldnet.att.net>
Message-ID: <6Xfuc.9831$_k3.230812@bgtnsc05-news.ops.worldnet.att.net>
Source record: 25704

That is correct.....in my current version, I am using an
Analog Devices AD607 as the Sync detector, but this chip will also function
as an SSB and as an FM detector.

Pete

"J M Noeding" <la8ak@online.no> wrote in message
news:s1ncb0pt86m1uqdi8m7hbt2lqgpnjkphtf@4ax.com...
> On Tue, 25 May 2004 15:47:32 GMT, "Harold E. Johnson"
> <W4ZCB@mchsi.com> wrote:
>
> >
> > >> Does anyone know of a multimode detector IC that will handle SSB, AM
and
> >FM?
> > >> Looking at an old ARRL handbook I can see LM373. Is there a more
modern
> > >> chip?
> > >>
> > >I have some 373's and I think, some 273's as well if you'd like to try
your
> > >hand at one. (free to good home)
> > >
> > >W4ZCB
> > >
> > It was a thread short while ago, you may also find some info on my
> > page http://home.online.no/~la8ak/c11.htm - unfortunately I had to PC
> > crashes this year so I cannot give more info, but believe Pete KE9OA
> > had some boards using somewhat more up-to-date solution
> >
> > 73
> > jm

4068. Re: HP-606a TEK 535a parts

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 07:26:00 UTC
From: Gregg <nospam@unknown.org>
Message-ID: <c0guc.2374$pX3.1775@clgrps12>
Source record: 25705
Cross-posted to: alt.ham-radio.marketplace,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,rec.radio.swap

Behold, Robert Mozeleski signalled from keyed 4-1000A filament:

> I have some pictures up of the parts and complete units. 12 different
> coils, 6 labeled as
> transformer:osc,50-170kc,165-560kc,530-1800kc,1.76-6.0mc,5.8-19.2mc,19-65mc.
> 6 labeled as
> transformer:ampl.50-170kc,165-560kc,530-1800kc,1.76-6.0mc,5.8-19.2mc,19-65mc.
> http://userweb.ncx.com/moz/osc.jpg
> Interstage audio transformer,running off the 12at7 audio oscillator.
> http://userweb.ncx.com/moz/int.jpg
> Variable cap, marked in parts list as 442 pf, measured about 465.
> http://userweb.ncx.com/moz/var.jpg
> Power transformer,115/230 pri,secondary as 174v 620ma 278v 77ma
> 24v 1.21a
> 6.3v 3.2a
> 6.3v 3.0a
> http://userweb.ncx.com/moz/pwr.jpg

Hi Robert,

How much for the above shipped to Rosedale, Canada, V0X 1X0?

--
Gregg
It's probably useful, even if it can't be SPICE'd
http://geek.scorpiorising.ca

4069. Re: AL Magnet Wire?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 08:35:00 UTC
From: matt wilson <mwilson2@nospam.bigpond.net.au>
Message-ID: <U0huc.17880$L.2947@news-server.bigpond.net.au>
Source record: 25706

"Tim Wescott" <tim@wescottnospamdesign.com> wrote in message
news:109io6mmkk4jv37@corp.supernews.com...
pbreed@netburner.com wrote:

> Aluminum is the lowest weight conductor.
> Copper, Silver and Gold have lower drop per unit area, but
>
> Al is the lightest.
>
>
> 12Ga suqare Al has 2.260 ohms per K ft.
> Weighs 7.28 lbs per K ft.
>
> 14 Ga Cu has 2.239 ohms per Kft
> 1Kft weighs 14.99lbs
>
>
> 6% more resistance at half the weight.
>
> From the same chart
> 11 Ga Al has 1,755 ohms and a wt of 9.237
>
> See:
>
> http://www.mwswire.com/square.htm
>
> I can buy wire from these guys' but they have a $100.00 minimum per line
item.
>
> Paul
>
>
-- snip --

Right. Aluminum has better conductivity per gram than copper. I
understood that even before you original post.

I also know that aluminum also has much _worse_ conductivity per unit
volume. And that the core that you're going to put it on can probably
accept a finite volume of wire. Since 12 gauge wire has about 50% more
area that means that you're only going to be able to put on 2/3 as many
turns, meaning your inductance is going to be about half of what you'd
get with copper wire. Even with a toroidal core you're still left with
about 2/3 your inductance.

That means that you need to go to a bigger core to get your inductance up. Not only does this mean that you'll be adding a lot of mass, but a bigger core will require more wire, so when you're done you won't be getting a 2x savings in wire mass, and you'll more than likely have an inductor that is actually heavier than the copper alternative.

So, to repeat, have you run _all_ the numbers and verified that you'll achieve a savings?

--

Tim Wescott
Wescott Design Services
http://www.wescottdesign.com

Perhaps use silver-plated copper in the inductor and aluminium in the busbars. Nothing to say that you have to use only the one material throughout.

4070. Re: most facile way to move heavy toolcase up/down stairs?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 08:39:10 UTC
From: matt wilson <mwilson2@nospam.bigpond.net.au>
Message-ID: <O4huc.17898$L.3307@news-server.bigpond.net.au>
Source record: 25707
Cross-posted to: rec.aviation.homebuilt,rec.radio.amateur.homebrew,sci.electronics.repair,rec.autos.tech

Don't most boats have at least one deck winch?

"Alan Horowitz" <alanh_27@yahoo.com> wrote in message
news:1e3670a7.0405061303.3f608231@posting.google.com...
ET onboard a ship. Have decided after time to have own tools. Got
them packed into one of those larger wheel-around, pull-the-handle-out
check-in hard-shell Samsonites. Ends up being a bit heavy, cause of
tool junkie genetic coding.

Works great..... except when have to go up or down ladderwells
("stairs", to you land pukes)

Better approach?

4071. Re: Metcal RF generator

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 09:11:07 UTC
From: Leon Heller <leon_heller@hotmail.com>
Message-ID: <40b9a52c$0$20518$cc9e4d1f@news-text.dial.pipex.com>
Source record: 25708

"Chuck Olson" <chuckolson01@REMOVETHIScomcast.net> wrote in message
news:Tz5uc.14050$eY2.3710@attbi_s02...
> My Metcal RFG-30 soldering system power supply quit on me a week or so
ago,
> so yesterday I decided to look into
> the problem.

[deleted]

I've got a couple of the later PS2V units. They have four screws securing the top cover. Just out of curiosity I removed it on one of the units and the Al panel beneath it carrying the On/Off switch and the LEDs. Everything inside seems fairly accessible for servicing, including the output device - a VN0106, I think, in a TO220 package.

Perhaps I could put one of them on 14 MHz by changing the crystal. 8-)

73, Leon

4072. Re: Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 09:59:37 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <dgiuc.5994$hB2.1329@nwrdny03.gnilink.net>
Source record: 25709

John,

> Elsewhere in this thread there seems to have been some debate on the
operation
> of the phase frequency detector. IMHO if the phase detector has a
tri-state
> output then the loop over time must lock with no phase difference between
the
> reference and controlled signals, ie 0 degrees.

Theoretically, the edge controlled PFD locks the signal & reference with 0 degrees phase error. When the loop is locked, the output pulses from the PFD are theoretically infinitesimally small. However, neither the PFD chip nor the external charge pump/loop filter are perfect. Any leakage in the charge pump and/or loop filter causes the PFD to continually output wider than normal pulses in order to supply the additional charge current necessary to make up for the current leakage. This results in a non-zero phase error at the PFD inputs.

> I am struggling to understand the comment above that the AD9901 is not
suitable
> for use in frequency synthesizers because of the large spurious sidebands
> arising from its use. What causes the additional sidebands ?

As mentioned, the PFD output pulses approach zero width at lock, making it easier to filter the pulses down to pure DC in the charge pump/loop filter. The XOR PD will output a 50% duty cycle pulse train at lock. This is much more difficult to filter down to pure DC, resulting in modulation of the VCO, and thus sidebands.

Joe
W3JDR

"John Crabtree" <crabtreejr@aol.com> wrote in message
news:20040529230238.04256.00000099@mb-m25.aol.com...
> Hello All
>
> Rick Karlquist. N6RK, richard@karlquist.removethis.com on 5/28/04 wrote:
> >Everyone please read the 11C44 datasheet at:
> >
> >http://ira.club.atnet.at/rd/11c44/11C44.html
> >
> >before declaring there is no dead zone. See figure 11.
> >
> >Rick N6RK
> >

> >"Avery Fineman" <averyfineman@aol.com> wrote in message
> >news:20040528154326.09069.00000098@mb-m17.aol.com...
> >> In article <B_Htc.4677$pt3.1214@attbi_s03>, "Rick Karlquist N6RK"
> >> <richard@karlquist.removethis.com> writes:
> >>
> >> >There are various fixes for the dead zone problem.
> >> >In the mid-1970's, Fairchild (the original company)
> >> >sold an "11C44" phase detector that got rid of the
> >> >dead zone by injecting a narrow pulse so that the
> >> >phase detector pulses would never have to try to
> >> >go to zero width. Eric Breeze holds the patent
> >> >on this technique; if interested read his patent.
> >> >Analog Devices makes that AD9901 phase detector
> >> >which gets around the dead zone by first dividing
> >> >the frequency by 2. However, it is not suitable
> >> >for a frequency synthesizer because of the large
> >> >spurious sidebands resulting from this technique.
> >> > SNIP >
>
> See also 'The PLL Dead Zone and How to Avoid it', A. Hill & J. Surber, RF
> Design, March 1992, pp131-134. The authors were with Analog Devices and
> compared the performance of the AD9901 with that of the MC4044.
>
> My understanding of the AD9901 is that it behaves as a edge controlled
> frequency detector, until it gets close enough in frequency, when it
switches
> to being an EXOR phase detector.
>
> I am struggling to understand the comment above that the AD9901 is not
suitable
> for use in frequency synthesisers because of the large spurious sidebands
> arising from its use. What causes the additional sidebands ?
>
> Elsewhere in this thread there seems to have been some debate on the
operation
> of the phase frequency detector. IMHO if the phase detector has a
tri-state
> output then the loop over time must lock with no phase difference between
the
> reference and controlled signals, ie 0 degrees.
>
> 73 John KC0GGH

4073. Re: Jumpy Silver Mica Capacitors ?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 12:52:52 UTC
From: ddwyer <dd@ddwyer.demon.co.uk>
Message-ID: <wQF8MKAkkduAFwdc@ddwyer.demon.co.uk>
Source record: 25710
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics.design

In article <2Y%tc.1241$sJ2.646@newssvr23.news.prodigy.com>, Henry Kolesnik <kolesnik@sbcglobal.net> writes
>Mark
>Any more info on the jumpy HPs appreciated.
>--
>73
This thread seems to be cloned from last week ; anyway as I said then silver mica are known to be subject to scintillation which may be due to de-lamination , later mica used powdered mica which may or maynot be better. Encapsulated low value caps are often degraded by the encapsulation material so sm would be better use NPO ceramic, microwave types should be lower loss.
Crystals jump in a changing temperature due to unwanted modes passing through the main mode as they have different temperature coeggicient. These are fairly gross effects of .01 to 10ppm jumps.

--
ddwyer

4074. Re: Regenerative Tube Receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 12:56:52 UTC
From: Eskay <spark_gap2000@yahoo.ca>
Message-ID: <l3mktzny22k9.1k223l92k8rfj.dlg@40tude.net>
Source record: 25711

On 29 May 2004 12:24:07 -0700, Fred wrote:

> Hi everybody,
> I would like to build a regenerative shortwave tube receiver using the
> 1U4 and 3A5 battery tubes. I know this is a very vague description of
> the project. At one point I had a schematic that was sent to me by an
> OM in VE land but I misplaced (lost) it. If anybody has something
> along this line please let me know.
> Thanks
> 73
> Fred
> wb6iiq

Fred,,I sent the article to you but wasn't watching what I was doing.
Too early in the morning.
You got 3 copies of the 2 page article in different sizes.
Sorry about that,It's a rather large attachment now.
Hope you can use it..73 de VE3JUA.

4075. Re: Regenerative Tube Receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 14:59:22 UTC
From: Eskay <spark_gap2000@yahoo.ca>
Message-ID: <x8id96q2r7gt.142eaa6vhbn15.dlg@40tude.net>
Source record: 25712

On 29 May 2004 12:24:07 -0700, Fred wrote:

> Hi everybody,
> I would like to build a regenerative shortwave tube receiver using the
> 1U4 and 3A5 battery tubes. I know this is a very vague description of
> the project. At one point I had a schematic that was sent to me by an
> OM in VE land but I misplaced (lost) it. If anybody has something
> along this line please let me know.
> Thanks
> 73
> Fred
> wb6iiq

Fred I need your real E-mail address..VE3JUA.

4076. Re: VIRUS

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 15:29:22 UTC
From: Bill <Bill@birchnet.demon.co.uk>
Message-ID: <vWcFnxWS3fuAFweL@birchnet.demon.co.uk>
Source record: 25713
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

In message <889uc.8121$fw6.5410@fe39.usenetserver.com>, Billybob
<billybob@home.net> writes
>VIRUS

The sister or the cucumber?
--
Bill

4077. Re: How determine pin-outs of car radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 16:35:19 UTC
From: mcalhoun@ksu.edu
Message-ID: <c9d2g7$a41@unix2.cc.ksu.edu>
Source record: 25714

>> ... determin[ing] the pin-outs of a Delco AM/FM radio ....

>Since Delco is GM's electronics arm, why not ...? Or a car audio place?

The latter suggestion worked, I was even able to purchase the proper plug
with pigtail leads, the radio is now in service, and I didn't even have
to trace any wiring!-)

Thanks, everyone, for all the suggestions.

--Myron, W0PBV.
--
Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge
PhD EE (retired). "Barbershop" tenor. CDL(PTXS). W0PBV. (785) 539-4448
NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle, Pistol)

4078. Re: Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 16:59:41 UTC
From: averyfineman@aol.com
Message-ID: <20040530125941.23112.00000313@mb-m04.aol.com>
Source record: 25715

In article <dgiuc.5994$hB2.1329@nwrdny03.gnilink.net>, "W3JDR" <joe@roccis.com>
writes:

>John,
>
>> Elsewhere in this thread there seems to have been some debate on the
>operation
>> of the phase frequency detector. IMHO if the phase detector has a
>tri-state
>> output then the loop over time must lock with no phase difference between
>the
>> reference and controlled signals, ie 0 degrees.
>
>Theoretically, the edge controlled PFD locks the signal & reference with 0
>degrees phase error. When the loop is locked, the output pulses from the PFD
>are theoretically infinitesimally small. However, neither the PFD chip nor
>the external charge pump/loop filter are perfect. Any leakage in the charge
>pump and/or loop filter causes the PFD to continually output wider than
>normal pulses in order to supply the additional charge current necessary to
>make up for the current leakage. This results in a non-zero phase error at
>the PFD inputs.

Not quite it. In order to derive a control voltage for the controlled
oscillator, the PFD output MUST BE A FINITE WIDTH.

In lock, at any frequency increment, the relative phase of the signal
and reference is constant, stable, BUT THERE IS ALWAYS A
PHASE OFFSET. This is necessary in order to derive the control
voltage which keeps the VCO in lock.

It's a common misconception to think of phase lock or even
phase control as trying to achieve a "zero degree" condition with
no phase offset. What is achieved in phase lock is a STABLE,
BUT OFFSET, phase relationship between signal and reference
frequencies at PFD inputs.

The easiest way to prove the condition is to scope an adjustable-
frequency PLL at the signal and reference PFD inputs and then
the '44-type PFD output into the loop filter. [measure the VCO
frequency separately if desired to prove the VCO, if desired] At
one locked frequency of the VCO the PFD output is a finite-width
pulse at the reference frequency. Change the divider setting for a
new VCO frequency and the PFD output has a different pulse
width. That can be confirmed by the DC control voltage...one value
at the first frequency setting, another value at the second frequency
setting. That DC control voltage is, in effect, an average value of

the pulse width out of the PFD.

>
>> I am struggling to understand the comment above that the AD9901 is not
suitable
>> for use in frequency synthesizers because of the large spurious sidebands
>> arising from its use. What causes the additional sidebands ?
>
>As mentioned, the PFD output pulses approach zero width at lock, making it
>easier to filter the pulses down to pure DC in the charge pump/loop filter.

No. In the '44-type PFD, the output pulses will be zero ONLY if
the divided VCO is way off frequency, at one end of the controllable
range or the other. IN LOCK the PFD output will ALWAYS HAVE
A FINITE PULSE WIDTH at the reference frequency repetition rate.
Without that pulse width averaged out there would be NO control
voltage to hold the divided VCO within range.

>The XOR PD will output a 50% duty cycle pulse train at lock. This is much
>more difficult to filter down to pure DC, resulting in modulation of the
>VCO, and thus sidebands.

It is no different. Control voltage averaged out of an XOR phase
detector is still from essentially the same finite pulse width. [those
have worked for years without any comments about "spurs"]

The vast difference between an XOR PD and the '44-type PFD is
that the XOR PD is limited to a +/- 90 degree control and can't
tell the loop how to come off of a start-up condition which is way
off to one side of the VCO range or the other. The '44-type PFD
works over +/- 180 degree range and DOES indicate a way-off
VCO signal frequency condition. It will start up safely. In the
old PDs limited to 90 degree range, the general way of starting
up was with a very slow sawtooth generator algebraically adding
to the control voltage...once the lock range was achieved, more
circuitry shut off the sawtooth. [lots of extra parts]

In either type of phase detector, the amount of reference frequency
ripple out of the loop filter is dependent on the type of filter and the
speed of lock-in time on changing frequency of the VCO through
the divider setting. On can make the loop filter very slow and cut
the (awful, terrible) spurious sidebands down...and also waste
literal minutes waiting for the PLL to lock in.

Those (awful, terrible) spurs at increments of the reference
frequency are seldom worth worrying about in a PLL with good
shielding and decoupling around the control voltage parts of the
PLL. [the proof lies in tens of thousands of simple PLLs working
all around the globe without worries over "not working" because
their spurious outputs are "too high"]

Len Anderson
retired (from regular hours) electronic engineer person

4079. Re: Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 19:46:30 UTC
From: W3JDR <joe@roccis.com>
Message-ID: <qSquc.3943$bD4.853@nwrdny02.gnilink.net>
Source record: 25716

Wrong on all counts Len!

> Not quite it. In order to derive a control voltage for the controlled
> oscillator, the PFD output MUST BE A FINITE WIDTH.>
> In lock, at any frequency increment, the relative phase of the signal
> and reference is constant, stable, BUT THERE IS ALWAYS A
> PHASE OFFSET. This is necessary in order to derive the control
> voltage which keeps the VCO in lock.

In the digital PFD, there are essentially two outputs that drive the charge storage circuit; "pump up" and "pump down". If there is a phase error, the corresponding output produces pulses that are exactly proportional to the time-error between the two PD inputs. If the time error corresponds to a leading phase relationship between VCO and reference, then the "pump down" output produces pulses equal in width to the lead time, discharging the charge storage element. If there is a lagging relationship, then the "pump up" output produces produces pulses equal in width to the lag time, charging the charge storage element. If there is no error , then neither pump output produces any pulses, and the charge storage element just 'holds' the last charge it had on it. In a practical PFD implementation, it is impossible to maintain the zero pulse-width point because the PFD is a digital feedback circuit, and you would need parts with zero propagation delay to make such a circuit. However, the width of the pulses in modern designs can get down into the nanosecond range at lock. For this reason, the PFD can produce much lower sideband content than the XOR, which outputs large pulses at lock. The larger the output pulse, the more difficult the loop filter design.

> No. In the '44-type PFD, the output pulses will be zero ONLY if
> the divided VCO is way off frequency, at one end of the controllable
> range or the other. IN LOCK the PFD output will ALWAYS HAVE
> A FINITE PULSE WIDTH at the reference frequency repetition rate.
> Without that pulse width averaged out there would be NO control
> voltage to hold the divided VCO within range.

Wrong again! With large frequency errors, the PFD produces constant pumping. If it didn't, it couldn't acquire with phase errors larger than 180deg.

You are also wrong in asserting that the lock-in range of the PFD is +/- 180 degrees. In fact, it is infinite (in theory). Yes, its linear output compliance range is +/- 180 degrees, but it can acquire lock even when there is an infinite frequency error. This is because once the PFD output exceeds it's compliance range, it outputs a constant "pump up" or "pump down" pulse train, which in turn causes the loop filter voltage to ramp up or down as the case might be until the signal comes back into the compliance range and lock is established. In practice the range is not infinite, only because you can't build a VCO with infinite tuning range or a PFD with infinite clocking

speed.

The XOR's big advantage is that it is simple, and there is no discontinuity around the phase lock point (as there is in the PFD), but it does not lock up readily in the face of frequency errors. The PFD's advantage is that it readily locks up, even in the face of large frequency errors and it also produces an easily filtered output.

Joe
W3JDR

"Avery Fineman" <averyfineman@aol.com> wrote in message news:20040530125941.23112.00000313@mb-m04.aol.com...
> In article <dgiuc.5994$hB2.1329@nwrdny03.gnilink.net>, "W3JDR" <joe@roccis.com>
> writes:
>
> >John,
> >
> >> Elsewhere in this thread there seems to have been some debate on the
> >operation
> >> of the phase frequency detector. IMHO if the phase detector has a
> >tri-state
> >> output then the loop over time must lock with no phase difference between
> >the
> >> reference and controlled signals, ie 0 degrees.
> >
> >Theoretically, the edge controlled PFD locks the signal & reference with 0
> >degrees phase error. When the loop is locked, the output pulses from the PFD
> >are theoretically infinitesimally small. However, neither the PFD chip nor
> >the external charge pump/loop filter are perfect. Any leakage in the charge
> >pump and/or loop filter causes the PFD to continually output wider than
> >normal pulses in order to supply the additional charge current necessary to
> >make up for the current leakage. This results in a non-zero phase error at
> >the PFD inputs.
>
> Not quite it. In order to derive a control voltage for the controlled
> oscillator, the PFD output MUST BE A FINITE WIDTH.
>
> In lock, at any frequency increment, the relative phase of the signal
> and reference is constant, stable, BUT THERE IS ALWAYS A
> PHASE OFFSET. This is necessary in order to derive the control
> voltage which keeps the VCO in lock.
>

> It's a common misconception to think of phase lock or even
> phase control as trying to achieve a "zero degree" condition with
> no phase offset. What is achieved in phase lock is a STABLE,
> BUT OFFSET, phase relationship between signal and reference
> frequencies at PFD inputs.
>
> The easiest way to prove the condition is to scope an adjustable-
> frequency PLL at the signal and reference PFD inputs and then
> the '44-type PFD output into the loop filter. [measure the VCO
> frequency separately if desired to prove the VCO, if desired] At
> one locked frequency of the VCO the PFD output is a finite-width
> pulse at the reference frequency. Change the divider setting for a
> new VCO frequency and the PFD output has a different pulse
> width. That can be confirmed by the DC control voltage...one value
> at the first frequency setting, another value at the second frequency
> setting. That DC control voltage is, in effect, an average value of
> the pulse width out of the PFD.
>
> >
> >> I am struggling to understand the comment above that the AD9901 is not
> suitable
> >> for use in frequency synthesizers because of the large spurious
sidebands
> >> arising from its use. What causes the additional sidebands ?
> >
> >As mentioned, the PFD output pulses approach zero width at lock, making
it
> >easier to filter the pulses down to pure DC in the charge pump/loop
filter.
>
> No. In the '44-type PFD, the output pulses will be zero ONLY if
> the divided VCO is way off frequency, at one end of the controllable
> range or the other. IN LOCK the PFD output will ALWAYS HAVE
> A FINITE PULSE WIDTH at the reference frequency repetition rate.
> Without that pulse width averaged out there would be NO control
> voltage to hold the divided VCO within range.
>
> >The XOR PD will output a 50% duty cycle pulse train at lock. This is much
> >more difficult to filter down to pure DC, resulting in modulation of the
> >VCO, and thus sidebands.
>
> It is no different. Control voltage averaged out of an XOR phase
> detector is still from essentially the same finite pulse width. [those
> have worked for years without any comments about "spurs"]
>
> The vast difference between an XOR PD and the '44-type PFD is
> that the XOR PD is limited to a +/- 90 degree control and can't
> tell the loop how to come off of a start-up condition which is way
> off to one side of the VCO range or the other. The '44-type PFD
> works over +/- 180 degree range and DOES indicate a way-off

> VCO signal frequency condition. It will start up safely. In the
> old PDs limited to 90 degree range, the general way of starting
> up was with a very slow sawtooth generator algebraically adding
> to the control voltage...once the lock range was achieved, more
> circuitry shut off the sawtooth. [lots of extra parts]
>
> In either type of phase detector, the amount of reference frequency
> ripple out of the loop filter is dependent on the type of filter and
the
> speed of lock-in time on changing frequency of the VCO through
> the divider setting. On can make the loop filter very slow and cut
> the (awful, terrible) spurious sidebands down...and also waste
> literal minutes waiting for the PLL to lock in.
>
> Those (awful, terrible) spurs at increments of the reference
> frequency are seldom worth worrying about in a PLL with good
> shielding and decoupling around the control voltage parts of the
> PLL. [the proof lies in tens of thousands of simple PLLs working
> all around the globe without worries over "not working" because
> their spurious outputs are "too high"]
>
> Len Anderson
> retired (from regular hours) electronic engineer person

4080. http://www.geocities.com/radio_qrp/

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 20:07:16 UTC
From: fmtx@euroseek.com
Message-ID: <ca3ae38d.0405301207.1135ae3d@posting.google.com>
Source record: 25717

http://www.geocities.com/radio_qrp/

4081. Re: http://www.geocities.com/snip

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 20:35:12 UTC
From: Bob Headrick <bobh@proaxis.com>
Message-ID: <10bkhccjv9hc20d@corp.supernews.com>
Source record: 25718

"R_QRP" <fmtx@euroseek.com> wrote in message
news:ca3ae38d.0405301207.1135ae3d@posting.google.com...
> http://www.geocities.com/[snip]

Looks more like a pirate radio site than QRP. No thanks.

- Bob

4082. An easy to build SSB transceiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 21:04:14 UTC
From: farhan@phonestack.com
Message-ID: <fcc11bcf.0405301304.7d022e71@posting.google.com>
Source record: 25719

I have just completed a new SSB transceiver that is very easy to build
and fun to use.
It is specially designed for beginners.
Check it out at http://farhan.net.co.nr/bitx.html .

Highlights are:
1. Very few coils to be wound.
2. Just 16 common 2N222 varity transistors used everywhere except for
the the IRF510 in the PA.
3. Works without a slow motion drive! Uses two knob tuning for coarse
and fine tuning.
4. Uses fewer different values of resistors and capacitors.
5. Stable design.

73s.
- Farhan

4083. dds + pic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 22:23:59 UTC
From: marsgal42@hotmail.com
Message-ID: <d42b5a72.0405301423.a814068@posting.google.com>
Source record: 25720

Ken Scharf <wa2mzeNOTTHIS@bellsouth.net> wrote in message
news:<WDRtc.5465$Yf6.4533@bignews1.bellsouth.net>...
> Has anybody here attempted to use a pic to control a dds chip (and
> wrote the software himself)?
> (snip...)

Or "herself", as the case may be...sheesh.

My very first attempt in this area was a long time
ago. I built a DDS around a Qualcomm parallel-input
DDS chip but got tired of binary computatin and
soldering diodes into a programming board. So I made
a controller with a shaft encoder, a Basic Stamp
and a serial-to-parallel interface cobbled together
out of 74HC logic. It worked fine.

Don't try to do everything at once. Get basic
functionality first, *then* get fancy. Do you
really need umpteen memories, variable tuning rates,
and so on? Right away? Probably not...

My Q2220 controller manipulated the 24 bit tuning
word directly (the steps were 50 million / 2^24,
about 3 Hz), then the software turned this into a
frequency readout. With modern chips you probably
don't want to do it this way around.

It's not a crime to recycle other peoples' code,
like the mundane and generally boring bit-pushing to
talk to a 44780 LCD controller.

Laura Halliday VE7LDH "Que les nuages soient notre
Grid: CN89mg pied a terre..."
ICBM: 49 16.05 N 122 56.92 W - Hospital/Shafte

4084. Re: Transceiver Repair in Ontario ???

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 23:12:27 UTC
From: "Mike T." <Mike@rrs.com>
Message-ID: <Vc-dnak8rY-C9yfdRVn-jg@look.ca>
Source record: 25721

I need this service too!

Not sure where you're located, I'm in Toronto, but Durham radio maybe a place to start. I bought my scanner from them. Nice people as I recall. Also, Lakeshore Electronics can probably fix anything - but they're specialty is high-end Motorolas for business and professionals. Give them a call and get a quote.

Good luck - please let us know if you find anywhere near TO. I got a sick Moto that needs some TX tuning.

"Bob" <nubob5001@yahoo.com> wrote in message news:WP5rc.5354$XY6.292479@read2.cgocable.net...
> Hi
>
> Does anyone know of someone who repairs older style transceivers HF? An
> older Drake? I think the finals may need repair. Hopefully someone in
> Southern Ontario or Western New York?
>
> Thank you
>
> Bob
>
>
>
>

4085. Re: Calibratable Field Strength Meter?

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 23:24:56 UTC
From: fmmck@aol.com
Message-ID: <20040530192456.27551.00000193@mb-m05.aol.com>
Source record: 25722

<< The "impedance" of free space/ air is 377 ohms. Thus the ratio of RF field voltage and current will be
fixed and related to the power density - unless the field is distorted.

As another crude approximation, assume that (unless you know a radiation pattern) that the unwanted signal's power is equally distributed over a sphere or maybe a hemisphere. >>

R. J. & Ed-

The calculations R. J. refers to apply to a field at a distance - called "far field". Up close, radiation patterns are complex and not easily predicted.

For the sake of discussion, lets carry this free space impedance topic a bit further. If you know transmitted power and the type of antenna, you can approximate the effective radiated power. For example, a half wave dipole and a quarter wave ground plane have about the same gain, 2.1 dB. If you are concerned about worst-case, you should assume a handheld radio with a rubber-duckie antenna, has the same gain as a full size ground plane. (You could also add some gain due to reflecting surfaces, just to be safe.)

Suppose your handheld radio has five watts output. For a gain of 2.1 dB, the effective isotropic radiated power is about 8 watts. This power illuminates the inner surface area of a sphere equal to (4/3) Pi R-squared, where R is the distance.

At some distance the field strength will equal an amount that will interfere with the defibrillator. Suppose that critical field strength is one Volt per Meter. One Volt squared, divided by 377 equals 2.7 milliWatts per square Meter.

Working this backwards with the sphere, 4/3 Pi R-squared divided by 8 watts equals the power (2.7 mW) per square meter at distance R. You can calculate that the minimum distance R equals 0.072 Meters, which is less than 3 inches. (Please don't hold any errors against me. Check it yourself!)

Since this distance is well within the near-field region, there is an uncertainty that depends on whether there is electric coupling or magnetic coupling. To be absolutely sure there is no interference, you could back off a couple of wavelengths, say fifteen feet on two meters. (Others may say ten times 3 inches would be enough.)

How does this one Volt per Meter assumption compare with the defibrillator specifications? If the spec is higher, then there seems little to worry about.

73, Fred, K4DII

4086. Re: Phase frequency Detector

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 23:32:26 UTC
From: averyfineman@aol.com
Message-ID: <20040530193226.07368.00000167@mb-m24.aol.com>
Source record: 25723

In article <qSquc.3943$bD4.853@nwrdny02.gnilink.net>, "W3JDR" <joe@roccis.com>
writes:

>Wrong on all counts Len!
>
>> Not quite it. In order to derive a control voltage for the controlled
>> oscillator, the PFD output MUST BE A FINITE WIDTH.>
>> In lock, at any frequency increment, the relative phase of the signal
>> and reference is constant, stable, BUT THERE IS ALWAYS A
>> PHASE OFFSET. This is necessary in order to derive the control
>> voltage which keeps the VCO in lock.
>
>In the digital PFD, there are essentially two outputs that drive the charge
>storage circuit; "pump up" and "pump down". If there is a phase error, the
>corresponding output produces pulses that are exactly proportional to the
>time-error between the two PD inputs. If the time error corresponds to a
>leading phase relationship between VCO and reference, then the "pump down"
>output produces pulses equal in width to the lead time, discharging the
>charge storage element. If there is a lagging relationship, then the "pump
>up" output produces produces pulses equal in width to the lag time, charging
>the charge storage element. If there is no error , then neither pump output
>produces any pulses, and the charge storage element just 'holds' the last
>charge it had on it.

Going to make it one of those long days? :-)

OK, so where is the VCO control voltage coming from and how does
it "know" how to reach the right voltage for the right frequency?

It doesn't...because the PFD output (MC4044 type) does not have
to. There will ALWAYS be a small error in any control loop...
otherwise a control loop couldn't function to do controlling (basic
control loop theory which so many seem to forget).

A "charge pump" is basically a voltage-to-current converter to
develop a basically-DC control voltage for the VCO of the PLL
after the loop filtering. One doesn't need to use the charge
pump in the MC4044 or the 11C44 chip. The digital output of
the PFD can go direct to the loop filter. Even with the charge
pump in-use, the whole thing (pump and loop filter or integrator/
filter) simply integrates a time variation (width of repetitious
pulses out of PFD) into a stable DC value.

>In a practical PFD implementation, it is impossible to
>maintain the zero pulse-width point because the PFD is a digital feedback
>circuit, and you would need parts with zero propagation delay to make such a

>circuit.

Absolutely not. There must be SOME gate delay. If there were zero, then every single D or J-K flip-flop would not work! Since they do work, there is always SOME internal gate delay.

That internal IC capacitance causing the delay is the cause for all that heat-dissipation effort on hundred-thousand-plus transistor junction ICs used in single-chip microcomputers. In a 9- or 10-gate IC there isn't a lot of heat rise...but the parasitic gate structure capacitance is always there and all gates have finitie propagation delays.

Some number of years ago I went into the old databooks (so far back they were free for anyone and still had the equivalent circuits in them...like thirty plus years ago) and started doing timing diagrams to see EXACTLY how they worked. Most interesting bit of "reverse engineering" and also quite interesting.

The '44-type PFD digital part is essentially a very complex D FF like structure and it triggers only one direction of transition edges (like the Ds and J-Ks). The '44 is more complex in trying to see how it works due to the various conditions of relative input phases. If there are more than two signal edges for every reference edge, the outputs hold at one state indicating a "way-off" towards the high frequency range end of the signal. If there are more than two reference edges for every signal edge, the outputs flip to the other state...the "way-off" signal frequency is too low.

However, when there is one input edge for each other input edge, the outputs produce a variable-width pulse, repetition rate equal to the reference frequency, which corresponds to the relative phase of the two inputs. The outputs are always "flipping" when the inputs are at the same frequency even though the inputs need NOT be in exact phase positioning. Not a problem. That variable width turns out to be extremely good for control since a simple integrator can convert the variable time into a variable voltage whose DC value is proportional to the relative inputs phase displacement.

An op-amp integrator circuit functions as a sort of time-to-current-to-output-voltage converter (technically, the input R is creating a pseudo-constant-current source for the mid-point of R and C of the integrator op-amp input). That can also be used as a "Type 1" loop filter. With some modifications of a basic integrator, it can become any of the other types. Or, one can, with a sensitive control voltage characteristic of the VCO, use a passive loop filter with the filter input directly on the PFD output (choose either one to go with polarity of the VCO control needed). For that alternate condition, the PFD Vcc *MUST* be stable and decoupled less it mess around with more badness in the control voltage. The "charge pump" circuit of the MC4044/11C44 is really optional

to use. It isn't absolutely necessary although it can cut down on
the number of parts used.

Based on hands-on observation of several of these PLLs, especially
those of PFDs made from individual logic gates, the PFD outputs
ARE pulses at the reference frequency repetition rate. Their width
is proportional to the integrated-averaged DC control voltage of the
VCO when in lock.

If what you say is true, then there would be ZERO control voltage
out of any of the mentioned interface circuits. Obviously, there
must be some finite amount of control voltage for the VCO to
adjust to a particular PLL frequency increment. That control
voltage is the integrated-averaged DC out of the loop filter, not
some mythical "charged whatsis" from that charge pump.

In looking at the relative phases of the signal and reference AC
inputs, the loop is LOCKED even though the phases are
offset. The phases remain "in step" and unchanging on the
'scope but they are offset in phase from one another. [that's
normal with this kind of PFD and PLL] I've been looking at
these things for about three decades and see the same things.
With the MC145151 combo PLL chip I'm playing with now, the
PFD gates aren't fully available for peeking, but it locks in as
advertised as I said above.

>However, the width of the pulses in modern designs can get down
>into the nanosecond range at lock.

Nobody, not even the PLL really cares. How much voltage are
you going to generate on the VCO control line from nanosecond
pulse widths at a 1 KHz reference input repetition rate? Very
little.

>For this reason, the PFD can produce much
>lower sideband content than the XOR, which outputs large pulses at lock. The
>larger the output pulse, the more difficult the loop filter design.

The only thing "difficult" about a PLL is others paying attention to
the REQUIRED values of control voltage gain and the reference
frequency AND the simple math needed to calculate those values.
"Difficult" is when the control voltage isn't linear over frequency
(which upsets the heck out of the control gain at one end of the
VCO range). "Difficult" is not paying attention to the subcircuit
isolation and shielding and decoupling that produces the control
voltage where it is ripe for picking up garbage that results in all
kinds of badness in VCO stability.

> > No. In the '44-type PFD, the output pulses will be zero ONLY if
>> the divided VCO is way off frequency, at one end of the controllable
>> range or the other. IN LOCK the PFD output will ALWAYS HAVE
>> A FINITE PULSE WIDTH at the reference frequency repetition rate.
>> Without that pulse width averaged out there would be NO control

>> voltage to hold the divided VCO within range.
>
>Wrong again! With large frequency errors, the PFD produces constant pumping.
>If it didn't, it couldn't acquire with phase errors larger than 180deg.

No. If you examine the states of all gates in a '44 PFD with
corresponding input waveform states, you will see that the
"way-off" (phase errors larger than 180 degrees) conditions of
the PFD outputs REMAIN in their fully-on or fully-off states.
That's the gem of this gate arrangement and the key to coming
into lock on power-up.

One reason I submitted my article to Jim Fisk at Ham Radio
magazine (it was not in the original sequence at the start of that
series) was as a result of trying to explain the gate-states of the
'44 PFD to another. The waveform timing diagrams in that
September 1982 article accurately show the state changes
(without the precise amount of internal gate delay, not really
needed in explanation). Just to make certain, I'd duplicated the
gate logic in an Apple][program to make sure...and to see the
variations in original conditions that might cause a bad start-up.
I didn't use the conventional bubble-and-arrow state change
diagrams since so few contemporaries could "read" them and
I didn't much care for that kind of presentation either. Waveforms
were an old familiar thing and I stuck with that.

>You are also wrong in asserting that the lock-in range of the PFD is +/- 180
>degrees. In fact, it is infinite (in theory).

"Infinite" only in the grossest sense of being - in effect - locked
up on either of the "way-off" conditions. From what I gather, it
was designed to do that very thing. An excellent thing to insure
start-up.

However, integrated-averaged to DC, the outputs of the PFD make
an excellent phase meter with a DC that can be converted to
binary in an A-to-D. The Rocketdyne Deformable Mirror project
used that characteristic to measure the heterodyned optical
signals from the optics at 1 MHz PFD input. It worked just fine
out to about +/- 179 degrees or so when calibrated for the whole
optical-electronic loop. [optics could approach 180 but never
quite get exactly there...but then that's difficult with electronics
also, needing time-interval averaging counters and such which
we DID use...but the optics folks wanted to tweak their stable
table optics more than tweaking instrument dials...:-)]

>Yes, its linear output
>compliance range is +/- 180 degrees, but it can acquire lock even when there
>is an infinite frequency error. This is because once the PFD output exceeds
>it's compliance range, it outputs a constant "pump up" or "pump down" pulse
>train, which in turn causes the loop filter voltage to ramp up or down as
>the case might be until the signal comes back into the compliance range and

>lock is established.

No. At beyond-control-range input frequencies, the PFD outputs
go to their stable, unchanging "way-off" states and stay there
until both inputs are the same frequency. Ain't no "pump" pulses
whatsoever at those "way-off" conditions.

>The XOR's big advantage is that it is simple, and there is no discontinuity
>around the phase lock point (as there is in the PFD), but it does not lock
>up readily in the face of frequency errors. The PFD's advantage is that it
>readily locks up, even in the face of large frequency errors and it also
>produces an easily filtered output.

In practice, since the last days of WW2, phase-frequency control
loops have used lots of extra circuitry to cure that start-up. Philco
did that with some S-band microwave radio relay gear used by the
USAF in 1955. Army used L-band crystal-controlled microwave
radio relay terminals by GE, had no problems. USAF had Philco
tech reps there seemingly all the time since their frequency control
tended to pop off lock and go sweeping frequency a lot from their
extra sawtooth circuitry. [PLL was first disclosed in 1932 by
"H. de Bellecize, working in France" according to my giant
1980 50th anniversary special edition of Electronics magazine]

There have been a few PFD circuits devised before the '44 type
but I'd say the '44 went all the way to excellence with elegance
in its simplicity. There have been at least one close to the '44
but arranged differently and with more internal parts...but that one
works about the same as the '44.

When you get the chance, grab a 'scope and look into the
waveforms of a PFD as well as the control voltage. You will
find out I'm right. No "theory" on that, just working PLL
hardware. I've seen and observed that, used the basic
knowledge to build my own PLLs (including a couple just for
me) and am confident in the explanation I gave. They WORK
by all the nice instruments from Hewlett and Packard (rest
their souls).

Len Anderson
retired (from regular hours) electronic engineer person

4087. Re: VIRUS

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-30 23:58:10 UTC
From: Billybob <billybob@home.net>
Message-ID: <3yuuc.9470$fw6.6591@fe39.usenetserver.com>
Source record: 25724
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

dont know.....I didnt try it...you open it up and let me know
"Bill" <Bill@birchnet.demon.co.uk> wrote in message
news:vWcFnxWS3fuAFweL@birchnet.demon.co.uk...
> In message <889uc.8121$fw6.5410@fe39.usenetserver.com>, Billybob
> <billybob@home.net> writes
> >VIRUS
>
> The sister or the cucumber?
> --
> Bill

4088. Re: VIRUS

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-31 00:06:44 UTC
From: Bill <Bill@birchnet.demon.co.uk>
Message-ID: <gCtGyhkUcnuAFw$K@birchnet.demon.co.uk>
Source record: 25725
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

```
In message <3yuuc.9470$fw6.6591@fe39.usenetserver.com>, Billybob
<billybob@home.net> writes
>dont know.....I didnt try it...you open it up and let me know

No chance !!!!!!!!!!!!!!!

>"Bill" <Bill@birchnet.demon.co.uk> wrote in message
>news:vWcFnxWS3fuAFweL@birchnet.demon.co.uk...
>> In message <889uc.8121$fw6.5410@fe39.usenetserver.com>, Billybob
>> <billybob@home.net> writes
>> >VIRUS
>>
>> The sister or the cucumber?
>> --
>> Bill
>
>
>

--
Bill
```

4089. Regenerative Tube Receiver schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-31 03:19:55 UTC
From: whru@msn.com
Message-ID: <e52bdeaf.0405301919.43dac5eb@posting.google.com>
Source record: 25726

Eskay (VE3JUA)
Thanks,
try this address: dh1nwr@yahoo.com however the one above should have worked too.
The reason for a seperate message is that I cannot retrieve the original thread.
73
Fred
wb6iiq

4090. Recomended mid-range shortwave set-up

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-31 05:59:21 UTC
From: Steve <abc@123.com>
Message-ID: <ZQzuc.76676$7R6.21762@newssvr25.news.prodigy.com>
Source record: 25727
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.shortwave

Hi,

I have wanted to get involved with shortwave for years and would like to get some recommendations on a mid-range ($200-400) receiver and antenna set-up. I plan on telescoping mast for shortwave, TV (mostly for uhf PBS stuff), and FM. The height restriction in our town is 50' but I imagine anything around 30' would produce good results since there are no big hills or trees nearby. In addition I own a newer 2.8 GHz PC running Windows XP for any recommendations on how I might incorporate this into the overall set-up.

Being inexperienced I am thinking I should start with simply listening with a capable mid-range receiver and then after some years time buy into a transmitter as well. This is all untutored preliminary thinking on my part and would welcome anyone's ideas as to how a beginner could best get started on the road to mid-to-high end shortwave/ham listening/broadcasting. I see this initial step as phase one of a two or three part program that will extend over a period of five or ten years.

Thank you for your help.

Steve

Note: I will be buying "Passport to World Band Radio" as a way of educating myself on some of the issues I mentioned

4091. Re: Metcal RF generator

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-31 15:48:58 UTC
From: Chuck Olson <chuckolson01@REMOVETHIScomcast.net>
Message-ID: <JtIuc.31970$n_6.29632@attbi_s53>
Source record: 25728

"Leon Heller" <leon_heller@hotmail.com> wrote in message
news:40b9a52c$0$20518$cc9e4d1f@news-text.dial.pipex.com...
> "Chuck Olson" <chuckolson01@REMOVETHIScomcast.net> wrote in message
> news:Tz5uc.14050$eY2.3710@attbi_s02...
> > My Metcal RFG-30 soldering system power supply quit on me a week or so
> ago,
> > so yesterday I decided to look into
> > the problem.
>
> [deleted]
>
> I've got a couple of the later PS2V units. They have four screws securing
> the top cover. Just out of curiosity I removed it on one of the units and
> the Al panel beneath it carrying the On/Off switch and the LEDs.
Everything
> inside seems fairly accessible for servicing, including the output
device -
> a VN0106, I think, in a TO220 package.
>
> Perhaps I could put one of them on 14 MHz by changing the crystal. 8-)
>
> 73, Leon
>

Thanks, Leon and Pete. This oldest of the 13.56 MHz power units has no fasteners visible on the top surface, so I figure it has to be fastened from the inside. I tried to look up through the bottom, but too many components were in the way. It usually shows up on Ebay at a pretty low price, presently there's one at $14.99 with no bid. I kinda like them because there are no funky RF switches to go bad. Some of the RFG-30 units have LED indicators, but out of 4 units, 3 of mine have incandescent lamps behind the front Metcal logo that no longer light up. Yes, that would really be a buzz, "rig here is a 30 watt Metcal RF Generator"! ! ! Might not be too hard to do.

These things must be exceptionally reliable since there's almost no information available (or needed, apparently) on how to repair them - - they must not be failing.

73, Chuck

4092. Re: Recomended mid-range shortwave set-up

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-31 17:17:26 UTC
From: Volker Tonn <screwdriver@mailberlin.net>
Message-ID: <newscache$m9clyh$iza$1@news.berlinweb.de>
Source record: 25729
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.shortwave

-=jd=- schrieb:

> As for a radio under $400.00, I'm *VERY* pleased with the ICOM PCR1000.
> Here's a blurb on it:
>
> http://www.universal-radio.com/catalog/widerxvr/1002.html
>
> It's an external computer controlled receiver, allows you to record direct
> to disk, allows software manipulation of the received signal's audio (EQ,
> DSP, decoding of digital signals - RTTY, FAX, etc.).
>

I have one and it's performs nearly equal to the Sony ICF 2010 /2001D.
Not too bad for a a widerange communications receiver.
For shortwave only I would take a look on the RX320 from TenTec when
going on a computer controled blackbox...
It is also DRM ready. Have a look:
http://www.universal-radio.com/catalog/commrxvr/0321.html

4093. Re: An easy to build SSB transceiver

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-31 19:43:25 UTC
From: Ken Scharf <wa2mzeNOTTHIS@bellsouth.net>
Message-ID: <CVLuc.49150$ZM1.22117@bignews6.bellsouth.net>
Source record: 25730

Ashhar Farhan wrote:
> I have just completed a new SSB transceiver that is very easy to build
> and fun to use.
> It is specially designed for beginners.
> Check it out at http://farhan.net.co.nr/bitx.html .
>
> Highlights are:
> 1. Very few coils to be wound.
> 2. Just 16 common 2N222 varity transistors used everywhere except for
> the the IRF510 in the PA.
> 3. Works without a slow motion drive! Uses two knob tuning for coarse
> and fine tuning.
> 4. Uses fewer different values of resistors and capacitors.
> 5. Stable design.
>
> 73s.
> - Farhan
I've bookmarked your page and the one you linked to for futher
reference. I'm in the process of designing and building a rig myself.
The final parameters are in flux at the momement. I recently bagged
a lot of 414 8.3688 mhz crystals on ebay (at less than 5 cents a rock)
in HC6U cases. I need to build a sweep oscillator to build a filter
around these cystals. However since my rig will be using an AD9954 DDS
vfo (which HAS sweep ability built in with a ram lookup table) I think
I will be building the vfo / microprocessor section first! I have a
number of PIC chips on order and I am getting the development tools
installed on my Linux box. I'm also in the process of building a PIC
programmer. (Amazing how one project spawns many others!).

I'll probably use a pair of IRF510's in push pull for my final. I've
heard they can produce as much as 40-50w out, but I'll be happy to get
25w. I've been stocking up on -2 and -6 toroids whenever I found a
batch on ebay. I had this crazy idea of building a switchable bpf
into an old TV turret tuner with removable coil strips. The band
switch would be the old tuner, I could add a 12 position rotary switch
to the back and have the micro processor read the switch.

4094. Re: Recomended mid-range shortwave set-up

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-31 19:45:48 UTC
From: Jeff Spidle <"j spidle comcast net">
Message-ID: <SNmdnTL4ScslESbdRVn-iQ@comcast.com>
Source record: 25731
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.shortwave

JD, I don't have a DRM receiver but there is a Radio Netherlands broadcast
in DRM from Bonaire aimed at the U.S. Check out

www.rnw.nl/realradio/html/schedule.html

Jeff
KC9EII

"-=jd=-" <jd770YOUR@HATpostmark.net> wrote in message
news:Xns94FA95C743601a216b130c132d203@63.218.45.22...
> On Mon 31 May 2004 01:17:26p, Volker Tonn <screwdriver@mailberlin.net>
> wrote in message news:newscache$m9clyh$iza$1@news.berlinweb.de:
>
> > >
> > >
> > > -=jd=- schrieb:
> > >
> > >> As for a radio under $400.00, I'm *VERY* pleased with the ICOM PCR1000.
> > >> Here's a blurb on it:
> > >>
> > >> http://www.universal-radio.com/catalog/widerxvr/1002.html
> > >>
> > >> It's an external computer controlled receiver, allows you to record
> > >> direct to disk, allows software manipulation of the received signal's
> > >> audio (EQ, DSP, decoding of digital signals - RTTY, FAX, etc.).
> > >>
> > >
> > > I have one and it's performs nearly equal to the Sony ICF 2010 /2001D.
> > > Not too bad for a a widerange communications receiver.
> > > For shortwave only I would take a look on the RX320 from TenTec when
> > > going on a computer controled blackbox...
> > > It is also DRM ready. Have a look:
> > > http://www.universal-radio.com/catalog/commrxvr/0321.html
> > >
> > >
> >
> >
> I'm not familiar with how the TenTec handles DRM (on-board or software
> based) but that is also something to consider, the PCR-1000 does *not*
> have DRM facilitation capabilities on-board at the receiver level.
> Although I have successfully compiled an open-source software based DRM
> decoder that purportedly will decode DRM via the audio stream, I have yet
> to snag a DRM broadcast to see how well it works (if it works at at all).
> European users have reported decent success with it.

>
> Back when I was looking around, I considered the TenTec, but went with the
> PCR-1000 for it's wider frequency coverage. If you aren't interested in
> freq's above 30,000 kHz, the TenTec may fit the bill better.
>
> I think the TenTec comes with DSP on-board and it's an optional unit on
> the ICOM. I've been getting by just fine with software based DSP.
>
> I guess with either receiver, you will wind up with the received
> audio/signal in your PC, at which point there's quite a bit of software
> (free and COTS) to allow you to manipulate and/or process that audio
> signal just about any way you may want.
>
> If the TenTec had the same frequency coverage, I'd go with it for sure.
>
> -=jd=-
> --
> My Current Disposable Email:
> jd770YOUR@HATpostmark.net
> (Remove YOUR HAT to reply directly)

4095. Re: Recomended mid-range shortwave set-up

Newsgroup: rec.radio.amateur.homebrew
Date: 2004-05-31 21:20:16 UTC
From: Frank Dresser <analogdial@worldnet.att.net>
Message-ID: <kkNuc.104048$hH.1833899@bgtnsc04-news.ops.worldnet.att.net>
Source record: 25732
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.shortwave

>
>
> I've tried for that one, but have so far managed to miss it. I wonder if
the
> DRM signal has any audible presence (static, hiss, data-like stream?) that
> could be detected by ear to let you know it's available...
>
>
>
> -=jd=-

Here's the DRM schedule:

http://drm.org/livebroadcast/globfieldtrial.htm

The transmissions from Sackville are a good bet. On an analog radio, it
sounds like a whole SW channel of constant hissing .

Frank Dresser